

# CATALOGUE

## UNIVERSITY OF WASHINGTON

For 1917-1918

### ANNOUNCEMENTS

For 1918-1919



SEATTLE  
WASHINGTON

## The Board of Regents

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

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

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

**OSCAR A. FECHTER**.....Yakima  
Term ends March, 1922

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

**WILLIAM A. SHANNON**.....Seattle  
Term ends March, 1923

**RUTH KARR MCKEE**.....Olympia  
Term ends March, 1923

**WILLIAM MARKHAM, Secretary to the Board**

# Officers of Administration

## THE UNIVERSITY

HENRY SUZZALLO, Ph. D., LL.D.....	President of the University
	Administration Hall
JOHN THOMAS CONDON, LL. M.....	Dean of Faculties
	Administration Hall
HERBERT THOMAS CONDON, LL. B.....	Comptroller
	Administration Hall
EDWARD NOBLE STONE, A. M.....	Registrar
	Administration Hall
EDWIN BICKNELL STEVENS, A. M.....	Executive Secretary
	Administration Hall
<sup>1</sup> ARTHUR RAGAN PRIEST, A. M.....	Dean of Men
MACY MILLMORE SKINNER, Ph. D.....	Assistant Dean of Men
	Administration Hall
ETHEL HUNLEY COLDWELL, A. M.....	Dean of Women
	Administration Hall
WILLIAM ELMER HENRY, A. M.....	Librarian
	Library
EVERETT OWEN EASTWOOD, C. E.....	Consulting Engineer
	Engineering Hall
<sup>1</sup> DAVID CONNOLLY HALL, M. D.....	University Health Officer
FRANK STEVENS HALL.....	Director of Museum
	Museum

## THE COLLEGES AND SCHOOLS

DAVID THOMSON, B. A.....	Dean of the College of Liberal Arts
	Denny Hall
CARL EDWARD MAGNUSSON, Ph. D.....	Acting Dean of the College of Engineering
	Engineering Hall
MILNOR ROBERTS, A. B.....	Dean of the College of Mines
	Mines Hall
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
	Commerce Hall
HUGO WINKENWERDER, M. F.....	Dean of the College of Forestry
	Forestry Hall
J. ALLEN SMITH, Ph. D.....	Dean of the Graduate School
	Denny Hall
HENRY LANDES, A. M.....	Dean of the College of Science
	Science Hall
FREDERICK ELMER BOLTON, Ph. D.....	Dean of the College of Education
	Home Economics Hall
IRVING MACKKEY GLEN, A. M.....	Dean of the College of Fine Arts
	Meany Hall
WILLIAM ELMER HENRY, A. M.....	Director of the Library School
	Library
<sup>1</sup> CARLETON HUBBELL PARKER, Ph. D.....	Dean of the College of Business Administration
<sup>1</sup> COLIN VICTOR DYMENT, B. A.....	Director of the School of Journalism
	Commerce Hall
STEPHEN IVAN MILLER, LL. B., A. B.....	Director of the College of Business Administration
	Commerce Hall
WILLIAM TAYLOR PATTEN, Captain U. S. A., Retired.....	Acting Director of the College of Naval, Military and Aeronautical Science
	Armory

## THE EXTENSION DIVISION

EDWIN AUGUSTUS START, A. M.....	Director
	Administration Hall

<sup>1</sup> Absent on War Service

<sup>1</sup> Died, March 17, 1918

## OFFICERS OF ADMINISTRATION

9

### OTHER ADMINISTRATIVE OFFICERS

LILLIAN BROWN GETTY, Secretary to the President.  
MAX HIPKOE, Assistant Purchasing Agent.  
WILLIAM BRACH JONES, A. B., Cashier.  
AIDEE WILSON, Secretary to the Comptroller.  
LAURA ALICE HURD, A. B., Secretary to the Registrar.

### BUILDINGS AND GROUNDS

WILLIAM WORTH DURHAM, Superintendent.  
SANDY MORROW KANE, Engineer.  
L. B. KETTENRING, Acting Electrician.  
STANLEY O. CARPENTER, Head Carpenter.  
GEORGE LEWIS MOTTER, Head Gardener.

### UNIVERSITY COMMONS AND RESIDENCE HALLS

CHLOE SHERMAN CLARKE, B. S., Supervisor of Dining Halls.  
FRANCIS HEVERLO, PH. B., in charge of Residence Halls.

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

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

### UNITED STATES ARMY RESERVE OFFICERS' TRAINING CORPS

WILLIAM TAYLOR PATTEN, Major, Infantry, U. S. A.  
MICHAEL J. CASHION, First Sergeant, U. S. A., Retired.  
AMBERS HARRIS, First Sergeant, U. S. A., Retired.

### FACULTY INSTRUCTORS WITH RANK OF CAPTAIN

Eric Temple Bell	Fred Washington Kennedy
Allen Fuller Carpenter	Arthur Wilson Linton
Leslie Forrest Curtis	Macy Millmore Skinner
Charles Wendell David	Walter Edmund Squire
Theodore Christian Frye	Edwin Augustus Start
Charles Louis Helmlinge	

### FACULTY INSTRUCTORS WITH RANK OF FIRST LIEUTENANT

Samuel Latimer Boothroyd	Clare Wilde Sexsmith
Joseph Daniels	Lloyd Leroy Small
William Elmer Duckering	Eli Victor Smith
James Alvin Gilbreath	Rexford Guy Tugwell
Walter Edward Roloff	Walter Bell Whittlesey

### UNITED STATES NAVAL TRAINING STATION

MILLER FREEMAN, Commander

### UNITED STATES BUREAU OF MINES PACIFIC NORTHWEST EXPERIMENT STATION

THOMAS VARLEY, Metallurgist and Superintendent.  
G. W. EVANS, Coal Mining Engineer.  
W. H. COGHILL, Metallurgist.  
F. C. RYAN, Electrometallurgist.  
H. A. DEFEW, Assistant Physical Chemist.  
U. B. WHITE, Chief Clerk.  
K. H. CHESHOLM, Foreman, Mines Rescue Training Station.

### UNITED STATES SHIPPING BOARD FREE NAVIGATION SCHOOL

JAMES E. GOULD, A. M., Special Expert in Charge.

### UNITED STATES DEPARTMENT OF AGRICULTURE BUREAU OF PLANT INDUSTRY

JAMES THOMPSON, B. S., Specialist in charge of Medicinal Plants.

## UNIVERSITY OF WASHINGTON

UNITED STATES BUREAU OF EDUCATION PACIFIC NORTHWEST RESEARCH STATION  
CLIFFORD WOODY, PH. D., Supervisor.

## STATE FOOD AND DRUG WORK

CHARLES WILLIS JOHNSON, PH. C., PH. D., State Chemist.  
FRANCES EDITH HINDMAN, M. S., Assistant State Chemist and Bacteriologist.  
<sup>1</sup>FOREST JACKSON GOODRICH, B. S., Assistant State Chemist.  
OMEGA HILTON, B. S., Assistant State Chemist.

## ENGINEERING EXPERIMENT STATION

CARL EDWARD MAGNUSSON, PH. D., Acting Director.

## LIBRARY STAFF

<sup>2</sup>WILLIAM ELMER HENRY, A. B., A. M. (Indiana); Librarian and Director of the Library School.  
CHARLES WESLEY SMITH, A. B., B. L. S. (Illinois); Reference Librarian and Associate Professor of Library Economy.  
EMMA PEARL McDONNELL, A. B. (Washington); Periodicals Librarian.  
EVELYN MAY BLODGETT, A. B. (Vassar); Pratt Institute Library School; Catalogue 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) Graduate in Library Economy; Order and Accession Librarian and Instructor in Library Economy.  
ERNESTINE HESLOP, A. B. (California), Graduate Drexel Institute Library School; Assistant Circulation Department.  
ELEANOR DAVIS, A. B. (Minnesota); Illinois Library School; Assistant Cataloguer.

## THE MUSEUM

FRANK STEVENS HALL, Director of the Museum.  
CLARENCE JOHN ALBRECHT, A. B. (Iowa); Taxidermist, in charge of Invertebrate Exhibits.

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<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on war service, January 8 to March 8, 1918.

# University Faculty

In this list the names of the faculty are arranged in six groups — professors, associate professors, assistant professors, instructors, associates, and lecturers — followed by the names of the teaching fellows and assistants. In each of the six groups the names occur in the order of academic seniority. An alphabetical list of the faculty is given on pages 14-21.

HENRY SUZZALLO, President of the University, *ex-officio* Chairman.

EDWARD NOBLE STONE, Registrar, *ex-officio* Secretary.

## PROFESSORS

HENRY LANDES  
EDMOND STEPHEN MEANT  
J. ALLEN SMITH  
CAROLINE HAVEN OBEE  
JOHN THOMAS CONDON  
HOBACE G. BYERS  
TREVOR KINCAID  
FREDERICK MORGAN PADELFORD  
MILNOR ROBERTS  
FREDERICK ARTHUR OSBORN  
WILLIAM SAVERY  
DAVID THOMSON  
CHARLES WILLIS JOHNSON  
PIERRE JOSEPH FREIN  
THEODORE CHRISTIAN FREY  
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

IRVING MACKAY GLEN  
EDWIN AUGUSTUS START  
CHARLES CEURUH MORE  
HENRY KREITZER BENSON  
JOHN WEINZEL  
HUGO WINKENWERDER  
VERNON LEWIS PARRINGTON  
FREDERICK ELMER BOLTON  
EDWIN JOHN VICKNER  
EFFIE ISABEL RAITT  
WILLIAM FRANKLIN ALLISON  
STEVENSON SMITH  
WILLIAM PIERCE GORSUCH  
CLARK PRESCOOT BISSETT  
ETHEL HUNLEY COLDWELL  
WILLIAM TAYLOR PATTEN  
ARTHUR RAGAN PRIEST  
ALLEN ROGERS BENEHAM  
LESLIE JAMES AYER  
COLIN VICTOR DYMONT  
BENJAMIN OYARZUN  
CARLETON HUBBELL PARKER  
STEPHEN IVAN MILLER, JR.  
WILLIAM FIELDING OGBURN

## ASSOCIATE PROFESSORS

LOREN DOUGLAS MILLMAN  
SAMUEL LATIMER BOOTHROYD  
BUET PERSONS KIRKLAND  
THOMAS KAY SIDBY  
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  
LEONARD VINCENT KOOS  
VANDEVERBER CUSTIS  
EDGAR ALLEN LOEW  
JOSEPH DANIELS  
ABRAHAM BERGLUND  
FRED CARLETON ATYB

## ASSISTANT PROFESSORS

EDWIN JAMES SAUNDERS  
OTTILIE GERTRUDE BOETZKES  
GEORGE IRVING GAVETT  
HANS JACOB HOFF

ROBERT EVSTAFIEFF ROSE  
ROBERT MAX GARRETT  
ELIAS TREAT CLARK  
EDWARD GODFREY COX

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

<sup>3</sup> Absent on leave, second and third quarters, 1917-1918.

<sup>4</sup> Absent on part time war service.

<sup>5</sup> Died, March 17, 1918.

<sup>6</sup> Absent on war service, January 8 to March 8, 1918.

<sup>7</sup> Period of exchange ended, February 1, 1918.

BLI VICTOR SMITH  
 HENRY LOUIS BRAKEL  
 \*CHARLES MUNRO STRONG  
 \*WILLIAM THEODORE DABY  
 HARVEY BRUCE DENSMORE  
 CHARLES EDWIN WEAVER  
 CLARENCE RAYMOND CORRY  
 ALLEN FULLER CARPENTER  
 GEORGE BURTON RIGG  
 GRACE GOLDENA DENNY  
 HORACE JAMES MACINTYRE  
 GINO ARTURO RATTI  
 JOEL MARCUS JOHANSON  
 †JOHN WILLIAM MILLER  
 FRED WASHINGTON KENNEDY  
 ERNST OTTO BECKELMAN  
 †CHARLES LOUIS HELMLINGE  
 JOHN WILLIAM HOTSON  
 †THERESA SCHMID McMAHON  
 LOUIS IRVING NEIKIRK  
 FRED WAYNE CATLETT  
 HAROLD EUGENE CULVER  
 FRANCES DICKEY  
 CARL FREILINGHUYSEN GOULD  
 †MARY FREDERICKA RAUSCH  
 WALTER EDMUND SQUIRE  
 MORITZ ROSEN  
 ALBERT FRANZ VENINO  
 †SAMUEL HERBERT ANDERSON  
 FRANK MELVILLE WARNER  
 NANNIE BELLE JUDY

FRIEDRICH KURT KIRSTEN  
 SERENO BURTON CLARK  
 CLIFFORD WOODY  
 MACY MILLMORE SKINNER  
 HAMILTON ACHILLS WOLF  
 †RALPH HASWELL LUTZ  
 †HARLAN LEO TRUMBULL  
 CURT JOHN DUCASSE  
 ERIC TEMPLE BELL  
 BEOR LEONARD GRONDAL  
 LUIS A. SANTANDE  
 FRED HARVEY HEATH  
 †LEWIS LILLY  
 BRUCE MUDGETT  
 REXFORD GUY TUGWELL  
 †VICTOR LOVITT OAKES CHITTICK  
 LESLIE FOREST CURTIS  
 EVERETT FRANCIS DAHM  
 WILLIAM ELMHURST DUCKERING  
 WALTER EDWARD ROLOFF  
 FRANCIS PATRICK GOSS  
 JOHN LOCKE WORCESTER  
 FRANK EDWARD MCKONE  
 FREDERIC ARTHUR RUSSELL  
 EMILIO GOGGIO  
 GEORGE EARL FREEBLAND  
 DAVID JOHN MYERS  
 ALEXANDER FREDERICK BRUCE CLARK  
 GEORGE HENRY JENSEN  
 HERMAN VANCE TARTAR

## INSTRUCTORS

SAMUEL THOMAS BEATTIE  
 SANDY MORROW KANE  
 WALTER BELL WHITTLESEY  
 JESSIE BEE MERRICK  
 NEWELL WHEELER SAWYER  
 †HJALMAR LAURITS OSTERUD  
 †HENRY SLATER WILCOX  
 RUDOLPH HERBERT ERNST  
 †LEO JONES  
 JOSEPH BARLOW HARRISON  
 LLOYD LEROY SMALL  
 CONRAD TRESSMANN  
 LUTHER EWING WEAR  
 FRANCES EDITH HINDMAN  
 †CLEMMENT AKERMAN  
 MABEL ASHLEY  
 HELEN BALOH CULVER  
 †VICTOR JOHN FARRAR  
 NATHAN FASTEN  
 EDWIN RAY GUTHRIE  
 CHARLES GUSTAVE PAUL KUSCHKE  
 FRANK JOSEPH LAUBE  
 JOSEPH GRATTAN O'BRYAN  
 EARL MILLIRON PLATT

†HAROLD OGDEN SEXSMITH  
 ALLETTA GILLETTE  
 CHARLES ALEXANDER GUBRAED  
 CHARLES WENDELL DAVID  
 JAMES ALVIN GILBREATH  
 SETH CHAPIN LANGDON  
 †HORACE HARDY LESTER  
 LOUISE VAN OGLE  
 ALBERT PORTER ADAMS  
 CHAUNCEY WERNECKE  
 KATE LILLA GREGG  
 MAX PATTEN PHILBRICK  
 MARY IRENE PRAY  
 HARRY ROGERS  
 HELEN HARRINGTON  
 †THOMAS AUGUSTUS MASON  
 ELVINE SIMON  
 CHLOE SHERMAN CLARKE  
 MARGARET HESSLER  
 ANNETTE EDENS  
 LIDA SCHIRMER  
 MILDRED WEST LORING  
 †GERHARD STEGBMAN  
 CLARE WILDE SEXSMITH

† Absent on war service.

\* Absent on leave, 1917-1918.

‡ Absent on leave, first quarter, 1917-1918.

§ Absent on leave, third quarter, 1917-1918.

¶ Died, February 20, 1918.

‡ Resigned, March 1, 1918.

RUTLEDGE WILTBANK  
 ROBERT FULZON MCCLELLAND  
 EVERETT GEORGE SNELL  
 EVELYN BLODGETT

FRANK DEMETRIUS HAYDEN  
 JAMES BAKER HAMILTON  
 LULU ALICE HALL

ASSOCIATES

MARGARET PROSSER, A. B., Associate in English.  
 ZALIA JENCKS, M. S., Associate in Chemistry.  
 GRACE EDGINGTON, A. B., Associate and Editorial Secretary in the Department of Journalism.  
 LILLIAN BLOOM, Associate in Physical Education for Women.  
 WILLIAM MASEKE, M. S., Associate in Bacteriology.  
 CLAUDE HUNT, A. B., Director of Athletics.  
 CHARLES WILCOX VANDER VEER, Track Coach.  
 WINNIFRED SUNDBERLIN HAGGETT, A. M., Associate in English.  
 IRENE HUNT DAVIS, B. S., Associate in Chemistry.  
 ALMIRA JANE BONEHAM, A. M., Associate in Spanish.  
 JESSIE CLARK, A. B., Associate in French.

LECTURERS

HARVEY L. GLENN, B. S., Lecturer on Bullion Assaying.  
 FREDERICK POWELL, A. B., Lecturer on Gold Dredging.  
 CORNELIUS OSSEWARD, PH. C., Lecturer on Commercial Pharmacy.  
 CONRAD ZIMMERMAN, A. B., Lecturer on Timber Physics.  
 ELDIS TROKELL, A. B., Lecturer on Journalism.  
 LILLIAN C. IRWIN, M. D., Lecturer on Hygiene for Women.  
 PHILIP V. VON PHUL, M. D., Lecturer on Practical Hygiene.  
 GUY M. KERR, Lecturer on Copper Smelting.  
 ARNOLD C. REYNOLDS, Lecturer on Civil Engineering.

ASSISTANTS

FORREST JACKSON GOODRICH, B. S., Assistant in Pharmacy and Assistant State Chemist.  
 MARTHA REEKIE, A. B., Assistant in the Museum.  
 MADGE WILKINSON, Clinical Assistant.  
 ANNE VOELKER, Assistant in Music.

TEACHING FELLOWS

ANNA BRAKEL, A. B., Teaching Fellow in Greek and Psychology.  
 ALINE BROWDER, A. B., Teaching Fellow in Chemistry.  
 GORDON CAVE, A. B., Teaching Fellow in Chemistry.  
 ELEANOR HOFFOCK, Teaching Fellow in French.  
 FLOYD HUFF, A. B., Teaching Fellow in Chemistry.  
 VERA KELSEY, A. B., Teaching Fellow in English.  
 HAMILTON MARTIN, M. S., Teaching Fellow in Botany.  
 CLINTON UTTERBACK, B. S., Teaching Fellow in Physics.

GRADUATE ASSISTANTS

DOROTHY COFFIN, A. B., Graduate Assistant in Sociology.  
 LOUISE INGERSOLL, A. B., Graduate Assistant in History.

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<sup>1</sup> Absent on war service.

## ALPHABETICAL LIST OF THE UNIVERSITY FACULTY

- HENRY SUZZALLO**, President of the University.  
A. B., Stanford, 1899; A. M., Columbia, 1902; Ph. D., 1905; LL. D., California, 1918.
- ALBERT PORTER ADAMS**, Bandmaster.
- <sup>1</sup>**CLEMENT AKERMAN**, Instructor in Economics.  
A. B., Georgia, 1898; A. M., Harvard, 1914.
- <sup>1</sup>**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.
- <sup>1</sup>**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.
- FRED CARLETON AYER**, Associate Professor of Education.  
B. S., Upper Iowa University, 1902; M. S., Georgetown University, 1905; Ph. D., Chicago, 1915.
- LESLIE JAMES AYER**, Professor of Law.  
B. S., Upper Iowa University, 1899; J. D., Chicago, 1906.
- SAMUEL THOMAS BEATTIE**, Instructor in Woodwork.
- MICHAEL TEMPLE BELL**, Assistant Professor of Mathematics.  
A. B., Stanford, 1904; A. M., University of Washington, 1908; Ph. D., Columbia, 1912.
- ALLEN ROGERS BENHAM**, Professor of English.  
A. B., Minnesota, 1900; A. M., 1901; Ph. D., Yale, 1905.
- HENRY KREITZER BENSON**, Professor of Industrial Chemistry; Director of the Bureau of Industrial Research, and Acting Head of the Department of Chemistry.  
A. B., Franklin and Marshall, 1899; A. M., 1902; Ph. D., Columbia, 1907.
- ABRAHAM BEGLUND**, Associate Professor of Economics.  
A. B., Chicago, 1904; Ph. D., Columbia, 1907.
- CLARK PRESCOTT BISSETT**, Professor of Law.  
A. B., Hobart College, 1896.
- EVELYN MAY BLODGETT**, Instructor in Library Economy.  
A. B., Vassar, 1909; Graduate, Pratt Institute Library School, 1911.
- LILIAN BLOOM**, Associate in Physical Education for Women.  
Graduate, Medical Gymnastic Institute, Stockholm.
- OTTILIE GERTRUDE BOETZKES**, Assistant Professor of German and French.  
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.
- ALMIRA BONHAM**, Associate in Spanish.  
B. L., California, 1901.
- SAMUEL LATIMER BOOTHROYD**, Associate Professor of Astronomy.  
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.
- <sup>1</sup>**HORACE G. BYERS**, Professor of Chemistry.  
A. B., and B. S., Westminster, 1895; A. M., 1898; Ph. D., Johns Hopkins, 1899.
- ALLEN FULLER CARPENTER**, Assistant Professor of Mathematics.  
A. B., Hastings, 1901; A. M., Nebraska, 1909; Ph. D., Chicago, 1915.
- FRED WAYNE CATLETT**, Assistant Professor of Law.  
A. B., Harvard, 1904; A. M., Harvard, 1905; LL. B., Harvard, 1907.
- <sup>2</sup>**VICTOR LOVITT OAKES CHITTICK**, Assistant Professor of English.  
A. B., Acadia, 1905; A. M., 1906; A. M., Harvard, 1908.

<sup>1</sup> Absent on war service.<sup>2</sup> Absent on leave, 1917-1918.

- ALEXANDER FREDERICK BRUCE CLARK, Assistant Professor of Romanic Language.  
A. B., Toronto, 1908; A. M., Harvard, 1911; Ph. D., 1916.
- 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.
- CHLOE SHERMAN CLARKE, Instructor in Institutional Management.  
Ph. B., Alfred University, 1911; B. S., Columbia, 1915.
- ETHEL HUNLEY COLDWELL, Dean of Women.  
B. L., Mills College, 1894; A. M., Stanford, 1899.
- JOHN THOMAS CONDON, Professor of Law, Dean of the School of Law, and Dean of Faculties.  
LL. B., Michigan, 1891; LL. M., Northwestern, 1892.
- CLARENCE RAYMOND COBBY, Assistant Professor of Mining and Metallurgy.  
E. M., Montana State School of Mines, 1905; A. M., Columbia, 1915.
- EDWARD GODFREY COX, Assistant Professor of English.  
A. B., Wabash, 1899; A. M., Cornell, 1901; Ph. D., 1906.
- HAROLD EUGENE CULVER, Assistant Professor of Geology.  
Ph. B., Wisconsin, 1910; Ph. M., 1911.
- HELEN BALOH CULVER, Instructor in Design.  
Graduate, Pratt Institute, 1905; Graduate, Teachers' College, Columbia, 1909.
- LESLIE FORREST CURTIS, Assistant Professor of Electrical Engineering.  
B. S., Tufts, 1910; M. S. (E. E.), Washington, 1916.
- VANDERVEER CUSTIS, Associate Professor of Economics.  
A. B., Harvard, 1901; A. M., 1902; Ph. D., 1905.
- EVERETT FRANCIS DAHL, Assistant Professor of Business Administration, and Assistant Director of the Extension Division.  
A. B., Wisconsin, 1913.
- JOSEPH DANIELS, Associate Professor of Mining Engineering and Metallurgy.  
S. B., Massachusetts Institute of Technology, 1905; M. S., Lehigh, 1908.
- <sup>1</sup>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.
- IRENE HUNT DAVIS, Associate in Chemistry.  
A. B., Washington, 1903.
- WILLIAM MAURICE DEHN, Associate Professor of Chemistry.  
A. B., Hope, 1893; A. M., 1896; Ph. D., Illinois, 1903.
- GRACE GOLDENA DENNY, Assistant Professor of Home Economics.  
A. B., Nebraska, 1907.
- HARVEY BRUCE DENSMORE, Assistant Professor and Acting Head of the Department of Greek.  
A. B., Oxford, 1907.
- FRANCIS DIOKEY, Assistant Professor of Music.  
Graduate, Iowa State Teachers' College, 1901; B. S., Columbia, 1912; A. M., 1913.
- CURT JOHN DUCASSE, Assistant Professor of Philosophy.  
A. B., University of Washington, 1908; A. M., 1909; Ph. D., Harvard, 1912.
- WILLIAM ELMHURST DUCKBRING, Assistant Professor of Civil Engineering.  
A. B., University of Washington, 1903; B. S. (C. E.), 1909; C. E., 1916.
- <sup>2</sup>COLIN VICTOR DYMENT, Professor of Journalism, and Director of the School of Journalism.  
B. A., Toronto, 1900.
- EVERETT OWEN EASTWOOD, Professor of Mechanical Engineering.  
C. E., Virginia, 1896; A. B., 1897; A. M., 1899; S. B., Massachusetts Institute of Technology, 1902.
- ERNST OTTO ECKELMAN, Assistant Professor of German, and Chairman of German Faculty.  
A. B., Northwestern (Watertown, Wis.), 1897; B. L., Wisconsin, 1898; Ph. D., Heidelberg (Germany), 1906.

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<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, third quarter, 1917-1918.

- ANNETTE EDENS, Instructor in Drawing.  
New York School of Fine and Applied Arts, Columbia.
- GRACE HARTLEY EDGINGTON, Associate and Editorial Secretary in the Department of Journalism.  
A. B., Oregon, 1916.
- RUDOLPH HERBERT ERNST, Instructor in English.  
A. B., Northwestern (Watertown, Wis.), 1904; A. M., Harvard, 1911.
- <sup>1</sup>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.
- GEORGE EARL FREELAND, Assistant Professor of Education.  
A. B., Kansas Normal, 1909; A. M., Clark, 1913.
- PIERRE JOSEPH FREIN, Professor of French.  
A. B., Williams, 1892; Ph. D., Johns Hopkins, 1899.
- THEODORE CHRISTIAN FRYE, Professor of Botany.  
B. S., Illinois, 1894; Ph. D., Chicago, 1902.
- <sup>2</sup>ROBERT MAX GARRETT, Assistant Professor of English.  
A. B., Idaho, 1902; A. M., Washington, 1903; Ph. D., Munich, 1909.
- 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; M. S., Washington, 1916.
- ALLETTA GILLETTE, Extension Instructor in English.  
A. B., Smith, 1907; A. M., Washington, 1911.
- IRVING MACKAY GLEN, Professor of Music, and Dean of the College of Fine Arts.  
A. B., Oregon, 1894; A. M., 1897.
- EMILIO GOGGIO, Assistant Professor of French and Italian.  
A. B., Harvard, 1909; A. M., Toronto, 1910; Ph. D., Harvard, 1917.
- IVAN WILBUR GOODNER, Professor of Law.  
LL. B., Nebraska, 1897.
- WILLIAM PIERRE GORSUCH, Professor of Public Speaking and Debate.  
A. B., Knox, 1898.
- FRANCIS PATRICK GOSS, Assistant Professor of Journalism.
- CARL FREILINGHUYSEN 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.
- KATE LEILA GREGG, Instructor in English.  
A. B., Washington, 1908; Ph. D., 1916.
- BROD LEONARD GRONDAL, Assistant Professor of Forestry.  
A. B., Bethany (Kansas), 1910; M. S. F., Washington, 1913.
- CHARLES ALEXANDRE GUERARD, Instructor in French in the Extension Division.  
B. L., University of France, 1876.
- EDWIN RAY GUTERIEB, Instructor in Philosophy.  
A. B., Nebraska, 1907; A. M., 1910; Ph. D., Pennsylvania, 1912.
- WINNIFRED SUNDEBLIN HAGGETT, Associate in English.  
A. B., Olivet, 1897; A. M., Michigan, 1898.
- <sup>1</sup>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.
- LULU ALICE HALL, Instructor in Home Economics.  
B. S., Washington, 1916.
- JAMES BAKER HAMILTON, Instructor in Civil Engineering.  
University of Washington.

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<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on part time war service.

- HELEN HARRINGTON, Instructor in Physical Education for Women.  
Wellesley College; University of California.
- CHARLES WILLIAM HARRIS, Associate Professor of and Acting Head of the Department of Civil Engineering.  
B. S. (C. E.), Washington, 1903; C. E., Cornell, 1905.
- JOSEPH BARLOW HARRISON, Instructor in English.  
A. B., University of Washington, 1910; A. B., Oxford, 1913.
- FRANK DEMETRIUS HAYDEN, Instructor in Civil Engineering.  
B. S., Massachusetts Institute of Technology, 1902.
- FRED HARVEY HEATH, Assistant Professor of Chemistry.  
B. S., New Hampshire, 1905; Ph. D., Yale, 1909.
- <sup>1</sup>CHARLES LOUIS HELMINGE, Assistant Professor of French.  
B. Ph., Wallace College (Ohio), 1911; A. M., University of Washington, 1915.
- <sup>2</sup>WILLIAM ELMER HENRY, Librarian and Director of the Library School.  
A. B., Indiana, 1891; A. M., 1892.
- MARGARET HESSLER, Instructor in Home Economics.  
A. B., James Milliken University, 1914; A. M., Columbia, 1917.
- FRANCIS 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.
- CLAUDE HUNT, Director of Athletics.  
A. B., De Pauw, 1911.
- LILIAN IRWIN, Lecturer on Physical Education for Women.  
M. D., Cooper Medical College, 1898.
- GEORGE HENRY JENSEN, Assistant Professor of Vocational Education and Supervisor of Teacher Training in the Trades and Industries.  
B. S., Valparaiso University, 1906.
- 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., 1908.
- <sup>3</sup>LEO JONES, on an unassigned list.  
A. B., University of Washington, 1912; A. M., 1916.
- NANNIE BELLE JUDY, Assistant Professor of Home Economics.  
Certificate, Teachers' College, 1910.
- ZALIA JENOKS, Associate in Chemistry.  
B. S., Chicago, 1913; M. S., Washington, 1916.
- SANDY MORROW KANE, Instructor in Metalwork.
- FRED WASHINGTON KENNEDY, Assistant Professor and Director of the Journalism Laboratories.
- TREVOR KINGALD, Professor of Zoology.  
B. S., University of Washington, 1899; A. M., 1901.
- BURT PERBONS KIRKLAND, Associate Professor of Forestry.  
A. B., Cornell, 1905.
- FREDRICH KURT KIRSTEN, Assistant Professor of Electrical Engineering.  
B. S., University of Washington, 1909; E. E., 1914.
- LEONARD VINCENT KOOS, Associate Professor of Education.  
A. B., Oberlin, 1907; A. M., Chicago, 1915; Ph. D., 1916.
- <sup>4</sup>CHARLES GUSTAVE PAUL KUSCHKE, Instructor in Mathematics.  
Graduate in Mechanical Engineering, Mittweida (Saxony) Technikum; A. M., Columbia, 1908; Ph. D., California, 1912.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

<sup>3</sup> Absent on war service, second quarter, 1918.

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

<sup>1</sup>HORACE HARDY LESTER, Instructor in Physics.  
A. B., Minnesota, 1906; A. M., University of Washington, 1912; Ph. D., Princeton, 1915.

<sup>1</sup>LEWIS LILLY, Assistant Professor of Accounting and Finance.  
A. B., Wisconsin, 1914.

ARTHUR WILSON LINTON, Associate Professor of Pharmacy.  
Ph. G., Highland Park, 1902; B. S., Michigan, 1909; M. S., University of Washington, 1915.

<sup>1</sup>EDGAR ALLEN LOEW, Associate Professor of Electrical Engineering.  
B. S. (E. E.), Wisconsin, 1906.

MILDRED WEST LORING, Instructor in Psychology.  
A. B., University of Washington, 1912; A. M., 1913; Ph. D., Johns Hopkins, 1916.

<sup>1</sup>RALPH HASWELL LUTZ, Assistant Professor of History.  
A. B., Stanford, 1906; LL. B., University of Washington, 1907; A. M., Ph. D., Heidelberg (Germany), 1910.

ROBERT FULTON McCLELLAND, Instructor in Architecture.  
Massachusetts Institute of Technology.

FRANK EDWARD McKONE, Assistant Professor of Mechanical Engineering.  
B. S., New Hampshire State College, 1909; M. S. (Aeronautical Engineering), Massachusetts Institute of Technology, 1917.

EDWARD McMAHON, Associate Professor of American History.  
Ph. B., University of Washington, 1898; A. M., Wisconsin, 1907.

<sup>1</sup>THERESA SCHMID McMAHON, Assistant Professor of Economics.  
A. B., University of Washington, 1899; A. M., 1901; Ph. D., Wisconsin, 1909.

HORACE JAMES MACINTIRE, Assistant Professor of Mechanical Engineering.  
S. B., Massachusetts Institute of Technology, 1905; M. M. E., Harvard, 1911.

CARL EDWARD MAGNUSSON, Professor of Electrical Engineering and Acting Dean of the College of Engineering.  
B. E. E., Minnesota, 1896; M. S., 1897; E. E., 1905; Ph. D., Wisconsin, 1900.

WILLIAM MASKE, Associate in Bacteriology.  
B. S., University of Washington, 1915; M. S., 1917.

<sup>1</sup>THOMAS AUGUSTUS MASON, Instructor in Social Economics.  
A. B., Dartmouth, 1901; A. M., Harvard, 1908.

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 B. MERRICK, Director of Physical Education for Women.  
Ph. B., Wisconsin, 1904; B. S., Columbia, 1907.

<sup>1</sup>JOHN WILLIAM MILLES, Assistant Professor of Civil Engineering.  
B. S. (C. E.), Nebraska, 1905.

STEPHEN IVAN MILLER, Professor of Transportation, Head of the Department of Economics, and Director of the College of Business Administration.  
LL. B., Michigan, 1896; A. B., Stanford, 1898.

LOREN DOUGLAS MILLIMAN, Associate Professor of English.  
A. B., Michigan, 1890.

<sup>1</sup>CHARLES CHURCH MORE, Professor of Civil Engineering.  
C. E., Lafayette, 1898; M. C. E., Cornell, 1899; M. S., Lafayette, 1901.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

- <sup>1</sup>ROBERT EDOUARD MORITZ, Professor of Mathematics.  
B. S., Hastings, 1892; Ph. M., Chicago, 1896; Ph. D., Nebraska, 1901; Ph. N. D., Universitaet Strassburg, 1902.
- BRUCE MUDGEY, Assistant Professor of Insurance.  
A. B., Idaho, 1908; Ph. D., Pennsylvania, 1914.
- DAVID JOHN MYERS, Assistant Professor of Architecture.  
Massachusetts Institute of Technology.
- LEWIS IRVING NEIKIRK, Assistant Professor of Mathematics.  
B. S., Colorado, 1898; M. S., 1901; Ph. D., Pennsylvania, 1908.
- CAROLINE HAVEN OBEE, Professor of Spanish.
- JOSEPH GRATTAN O'BRYAN, Lecturer on Law.  
A. B., Jesuit College (Denver), 1898.
- WILLIAM FIELDING OGBURN, Professor of Sociology.  
B. S., Mercer, 1905; M. A., Columbia, 1909; Ph. D., 1912.
- FREDERICK ARTHUR OSBORN, Professor of Physics and Director of Physics Laboratories.  
Ph. B., Michigan, 1896; Ph. D., 1907.
- <sup>2</sup>HJALMAR LAURITS OSTERUD, Instructor in Zoology.  
A. B., University of Washington, 1909; A. M., 1910.
- <sup>3</sup>BENJAMIN A. OYARZUN, Sanfuentes Lecturer on Spanish Language and Literature.  
Bachiller en Humanidades y Filosofia, 1890; Bachiller en Leyes y Ciencias Politicas, 1904, de la Universidad de Chile (University of Chile); Graduate, Pedagogical Institute of Chile, 1895.
- FREDERICK MORGAN PADELFORD, Professor of English.  
A. B., Colby, 1896; A. M., 1899; Ph. D., Yale, 1899.
- <sup>4</sup>CARLETON HUBBELL PARKER, Professor of Economics and Dean of the College of Business Administration.  
B. S., California, 1904; Ph. D., Heidelberg, 1912.
- 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.
- MAX PATTEN PHILBRICK, Instructor in Spanish.  
A. B., Colby College, 1902.
- EARL MILLIBON PLATT, Instructor in Pharmacy.  
Ph. C., University of Washington, 1911; B. S., 1914; M. S., 1916.
- MARY IRENE PRAY, Instructor in Physical Education for Women.  
B. S., Teachers' College, Columbia, 1913.
- <sup>5</sup>ARTHUR RAGAN PRIEST, Professor of Debating and Dean of Men.  
A. B., De Pauw, 1891; A. M., 1894.
- MARGARET PROSSER, Associate in English.  
A. B., Vassar, 1913.
- 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.
- <sup>6</sup>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.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

<sup>3</sup> Absent on leave, second and third quarters, 1917-1918.

<sup>4</sup> Died, March 17, 1918.

<sup>5</sup> Died, February 20, 1918.

<sup>6</sup> Period of exchange ended, February 1, 1918.

- 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.
- HARRY STANLEY ROGERS, Instructor in Civil Engineering.  
B. S. (C. E.), Wyoming, 1914.
- WALTER EDWARD ROLOFF, Assistant Professor of German.  
A. B., Northwestern, 1904; A. M., 1905; Ph. D., Wisconsin, 1912.
- <sup>2</sup>ROBERT EVSTAFIEFF ROSE, Assistant Professor of Chemistry.  
Ph. D., Leipzig, 1908.
- MORITZ ROSEN, Assistant Professor of Music.  
Graduate, Warsaw Conservatory, Russia.
- FREDERIC ARTHUR RUSSELL, Assistant Professor of Journalism.  
A. B., Albion, 1908; A. M., 1909; Ph. D., Illinois, 1916.
- LUIS A. SANTANDEU, Assistant Professor of 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.  
B. A., 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.
- LIDA SCHIRMER, Instructor in Music.
- CLARE WILDE SEKSMITH, Instructor in Physical Education for Men.  
Northwestern University; University of Washington.
- <sup>3</sup>HAROLD OGDEN SEKSMITH, Instructor in Architecture.  
Armour Institute of Technology; Chicago Art Institute.
- THOMAS KAY SIDBY, Associate Professor of Latin and Greek.  
B. A., Toronto, 1891; Ph. D., Chicago, 1900.
- ELVINE SIMMON, Instructor in Russian.  
Graduate, St. Annen Schule; University of Geneva.
- MACY MILMORE SKINNER, Assistant Professor of Chinese and Assistant Dean of Men.  
A. B., Harvard, 1894; A. M., 1895; Ph. D., 1897.
- LLOYD LEROY SMALL, 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., 1908.
- ELI VICTOR SMITH, Assistant Professor of Zoology.  
Ph. B., Illinois Wesleyan, 1907; A. M., University of Washington, 1909; Ph. D., Northwestern, 1911.
- J. ALLEN SMITH, Professor of Political 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.
- EVERETT GEORGE SNELL, Instructor in Civil Engineering.  
B. S. (C. E.), Clarkson College of Technology, 1915.
- WALTER EDMUND SQUIRE, Assistant Professor of Music.  
Graduate in Music, Northwestern, 1908.
- EDWIN AUGUSTUS START, Director of University Extension Division.  
A. B., Tufts, 1884; A. M., Harvard, 1898.
- <sup>4</sup>GEBHARD STEGEMAN, Instructor in Chemistry.  
B. S., Hope College, 1913; Ph. D., Ohio State, 1917.

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<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

<sup>3</sup> Resigned March 1, 1913.

- <sup>4</sup>CHARLES MUNROE STRONG, Assistant Professor of Spanish.  
A. B., Missouri, 1897; A. M., 1900.
- HERMAN VANCE TARTAR, Acting Assistant Professor of Chemistry.  
B. S., Oregon Agricultural College, 1902.
- DAVID THOMSON, Professor of Latin and Dean of the College of Liberal Arts.  
B. A., Toronto, 1892.
- CONRAD TRESSMANN, Instructor in German.  
A. B., Minnesota, 1906; Ph. D., Pennsylvania, 1913.
- <sup>1</sup>HARLAN LEO TRUMBULL, Assistant Professor of Chemistry.  
A. B., University of Washington, 1907; A. M., 1908; Ph. D., Chicago, 1911.
- RICKFORD GUY TUGWELL, Assistant Professor of Marketing.  
A. B., Pennsylvania, 1915; A. M., 1916.
- GEORGE WALLACE UMPHREY, Associate Professor of Spanish.  
B. A., 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.
- CHARLES WILCOX VANDER VEER, Track Coach.  
Union College.
- 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.
- PHILIP V. VON PHUL, Lecturer on Practical Hygiene.  
A. B., St. Louis University, 1893; A. M., 1895; M. D., Missouri Medical College, Washington University, 1896.
- 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.
- <sup>2</sup>JOHN WEINZEL, 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.
- WALTER BELL WHITTLESLEY, Instructor in French.  
A. B., University of Washington, 1907; A. M., 1909.
- <sup>3</sup>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.
- RUTLEDGE WILTBANK, Instructor in Psychology.  
Ph. B., Bucknell, 1898; Ph. D., Chicago, 1917.
- HUGO WINKENWERDER, Professor of Forestry and Dean of the College of Forestry.  
B. S., Wisconsin, 1902; M. F., Yale, 1907.
- HAMILTON ACHILLE WOLF, Assistant Professor of Fine Arts.  
National Academy of Design; Art Students' League; Columbia University.
- CLIFFORD WOODY, Assistant Professor of Education.  
A. B., Indiana, 1908; A. M., 1913; Ph. D., Columbia, 1916.
- JOHN LOCKE WORCESTER, Assistant Professor of Zoology.  
M. D., Birmingham School of Medicine, University of Alabama, 1900.

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<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

<sup>4</sup> Absent on leave, first quarter, 1917-1918.

## 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, Coldwell and Skinner; Major Professors.

**ASSEMBLY:** Professors Densmore, Glen and Benson.

**ATHLETICS:** Professors Dymont, Ogburn, Hall, Moritz, Densmore and Dehn.

**CURRICULUM:** Professors Savery, Bolton, Johnson, Magnusson, Winkenwerder, Glen, Henry, Dymont, Osborn, Ogburn, Ayer, Daniels and Mr. Stone.

**GRADUATION:** Dean Thomson, Professors Magnusson, Lantz, Koos, Kirkland, Custis and Mr. Stone.

**HONORS** Professors Padelford, Byers, Savery, Carpenter, Curtis and Mrs. McMahon.

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

**JUNIOR COLLEGES:** Professors Padelford, Thomson, Frye, Bolton, McMahon and Mr. Stone.

**LIBRARY:** Professors Henry, Thomson, Frye, Padelford, Richardson, Patzer and Loew.

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

**PUBLICATIONS:** Professors Henry, Millman, Dymont, Umphrey, Saunders and Start. (Catalogue and Bulletins; the Registrar.)

**RELATIONS WITH SECONDARY SCHOOLS:** Deans Bolton and Thomson, Professors Padelford, Frye, Frein and Mr. Stone.

**RULES:** Professors Benham, Goodner, Strong, Bell and Mr. Stone.

**SCHEDULE:** Professors Wilson, Rigg, Johanson, Woody and Mr. Langdon.

**SPECIAL STUDENTS:** The Deans and the Registrar.

**STUDENT AFFAIRS:** Deans Thomson, Coldwell, Priest, Professors McMahon, Ayer and Curtis.

**STUDENT HEALTH AND WELFARE:** Deans Coldwell and Priest, Professors Hall, Stevenson Smith and Miss Merrick.

**SUMMER QUARTER:** Deans Bolton, Thomson, Landes, Condon, Professors Magnusson, Frein, Moritz, Comptroller Condon.

**WAR EMERGENCY:** Professor Osborn, Deans Coldwell, Condon, Johnson, Priest and Landes, Comptroller Condon, Professors Start, Dymont, Byers, Benson, Padelford, Raitt, Patten, Frye, Frein, Boothroyd, McMahon, Wilson, Linton, Harris, Carpenter, Curtis and Skinner.

**WAR RESEARCH:** Professors Benson, Winkenwerder, Frye, Magnusson and Moritz.

## 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 22 (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 4 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 1917-1919 is expected to yield \$1,262,280, based upon the tax levy of .475 of a mill for the first year and .74 of a mill for the second year of the biennium. This is augmented from sundry receipts from property income.

Besides this, the Legislature appropriated the tuition and endowment receipts for the biennium for a permanent building fund. This was expected to provide for the erection of one or two new buildings.

The Legislature also appropriated \$20,000 for the establishment and coöperative maintenance of the Pacific Northwest Experiment Station of the United States Bureau of Mines on the University campus; and \$7,500 for the expense of cruising the University timber lands throughout the state, looking to the exchange of these lands for a centralized demonstration forest.

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 8.82 acres, donated in 1861 by Arthur Denny and wife; and 1.67 acres donated by

Charles 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

### GROUND

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 buildings are now in use on the University campus: Administration Hall, Architecture Building, Armory for the cadet regiment, Astronomical Observatory, Bagley Hall, Book Store, Commerce Hall, Crew House for men, Crew House for women, Denny Hall, Dry Kiln, Engineering Hall, Engineer's residence, Executive residence, Faculty Club House, Forestry Hall, Forge and Foundry Building, Gazert Building, Gymnasium, Home Economics Hall, Lewis Hall and Clarke Hall, Library, Meany Hall, Men's Hall, Mines Hall, Museum, Power House, Practice Cottage, Science Hall, U. S. Bureau of Mines, U. S. Mine Rescue Training Station, Wood Preservation Plant.

### LIBRARY FACILITIES

The general library contains 82,401 volumes, and receives 502 current magazines. About 6,000 volumes a year are being added.

The Law School library contains more than 20,000 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 250,000 volumes, is open free to the University.

### THE MUSEUM

By an enactment of the Legislature of the State of Washington in 1899 the museum at the University of Washington was "constituted the State Museum and the depository for the preservation and exhibition of documents and objects possessing an historical value, of materials 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, consisting of a small ethnological collection, was formed in the late '70s by Dr. A. J. Anderson, president of the University, and later supplemented by a collection of fish, presented by Dr. David Starr Jordan. The real start toward a permanent museum, however, was made in 1904, when the extensive collections of the Young Naturalists' Society of Seattle were presented to the University. These collections have been augmented from time to time by accessions from the World's Fair at Chicago; the Lewis and Clark Exposition at Portland; the Alaska-Pacific-Yukon Exposition at Seattle; and by gifts, purchases, and

loans from private individuals. The museum is at present located in the Forestry Building, a building of Grecian design, constructed of 126 main columns of Douglas fir, from five to six feet in diameter, and from forty-two to fifty-four feet high, a remarkable exhibit in itself of the timber resources of the Northwest.

The ethnology of the Northwest coast from the Columbia River to the Arctic is represented by collections arranged in geographical sequence: (1) A valuable collection of stone implements and carvings gathered along the Columbia River above The Dalles, by the late Dr. R. E. Stewart of Portland, Ore.; (2) collections illustrative of the various Indian tribes of the Puget Sound region, and of the west coast of Washington, made by the pioneer collectors, Rev. Myron Eells and James G. Swan; (3) collections from the coast tribes of British Columbia and Vancouver Island, together with a very complete collection representing the life of the Tlingit and Tahltan Indians of Southeastern Alaska, made by Lieut. George T. Emmons; (4) collections illustrating the life of the Eskimauan tribes of Alaska and of the "Blond Eskimo" on Coronation Gulf, which were secured by Messrs. Hachmann and Koenig, H. T. Harding, E. M. Blackwell, James T. White, and James Sullivan.

The Philippine section contains a fine series of old Moro brasses, hats, carvings, implements of warfare, etc., collected by Mrs. J. M. T. Partello and Major J. S. Kulp. Also an extensive industrial exhibit showing the agricultural, fishing and manufacturing industries of the island. In the Bash Chinese collection are many valuable porcelains, carvings, embroideries, and scrolls, together with other examples of Chinese art.

The Art section of the museum contains the valuable collection of paintings, tapestries, and carvings loaned by Kennedy C. Friend; the collection given by Mrs. A. M. H. Ellis, consisting of antique laces, textiles, mosaics, etc. Besides these there are collections of engravings and etchings loaned by George W. Soliday, and collections of pottery, bronzes, medallions, etc. Special loan exhibits are also arranged for from time to time.

The natural history collections are numerous and are constantly increasing in size. An exhibit series of local birds is arranged in various alcoves, and is illustrated by several habitat groups of ptarmigan, grouse, crows, ducks, etc. More elaborate groups of mountain goats, Roosevelt elk, timber wolf, mountain lion, bears, deer and other animals have been installed or are in process of installation. The marine fauna is represented by a series of mounted fishes of the northwest coast, corals, crustaceans, sponges, and mounted shells of the Puget Sound region and of foreign localities. The mineral section contains representative collections made by John R. Baker, Harry P. Strickland, Mrs. E. W. P. Guye and others, and is arranged according to Dana. Ore collections of the state and of Alaska are arranged by mining districts. Botanical and Forestry exhibits consist of a mounted series of Western Washington flora; cases of grains and grasses on the straw of the state and of Alaska; a comprehensive display of the woods and timber products of the state, together with an extensive exhibit of Philippine woods. The study or reserve series contain an herbarium of over 8,000 specimens; also a collection of bird skins, eggs and nests, made by the late Prof. O. B. Johnson, Dr. Clinton T. Cook, L. M.

Turner, H. H. Hindshaw, and Jennie V. Getty, mostly collected in the vicinity of Seattle.

### 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 and in basement of Science Hall. They occupy about 5,000 feet of floor space divided as follows: Three large laboratories of about 1,000 square feet each; three small laboratories, one for physiology, two for research. The laboratories are fitted with the apparatus and conveniences usual for the work.

#### CHEMICAL LABORATORIES

The chemical laboratories are housed in a thoroughly modern fireproof building, designed after 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 hydraulic laboratory is being transferred to its new location on the shore of Lake Union, where facilities will be available for both medium and high head experiments. For medium head, a free water surface, one acre in extent, is provided at an elevation of 100 feet above the laboratory floor. For high heads, connection is made with an 8" pipe leading from an elevated tank 300 feet above the floor.

**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 rooms, (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.

#### FOREST LABORATORIES

**DENDROLOGY.** Individual lockers. Extensive collections of tree seeds, cones and bark specimens. An arboretum is under way and a large number of the less common tree species are to be found on the campus.

**LUMBERING.** Field work is given at logging camps and sawmills 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 wood saws, logging equipments such as wire ropes, axes, hooks, blocks, special appliances for donkey engines, sawmill belts, a model of high lead logging, and other tools or equipment used in logging and milling.

**MENSURATION.** Equipments 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 coöperation with the University. The 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.

**FOREST PRODUCTS LABORATORIES.** A movement is now on foot for the establishment of a completely equipped Forest Products Laboratory to cost approximately \$60,000. The laboratories for work in forest products now ready on the campus consist of four distinct units, as follows:

1. *General Laboratory.* This is equipped with microtome, water baths, drying ovens, microscopes, chemical and pulp balances, all apparatus necessary for technical examination of wood preservatives, standardized thermometers, cameras and other apparatus required for photomicrography, dark room, and all incidental apparatus required for the detailed study of wood tissues.

2. *Wood Preservation Laboratory.* This consists of both an open tank and a pressure plant. The former is of commercial size for treating ties. It is composed of two treating tanks and two storage tanks, one of steel for creosote, the other a wooden tank for salt solutions and other preservatives. The pressure plant consists of a 12-foot retort, air compressor and vacuum pumps and a duplex pressure pump, and is so constructed that it may be used for any of the different pressure processes.

3. *Wood Distillation Plant.* This plant consists of a retort of one-half cord capacity per charge, gas tank, and refining apparatus. The retort has been installed by the U. S. Forest Service for cooperative work with the University.

4. *The Dry Kiln.* This is a plant of about one carload capacity and is thoroughly equipped with all apparatus necessary for scientific experimentation in kiln drying.

**COMMERCIAL PLANTS.** 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 very near Seattle and are available for study. Four large creosoting plants and several smaller preservation plants are also available. As such of these industries are not in Seattle are conveniently situated on Puget Sound, transportation costs to them are very low.

**DEMONSTRATION FOREST AND EXPERIMENT STATION.** Arrangements are now nearly completed whereby the University will acquire title to a 60,000-acre tract of forest land to be used by the College of Forestry as a demonstration forest and forest experiment station. This tract, which consists of the Pilchuck-Sultan watersheds of the Snoqualmie Forest, is very conveniently reached from Seattle and offers almost ideal conditions for a school forest. It has a total stand of timber of over a billion and a

half feet, representing nearly all species of the Pacific Northwest, but more than three-fourths is composed of Douglas fir, cedar and hemlock, the most important commercial species. As there is an excellent representation of age classes, it will lend itself readily to scientific forest management. It is estimated that the tract will yield from \$20,000 to \$25,000 annually on a sustained yield basis.

#### 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 the 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 of stationary and automobile types; 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, cupalo, 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 building of pressed brick. The main portion of the structure, measuring

50 x 80 feet, contains the offices, library, classrooms, drafting room and museum, as well as laboratories, desks, stockroom and balance rooms for assaying and general metallurgy. The rear wing, 40 x 66 feet, with tower, is occupied by mining and milling machinery, electric furnaces, and stocks of ores, coals and clays. An addition contains a steel-locker room, shower-bath room and a metallographic laboratory.

The metallurgical equipment includes standard size furnaces fired by six methods — coal, coke, gasoline, gas, fuel-oil and electricity. Electric current to the amount of 200 kilowatts is available for extensive experiments in electric smelting. Other important pieces of equipment are a reverberatory furnace, pyrometers of several types, cyanide equipment, amalgamating devices, blowers, calorimeters, balances, sampling machines, and exhibits of metallurgical processes and products.

The mining equipment consists of an air compressor, receiver, three rock drills, aerial tram, loading and tamping models, hand tools, full equipment for practice in blasting, models, drawings, blueprints, photographs, lantern with 1200 slides, and collections of ores and minerals. The College of Mines' mill contains breakers, rolls, 3-stamp battery, feeders, screens, classifiers, jigs, four concentrating tables, flotation cells of six types, coal washing equipment, and accessory apparatus.

#### UNITED STATES BUREAU OF MINES EXPERIMENT STATION

The United States Bureau of Mines maintains a mining and metallurgical experiment station for the Pacific Northwest and the coast regions of Alaska at the College of Mines. The headquarters of the station, from which all operations in this territory are directed, are in the Bureau of Mines building, between Mines and Bagley halls. An analytical laboratory is in the same building, while the electric furnace and other equipment used by the Bureau in cooperation with the College are housed in the Mines building. At present the principal investigations being conducted by the station are in electro-metallurgy, and in the mining, treatment and uses of coal.

#### UNITED STATES MINES RESCUE TRAINING STATION

The Mines Rescue Training Station of the United States Bureau of Mines occupies a separate building near the Mines building. The "smoke-room," fitted with track and car, overcast airway and smudge floor, 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 is in use for testing safety lamps in mixtures of gas and air under varying conditions of velocity; this machine is a duplicate of the one at the Pittsburg laboratory of the United States Bureau of Mines. A White automobile truck of 45 H.P., with a capacity of six men and six sets of rescue apparatus, is kept in constant readiness for service in the nearby mining fields of the state.

#### 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 consists 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.

Laboratory for human anatomy: This laboratory has been arranged to secure a maximum of light and cleanliness. Besides laboratory tables, study tables have been installed. All necessary equipment in the way of skeletal, chart and model materials are available.

#### 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, 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-Petzal 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, panetarium, 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 the 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.

### ENGINEERING EXPERIMENT STATION

The Engineering Experiment Station was formally organized in December, 1917, in order to coordinate the engineering investigations in progress and to facilitate the development of industrial research in the University.

A large number of investigations in the industrial field have been in progress for many years in the University, either by the efforts of individual faculty members and students or through organized groups, such as the Timber Testing Laboratory, the Bureau of Testing, Radio Experiment Station, and especially the Bureau of Industrial Research. As an indication of the research already accomplished, reference is made to the important papers already published.

The Engineering Experiment Station includes all the bureaus and departmental groups previously active in engineering and industrial research, as well as the field occupied by individual investigators.

The scope of the work is twofold:

(a) To investigate and to publish information concerning engineering problems of a more or less general nature that would be helpful in municipal, rural and industrial affairs;

(b) To undertake extended research and to publish reports on engineering and scientific problems.

The purpose of the station is to aid in the industrial development of the state and nation by scientific research and by furnishing information for the solution of engineering problems. Every effort will be made to cooperate effectively with professional engineers and the industrial organ-

izations in the state. Investigations of primary interest to the individual or corporation proposing them, as well as those of general interest, will be undertaken through the establishment of fellowships.

The control of the Engineering Experiment Station is vested in an administrative staff consisting of the president of the University, the dean of the College of Engineering, as ex-officio director, and seven members of the faculty. For administrative purposes, the work of the station is organized into seven divisions:

**1. FOREST PRODUCTS**

This division covers the field of the College of Forestry, and includes wood distillation, wood preservation and coöperative work with the Seattle Station of the United States Timber Testing Laboratory.

**2. MINING AND METALLURGY**

This division represents the field of the College of Mines, and includes coöperative work of the Pacific Northwest Station of the United States Bureau of Mines.

**3. CHEMICAL ENGINEERING AND INDUSTRIAL CHEMISTRY**

This division is a continuation of the Bureau of Industrial Research and represents the application of chemistry to industrial problems.

**4. CIVIL ENGINEERING**

This division covers the field of the Department of Civil Engineering, with emphasis on hydraulic and sanitary engineering and the testing of road and structural materials.

**5. ELECTRICAL ENGINEERING**

This division includes the several branches of electrical engineering: electric railways, telephones, telegraphs, radio, illumination and electric power.

**6. MECHANICAL ENGINEERING**

This division includes mechanical engineering, marine engineering, aeronautics and aviation.

**7. PHYSICS STANDARDS AND TESTS**

This division is equipped with reliable physical standards, and the work is a continuation of what has been done for the past eleven years by the Bureau of Testing.

Inquiries in regard to the work of the Engineering Experiment Station should be addressed to the Director.

# Entrance Information

## LOCATION OF THE UNIVERSITY

The University campus, comprising 855 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, Business Administration, Law, Library, Journalism and Graduate. This work is carried on through the regular academic year, October to August. 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

All new first-year students will be registered on Friday and Saturday, September 27 and 28, 1918.

Only old students and new students entering with advanced standing will be registered on Monday and Tuesday, September 30 and October 1, 1918.

Registration of all students for the second quarter will take place on Thursday and Friday, January 2 and 3, 1919; for the third quarter, Monday and Tuesday, March 31 and April 1, 1919; and for the fourth quarter, Tuesday, June 17, 1919.

**LATE REGISTRATION:** In order to enforce promptness in the matter of taking up University work at the opening of the quarter 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.

No student will be allowed to register after the first week of the quarter 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 quarter of residence, no student may register in the University after the third week of a quarter without special permission from the Board of Deans.

**EXAMINATIONS FOR EXEMPTIONS IN ENGLISH:** Examinations in composition for all freshmen will be held in Denny Hall, on Thursday, Friday and Saturday preceding registration at 9 and 2 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 Registrar. Every applicant for admission at the beginning of the first quarter, 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. By doing this, the student avoids much inconvenience and delay at the time of registration.

### 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 page 10) will be admitted upon recommendation of his principal and the presentation of a satisfactory 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 Registrar'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 the first quarter should be received in the Registrar'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 quarter.

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

\* For list of accredited secondary schools see page 41.

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

Freshman standing in the University is granted to any recommended graduate of an accredited secondary school who presents fifteen units\* of credit, distributed as follows:

- 3 units of English.
- 2 units of mathematics (1 unit algebra, 1 unit plane geometry).
- 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 subject accepted by an approved high school for its diploma; not more than 4, however, to be in vocational subjects. For admission to the College of Business Administration only, a maximum of 8 units in commercial subjects will be accepted. Only 4 of these will be counted, if the student is transferred later to any other college of the University.

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.

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.

### SUBJECTS RECOMMENDED FOR ADMISSION TO THE SEVERAL COLLEGES

#### COLLEGES OF LIBERAL ARTS AND SCIENCES (GENERAL COURSES)

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

A student entering the College of Liberal Arts or the College of Science must take the following subjects in the University as part of his requirements for graduation, if he has not taken them in high school:

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\* 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.

## UNIVERSITY OF WASHINGTON

- 2 units (20 credits) of a modern foreign language.\*  
(For the College of Science, French or German is the required language.)
- 1 unit (10 credits) of United States history and civics.
- 1 unit (10 credits) of another history.
- 1 unit (10 credits) of either physics or chemistry.  
(Both physics and chemistry are required in the College of Science.)
- 1 unit (10 credits) of either botany or zoology.
- 1 unit (10 credits) of additional mathematics or science.

## CURRICULUM PREPARATORY TO MEDICINE (COLLEGE OF SCIENCE)

- 3 units of English.
- 1 unit of algebra.
- 1 unit of plane geometry.
- 1 unit of United States history and civics.
- 1 unit of medieval and modern history.
- 1 unit of physics.
- 2 units of either French or German.

## CURRICULUM FOR NURSES (COLLEGE OF SCIENCE)

- 3 units of English.
- 1 unit of algebra.
- 1 unit of plane geometry.
- 1 unit of United States history and civics.
- 1 unit of medieval and modern history.
- 2 units of either French or German.

## CURRICULA IN HOME ECONOMICS (COLLEGE OF SCIENCE)

For admission to any of these curricula, a student may satisfy the entrance requirements of either the College of Science or the College of Liberal Arts.

## COLLEGE OF 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 BUSINESS ADMINISTRATION

- 3 units of English.
- 1 unit of algebra.
- 1 unit of plane geometry.
- 2 units of history (American and modern history preferred).

## COLLEGES OF ENGINEERING AND MINES

- 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 FINE ARTS (MUSIC, ARCHITECTURE, DRAWING)

General recommended subjects are the same as for the College of Education.

Music students must also present the equivalent of four years' work in music.

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\* Beginning with 1921, two years of one modern foreign language will be required for admission to the College of Liberal Arts or the College of Science. If the requirement has not been met in high school, it must be made up in college without credit.

Architecture students should present one 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

- 3 units of English.
- 2 units of one foreign language.
- 1½ units of algebra.
- 1 unit of plane 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).

#### COLLEGE OF NAVAL, MILITARY AND AERONAUTICAL SCIENCE

- 3 units of English.
- 1½ units of algebra.
- 1 unit of plane geometry.
- ½ unit of solid geometry.
- 2 units of one modern foreign language.
- 2 units selected from history, civics or economics (at least one unit to form a year of consecutive work in history).
- 1 unit of physics.

#### SCHOOL OF LAW, LIBRARY SCHOOL AND SCHOOL OF JOURNALISM

(See "admission to advanced undergraduate standing," page 40)

### 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.

### ADMISSION OF SPECIAL STUDENTS

All courses offered by the University are organized for regular students, that is, students who have had the equivalent of a good high school education fully covering college entrance requirements. Under certain regulations, however, 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 those courses only 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, a special student must be at least twenty-one 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 during the previous year.

3. All available certified credits for previous school work must be submitted to the Registrar 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. When it seems necessary to assure the applicant's preparation for the particular courses desired, an examination will be required.

4. Registration as a special student is for one quarter 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.

5. By virtue of his classification, a special student is not eligible for any degree. He may ultimately become a candidate for a degree, however, by completing the admission requirements of the college in which he is registered.

6. Persons desiring to be admitted as special students will apply to the Registrar for the necessary application and credential blanks.

*In order that applicants for admission as special students may receive full consideration, it is desirable that their applications be filed with the Registrar several weeks, at least, before the date of registration.*

## 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 one quarter.

### ADMISSION TO THE SCHOOL OF LAW, LIBRARY AND SCHOOL OF JOURNALISM

Clear entrance to the College of Liberal Arts or the College of Science, and 102 hours (2 years) of advanced credit in prescribed freshman and sophomore courses, covering all prescriptions for the Junior Certificate, 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 normal schools of this state and of institutions of like standing elsewhere, who have completed two full years of normal school work after graduating from a four-year accredited high school, will be admitted to junior standing in the Colleges of Liberal Arts, Science, or

Education. For graduation with the degree of Bachelor of Arts, Bachelor of Science or Bachelor of Education, these students are required to earn a minimum of 90 credits in the University, including the satisfaction of such of the requirements for graduation from the respective colleges as have not been fairly covered by previous work.

### ADMISSION TO GRADUATE STANDING

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

### AUDITORS

With the consent of the instructors concerned, any mature person, not registered as a student in the University, may be enrolled at the Registrar's office as an auditor in not more than two courses, without payment of any fee. This provision does not apply to laboratory courses, or to any courses offered in the summer session.

No person may regularly attend any course in which he has not been registered, or enrolled as an auditor.

## LIST OF ACCREDITED SCHOOLS

### I. PUBLIC HIGH SCHOOLS

Aberdeen	Ellensburg	Montesano	Sequim
Almira	Elma	Mossy Rock	Shelton
Anacortes	Endicott	Mount Vernon	Snohomish
Arlington	Enumclaw	Newport	South Bend
Asotin	Ephrata	Nooksack	Spangle
Auburn	Everett	North Bend	Spokane—
Battle Ground	Fairfield	Oakesdale	Lewis and Clark
Bellingham	Fall City	Oakville	North Central
Whatcom	Farmington	Odessa	Sprague
Fairhaven	Ferndale	Okamogan	Stanwood
State Normal High	Foster	Olympia	Stevenson
School	Friday Harbor	Omak	St. John
Bickleton	Garfield	Oroville	Sultan (U. H.)
Black Diamond	Goldendale	Orting	Sumas
Blaine	Grandview	Outlook	Summer
Bothell	Granger	Palouse	Sunnyside
Bremerton (U. H.)	Granite Falls	Pasco	Tacoma—
Brewster	Harmony	Pe Ell	Stadium
Buckley	Harrington	Pomeroy	Lincoln Park
Burlington	Hartline	Port Angeles	Tekoa
Burton (U. H.)	Hillyard	Port Townsend	Tenino
Camas	Hoquiam	Prescott	Tolt
Cashmere	Ilwaco	Prosser	Tonasket
Castle Rock	Issaquah	Pullman	Toppenish
Centralia	Kalama	Fuyallup	Touchet
Chehalis	Kelso	Raymond	Twisp
Chelan	Kennewick	Reardan	Vancouver
Cheney	Kent	Redmond	Yashon
Chewelah	Kettle Falls	Benton	Yera
Clarkston	Kirkland	Republic	Wattsburg
Cle Eltun	Kittitas	Richland	Walla Walla
Colfax	La Conner	Ridge field	Wapato
Colville	La Crosse	Ritzville	Washougal
Conconully	Latah	Rochester	Washtucna
Coulee City	Laurel	Rockford	Waterville
Coupeville	Leavenworth	Rosalia	Wenatchee
Oreston	Lebam	Roslyn	White Salmon
Davenport	Lind	Roy	Wilbur
Dayton	Lynden	Seattle—	Wilson Creek
Deer Park	Mabton	Ballard	Winalow
Doty	Malden	Broadway	Winlock
Dryad	Marysville	Franklin	Woodland
Duvall	Mead	Lincoln	Yacolt
Eatonville	Medical Lake	Queen Anne	Yakima
Edison	Meridian (U. H.)	West Seattle	Zillah
Edmonds	Millwood	Sedro Woolley	Douglas, Alaska
Edwall	Monroe	Selah	Juneau, Alaska

## II. OTHER SECONDARY SCHOOLS

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

## 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, the College of Fine Arts and the College of Business Administration 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. The curriculum of the School of Law covers three years; that of the School of Journalism, two years; and the curricula of the Library School two years and three years, respectively; all 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 (B. S.); in the College of Pharmacy, pharmaceutical chemist (Ph. C.), and bachelor of science (B. S.); 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.), and bachelor of fine arts (B. F. A.); in the Library School, bachelor of arts (A. B.), bachelor of science (B. S.), and bachelor of library economy (B. L. E.); in the College of Business Administration, bachelor of business administration (B. B. A.); in the School of Journalism, bachelor of arts (A. B.). 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. or M. S. degree are offered in nearly all departments of the colleges of Liberal Arts and Science. In four departments, chemistry, English, botany and mathematics courses, are offered leading to the Ph. D. degree. Courses leading to the degree of M. S. are offered in the Colleges of En-

gineering, Mines, Forestry and 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.

#### DEGREES 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 quarter, the student arranges his schedule of studies with the advice and assistance of his class officer. A regular course consists of fifteen or 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, twelve 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. Furthermore, every male undergraduate student is required to take physical exercise or athletics during each week of his attendance at the University, unless excused by his dean and the physical director.

Neither the requirement of physical education 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 Registrar.

## PHYSICAL EXAMINATIONS

All students on entering the University for the first time are required to present themselves for physical examination at the call of the Department of Physical Education. Failure to be examined constitutes a delinquency on the records.

## REGULATIONS FOR WITHDRAWAL

1. During the first four weeks of any quarter, a student may withdraw from a given class with the written consent of his adviser and dean.

2. During the first half of any quarter, a student may withdraw from a given class with the written consent of his adviser and dean and his instructor.

3. During the second half of any quarter, a student may withdraw from a given class with the written consent of his adviser and dean and his instructor; provided, however, that if his work has not been satisfactory to the instructor, the instructor must give the student an "E" on the quarter's work. It is optional with an instructor whether a grade of "W" or "E" shall be given on a withdrawal occurring during the first half of any quarter.

4. If any withdrawal will reduce the student's hours below normal, such withdrawal can only be authorized by the written approval of the proper dean.

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

6. Any student who registers for a given course must ultimately complete that course, or, if that be impossible, must complete twice the number of hours in some other approved subject. (Students who may be properly withdrawn during the first four weeks of any quarter shall not be affected by this rule, but it shall not exempt any student from the necessity of completing his required courses.)

## SCHOLARSHIP STANDING

Any student who is reported at any time during a quarter as doing unsatisfactory work in two or more of his subjects, aggregating more than one-third of his registered hours, shall be placed on probation for the remainder of said quarter. If at the end of the quarter he fail in two or more subjects, aggregating more than one-third of his registered hours, he shall not be allowed to re-register except under conditions prescribed by his dean, who shall be his registering officer.

Appeal from the decision of the dean may be taken to the Board of Deans.

Any student who fails in two or more subjects, aggregating more than one-third of his quarter's work shall be placed on probation for the following quarter. If in said following quarter said student fail in more than one-half of his registered hours, he shall not be allowed to register except on recommendation of the Board of Deans.

Any student who fails in more than one-half of his registered hours, after the first quarter of residence, will not be allowed to re-register, except by permission from the Board of Deans.

#### EXAMINATIONS

The regular quarterly examinations are held during the last four days of each quarter.

In certain courses running through two or more quarters the examination on the work of the first quarter is merely qualifying, final credit not being given until the examination for the entire course has been passed.

#### 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 quarter.

2. Candidates for the bachelor's degrees in the colleges of Liberal Arts, Science, Education, Business Administration, Fine Arts, Forestry, and the Library School and the School of Journalism, must receive grades of A, B, or C in three-fourths of the credits required for their respective degrees. This rule became operative in June, 1918, and does not apply to grades given before the year 1910-11.

#### FRATERNITY PLEDGING

No fraternity or sorority shall pledge any person for membership whose registration in the University is not complete.

Registration is complete when the election blank has been signed by the student and all required registering officers, when all required fees have been paid, and when all blanks have been left in the Recorder's office or other place designated by him.

No student having less than Junior standing shall be initiated into a fraternity or sorority until he or she has earned eighteen credits or provisional credits in two quarters, or fifteen in one quarter, at this University. Credits or provisional credits for work taken to remove entrance conditions may not be counted.

Candidates for initiation into either fraternities or sororities shall secure from the Registrar's office a certificate of eligibility.

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

## EXPENSES

## TUITION AND MATRICULATION

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 fee of \$6.67 per quarter, for the fall, winter and spring quarters, to be paid by each student of the University.

(c) An additional tuition fee of \$8.33 per quarter 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 and the summer quarter. The fee for the summer course at the marine station is \$13.00. A student in any of these special courses of the University is not required to pay a matriculation fee.

## REFUNDING OF FEES

The statute which made provision for the tuition and matriculation fees placed the following limitations on the refunding of such fees to students who may wish to withdraw from the University:

1. The matriculation fee is not returnable in whole or in part.

2. Tuition fees are not returnable in whole or in part, except that one-half of such tuition may be returned in case the student is compelled to withdraw within sixty days of the date of his resignation by reason of sickness or other causes entirely beyond his control. Students withdrawing under discipline forfeit all rights to the return of any portion of the fees.

3. No part of the tuition may be refunded under any circumstances after sixty days from the date of the student's registration.

## EXEMPTIONS

The University authorities may in their discretion grant exemption from the payment of tuition for a given quarter to a limited number of students who after one quarter of residence at the University have shown themselves worthy from the standpoint of scholarship and financial need. This exemption applies only to the tuition fee and not to the matriculation or any laboratory fees.

## ASSOCIATED STUDENTS FEE

The Associated Students fee of five dollars is paid annually by each student at the time of registration. Payment of this fee is optional with graduate students, night law students, teachers attending classes meeting on Saturdays and at irregular hours, regularly enrolled extension students, any student registered for not more than six hours of work, and Seattle teachers who have served or are serving the University by training cadet teachers, provided their names have been reported to the Registrar by the department of education.

## 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 Comptroller'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 quarter the student receives a rebate order from the department concerned, which informs the Comptroller as to the amount consumed and a refund is paid accordingly. This rebate order must, however, be presented for payment on or before September 15 next following the date of the receipt. The books are closed after this date and no orders will be honored thereafter.

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

ANATOMY, 101, 102, 103, 109—\$2.00; 116—\$10.00.

ASTRONOMY, 1, 2, 21, 22, 23—\$1.00; 101—\$2.00.

BACTERIOLOGY, 106, 107—\$3.50; 1, 3, 5, 103, 104, 108, 109, 111, 112—\$5.00; 116, 209—to be arranged.

BOTANY, 8, 9, 10—\$1.00; 13, 14—\$1.50; 1, 2, 3, 11, 12, 26, 105, 106, 119, 140, 141, 142, 143, 144, 145, 233, 250, 251, 252, 253, 254, 261, 262, 263, 271, 279, 280—\$2.00; 200—to be arranged.

CHEMISTRY, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 21, 22, 23, 31, 32, 33, 35, 36, 38, 39, 43, 51, 101, 102, 103, 111, 112, 113, 121, 122, 123, 133, 135, 136, 141, 142, 143, 144, 146, 150, 201, 202, 203, 204, 211, 212, 224, 231, 232, 233—\$7.00.

CIVIL ENGINEERING, 1—\$1.00; 21, 23, 27, 30, 32, 38, 55, 56, 107, 108, 142, 167—\$3.00.

EDUCATION, 171, 172, 173—\$1.00.

ELECTRICAL ENGINEERING, 132, 141, 202—\$2.00; 102, 122—\$3.00; 104, 162, 164—\$4.00.

FINE ARTS I. (Music), 18 (A, B, C)—\$12.00 to \$27.00 the quarter for one lesson hour, according to instructor; practice rooms, 1 hour, \$3.00; 2 hours, \$5.00.

FINE ARTS III. (Drawing, Painting, Design), 9, 10, 11—\$1.00; 103, 104, 157—\$2.00; 56, 57, 58, 107, 108, 109—\$3.00.

FORESTRY, 1, 5, 53, 104, 107, 108—\$1.00; 101, 102, 105, 207—\$2.00; 51, 213, 214, 222—\$3.00.

GEOLOGY, 1, 2, 5, 11, 12, 31, 32, 112, 113—\$1.00; 20, 22, 121, 123, 124, 125, S. C. 2—\$2.00; 21—\$3.00.

GYMNASIUM—\$1.00 per year, locker and apparatus; paid by all taking one or more courses in Physical Education. Women's suits, style and cost to be arranged.

HOME ECONOMICS, 8, 109, 200—\$1.00; 143—\$1.50; 11, 12, 20, 25, 61, 62, 108—\$2.00; 1, 2, 106, 107, 130—\$3.00; 4, 103, 121, 135, 150—\$4.00; 133, 134—\$5.00; 5, 6—\$6.00.

**JOURNALISM**, 101, 102, 103, 104, 105, 106, 108, 109, 151, 152, 153, 154, 155, 156, 157, 158, 159, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172—\$2.00. (Maximum fees for any one student first three quarters—\$4.00.)

**LIBRARY ECONOMY**, Undergraduates—\$1.00; Graduates—\$2.00; collected first two quarters.

**LOCKER**—\$0.50 per year at Mines and Engineering buildings.

**MECHANICAL ENGINEERING**, 1, 2, 3, 4, 9, 53, 54, 55, 105, 106, 107, 140, 151, 152, 153—\$2.00.

**MINES, MINING**, 151—\$3.00; 101, 152, 176—\$5.00; 154, 155—\$5.00 or \$10.00; Metallurgy, 106, 163—\$3.00; 103, 164—\$5.00; 102—\$10.00; 158, 160—\$12.00; 101—\$20.00.

**PHARMACY**, 15—\$1.00; 7, 10—\$3.50; 1, 2, 5, 6, 11, 105, 106, 107—\$7.00.

**PHYSICS**, 1, 2, 3, 48, 49, 50, 51, 54, 89, 90, 92, 93, 97, 98, 99, 101, 104, 109, 114—\$2.50.

**PSYCHOLOGY**, 101, 106, 109—\$1.00; 1—\$2.00.

**ZOOLOGY**, 1, 2, 3, 4, 5, 7, 8, 9, 11, 12, 13, 101, 102, 103, 104, 106—\$2.00; 109, 110, 111—\$4.00.

**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 for registration after the regular registration days. The same penalty is imposed for changes in election or withdrawals from individual courses, made after the regular registration days.

#### GRADUATION FEE

The fee charged to graduates is \$5.00 for each one receiving a baccalaureate or higher degree, or a diploma in pharmacy, and \$3.00 for each one receiving a teacher's diploma. This teacher's 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, in part or wholly, 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, and affords three graduate fellowships of equal amount, which will be awarded by May 1st of each year by the graduate faculty.

Three University honor fellowships are awarded annually, under the same scholarship qualifications as those obtaining for the Loretta Denny fellowships.

## THE MARS FELLOWSHIP

A research fellowship in astronomy, given by the late Dr. Percival Lowell, of the Lowell Observatory, Flagstaff, Arizona, carrying a stipend of six hundred dollars, is awarded annually.

## UNIVERSITY TEACHING FELLOWSHIPS

The University each year provides a number of teaching fellowships in various 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.

## COLUMBIA UNIVERSITY FELLOWSHIP

Columbia University offers each year a fellowship of two hundred fifty dollars, open to students in mining, engineering, and chemistry.

## 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 is made annually to a young woman of promise on the basis of scholarship and financial need.

## CHEMISTRY SCHOLARSHIP

An anonymous donor offers a scholarship of one hundred dollars annually to the student doing the best work in chemistry.

## SENIOR SCHOLARS

In June preceding their senior year, juniors who have 132 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.

In memory of the Hon. Edwin A. Jaggard, late justice of the supreme court of Minnesota, Miss Anna Wright Jaggard offers an annual cash prize of fifty dollars for the best essay on a topic connected with courses in history of law or jurisprudence.

The University State Bank offers an annual cash prize of twenty-five dollars for the best essay on banking, submitted by a student in the College of Business Administration.

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 SCHOLARSHIP IN ITALIAN

Mr. N. Paoella, 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.

## MEN'S FRESHMAN LATIN PRIZE

Through the kindness of a friend of the University, a prize of fifty dollars in gold will be awarded to the man in the freshman class who passes the best examination in the Latin work of the year.

**SOPHOMORE LATIN PRIZE**

A cash prize of twenty-five dollars, from an anonymous donor, will be awarded to that member of the sophomore class who has done the best work in Latin during the year.

**FOR SCHOLARSHIP IN FRENCH**

Judge Thomas Burke offers two cash prizes, one of fifteen dollars and one of twenty-five dollars, for general excellence in French.

**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 application duly approved by the trustees of the fund.

Several minor loan funds have been established which help considerably in the efforts of the University authorities to assist students, both men and women, through financial emergencies. These are placed at a low rate of interest in small amounts for short periods. Young women interested in securing this assistance should consult the Dean of Women.

**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 1917-1918 are as follows: President, William T. Laube; first vice-president, James E. Gould; second vice-president, Dr. Warner Karschner; secretary, Helene Moore; treasurer, Caroline E. Horton.

**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 maintain an 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 British Columbia, holds an annual triangular debate. Each institution has two teams, representing the affirmative and negative of the question under discussion.

The men of the University also have dual debate leagues with Reed College and Whitman College.

The women of the University have similar dual leagues with the University of Oregon and Whitman College.

## 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), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.  
DAVID THOMSON, B. A. (Toronto), Professor of Latin; DEAN.  
EDMOND STEPHEN MEANY, M. L. (Wisconsin), Professor of History.  
J. ALLEN SMITH, PH. D. (Michigan), Professor of Political Science and Dean of the Graduate School.  
CAROLINE HAVEN OBER, Professor of Spanish.  
FREDERICK MORGAN PADELFORD, PH. D. (Yale), Professor of English.  
WILLIAM SAYERT, PH. D. (Harvard), Professor of Philosophy.  
PIERRE JOSEPH FREIN, PH. D. (Johns Hopkins), Professor of French.  
FREDERICK WILLIAM MEISNERST, PH. D. (Wisconsin), Professor of German.  
HERBERT HENRY GOWEN, D. D. (Whitman), F. R. G. S., F. R. S. A., Professor of Oriental Languages and Literature.  
OLIVER HUNTINGTON RICHARDSON, PH. D. (Heidelberg), Professor of European History.  
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 Scandinavian Languages.  
WILLIAM PIERCE GORSUCH, A. B. (Knox), Professor 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), Professor of English.  
CARLTON HUBBELL PARKER, PH. D. (Heidelberg), Professor of Economics and Dean of the College of Business Administration.  
STEPHEN IVAN MILLER, JR., A. B. (Stanford), LL. B. (Michigan), Professor of Transportation and Director of the College of Business Administration.  
WILLIAM FIELDING OGBURN, PH. D. (Columbia), Professor of Social Science.  
LOREN DOUGLAS MILLMAN, A. B. (Michigan), Associate Professor of English.  
THOMAS K. SIDEX, PH. D. (Chicago), Associate Professor of Latin and Greek.  
EDWARD McMAHON, A. M. (Wisconsin), Associate Professor of American History.  
JACOB NINEBT 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.  
LEONARD VINCENT KOOS, PH. D. (Chicago), Associate Professor of Education.  
VANDERVEER CUSTIS, PH. D. (Harvard), Associate Professor of Economics.  
ABRAHAM BERGLUND, PH. D. (Columbia), Associate Professor of Economics.  
FRED C. AYER, PH. D. (Chicago), Associate Professor of Education.  
EDWARD GEDFREY COX, PH. D. (Cornell), Associate Professor of English.  
OTTILIE GERTRUDE BOETZKE, 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.  
CHARLES MUNRO STRONG, A. M. (Missouri), Assistant Professor of Spanish.  
WILLIAM THEODORE DABBY, A. M. (Columbia), Assistant Professor of English.  
HARVEY BRUCE DENSMORE, A. B. (Oxford), Assistant Professor of Greek.  
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 Economics.  
CHARLES LOUIS HELMLINGE, A. M. (Washington), Assistant Professor of French.  
ERNEST OTTO BOKELMAN, PH. D. (Heidelberg), Assistant Professor of German.  
SERENO BURTON CLARE, PH. D. (Harvard), Assistant Professor of Greek and Latin.  
CLIFFORD WOODY, PH. D. (Columbia), Assistant Professor of Education.  
MAYO MILLMORE SKINNER, PH. D. (Harvard), Assistant Professor of Chinese and Assistant Dean of Men.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

<sup>3</sup> Absent on leave, first quarter, 1917-1918.

<sup>4</sup> Absent on leave, third quarter, 1917-1918.

<sup>5</sup> Absent on part time war service.

<sup>6</sup> Died, March 17, 1918.

- 'RALPH HASWELL LUTZ, PH. D. (Heidelberg), Assistant Professor of History.  
 CURT JOHN DUCASSE, PH. D. (Harvard), Assistant Professor of Philosophy.  
 LOUIS A. SANTANDER, PH. B., LL. B. (Santiago), Assistant Professor of Spanish.  
 'LEWIS LILLY, A. B. (Wisconsin), Assistant Professor of Accounting and Finance.  
 BRUCE D. MUDGETT, PH. D. (Pennsylvania), Assistant Professor of Insurance.  
 REKFOED G. TUGWELL, A. M. (Pennsylvania), Assistant Professor of Marketing.  
 VICTOR L. O. CHITTICK, A. M. (Harvard), Assistant Professor of English.  
 WALTER E. ROLOFF, PH. D. (Wisconsin), Assistant Professor of German.  
 EMILIO GOGGIO, PH. D. (Harvard), Assistant Professor of French and Italian.  
 GEORGE E. FREELAND, A. M. (Clark), Assistant Professor of Education.  
 ALEXANDER F. B. CLARK, PH. D. (Harvard), Assistant Professor of French.  
 WALTER BELL WHITTLESEY, A. M. (Washington), Instructor in French.  
 NEWELL WHEELER SAWYER, A. M. (Pennsylvania), Instructor in English.  
 RUDOLPH HERBERT ERNST, A. M. (Harvard), Instructor in English.  
 LEO JONES, A. M. (Washington), Instructor in Political Science.  
 JOSEPH BARLOW HARRISON, A. B. (Oxford), Instructor in English.  
 CONRAD TRESSMANN, PH. D. (Pennsylvania), Instructor in German.  
 'CLEMMENT AKERMAN, A. M. (Harvard), Instructor in Economics.  
 'VICTOR JOHN FARRAR, A. M. (Wisconsin), Research Assistant in History.  
 EDWIN RAY GUTHRIE, PH. D. (Pennsylvania), Instructor in Philosophy.  
 FRANK JOSEPH LAUBE, A. M. (Washington), Instructor in Economics.  
 CHARLES WENDELL DAVID, A. M. (Wisconsin), Instructor in History.  
 MAX PATTEN PHILBROK, A. B. (Colby), Instructor in Spanish.  
 KATH LEILA GREGG, PH. D. (Washington), Instructor in English.  
 'THOMAS AUGUSTUS MASON, A. M. (Harvard), Instructor in Social Economics.  
 ELYVINE SIMON, (Univ. of Geneva), Instructor in Russian Language and Literature.  
 MARGARET PROSSER, A. B. (Vassar), Associate in English.  
 WINNIFRED S. HAGGETT, M. A. (Michigan), Associate in English.  
 ALMIRA J. K. BONHAM, B. L. (California), Associate in Spanish.
- TREVOR KINCAID, A. M. (Washington), Professor of Zoology.  
 FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Professor of Physics and Director of the Physics Laboratories.  
 'DAVID CONNOLLY HALL, M. D. (Chicago), University Health Officer, and Director of Physical Education for Men.  
 IRVING MACKENZIE GLEN, A. M. (Oregon), Professor of Music and Dean of the College of Fine Arts.  
 EFFIE ISABELL RAITT, B. S. (Columbia), Professor and Director of the Department of Home Economics.  
 STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.  
 SAMUEL LATIMER BOOTHROYD, M. S. (Colorado Agricultural College), Associate Professor of Astronomy.  
 EDWIN JAMES SAUNDERS, A. M. (Harvard), Assistant Professor of Geology.  
 ALLEN FULLER CARPENTER, PH. D. (Chicago), Assistant Professor of Mathematics.  
 GEORGE BURTON RIGG, PH. D. (Chicago), Assistant Professor of Botany.  
 FRED HARVEY HEATH, PH. D. (Yale), Assistant Professor of Chemistry.  
 JESSIE BEE MERRICK, B. S. (Columbia), Director of Physical Education for Women.  
 'CLARE WILDE SEKSMITHE, (Washington, Instructor in Physical Education for Men.

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<sup>1</sup> Absent on war service.

**\*ADMISSION TO FRESHMEN 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:

- 8 units of English.
- 2 units of mathematics (one unit algebra, one unit plane geometry).
- 8 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.

**SUGGESTIONS AS TO GROUPING OF SUBJECTS IN PREPARATION FOR ADMISSION**

In addition to the three units of English and two units of mathematics required of all students for admission to the University, the student expecting to enter the College of Liberal Arts is advised to take as many as possible of the subjects specified on page 10, under paragraph 2 entitled "SUBJECTS REQUIRED EITHER IN HIGH SCHOOL OR COLLEGE." He should also note paragraph 4 on the same page entitled, "SUBJECTS CONDITIONALLY REQUIRED IN COLLEGE." A careful observance of these paragraphs will furnish a more complete preparation for college work and will give the student correspondingly greater freedom of election in college.

**REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS**

To secure the degree of bachelor of arts (A. B.) the student must complete not less than a total of 192 credits and must observe the restrictions in regard to major and group requirements, scholarship requirements, and the requirements of the Lower Division and the Upper Division.

\*More detailed information concerning admission is furnished in a separate section of the University Bulletin, known as Entrance Information. (See pages 7-11.)

†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.

## I. MAJOR AND GROUP REQUIREMENTS

(a) From 36 to 60 credits must be in a single department known as the major department, (except that with a major in English, 10 credits in English 1-2 may be counted in addition to 60 credits in other English courses.)

(b) The number of credits taken in the major and any other single department combined must not exceed a total of 96 (except that when English is combined with the major department for the purpose of this total, credits in English 1-2 may be disregarded.)

(c) Not less than 72 credits must be in the group in which the major department falls. For this purpose the departments are grouped as follows:

**GROUP 1. LANGUAGE AND LITERATURE:** Classical Languages and Literature, English, German, Oriental Literature, Public Speaking, Romanic Languages and Literature, Russian, Scandinavian.

**GROUP 2. PHILOSOPHICAL:** Economics, Education, History, Philosophy, Political Science, Sociology.

The group requirement of 72 credits does not apply to majors in Home Economics.

## II. SCHOLARSHIP REQUIREMENTS

Not less than three-fourths of the credits required for graduation must be earned with grades of A, B, or C.

## III. REQUIREMENTS OF THE LOWER DIVISION

The work of the Lower Division comprises the studies of the freshman and sophomore years of the undergraduate curriculum and leads to the Junior Certificate. This work consists primarily of the elementary or introductory courses of the various departments.\* Its aim is to supplement the work of the high school, to contribute to a broad general training in preparation for the advanced work of the Upper Division.

To receive the Junior Certificate the student must have earned not less than 90 college credits (together with required credits in Military Science or Physical Education), and must have completed, in high school and college together, the amount of work specified in the subjects mentioned below. In addition thereto, he must have satisfied the qualitative test prescribed in English composition. The object of these requirements is to secure for the student a knowledge of a wide range of subjects, to distribute his knowledge over the fundamental fields. To this end the high school and college are viewed as essentially a unit.

\* **NOTE.**—The following (or their equivalents) constitute the courses of the Lower Division:

1. Modern Foreign Language: The first two years.
2. Ancient Language: Intermediate Latin; the first two years of college work; courses in civilization and literature.
3. English: Composition; freshmen and sophomore literature.
4. Mathematics and the Natural Sciences: The elementary courses (1 and 2) or equivalents.
5. History: The introductory courses in each line, e. g., mediæval and modern (1 and 2), American (7 and 8), English (5 and 6), ancient (17 and 18).
6. Philosophy and psychology: Elementary or introductory course in each line, e. g., general psychology, introduction to philosophy, ethics, logic.
7. Political and social science: Introducing courses in economics, government, sociology.
8. Education: Introductory course, viz., Principles of Education.
9. Public speaking: 1 and 2.

The required subjects are grouped as follows:

1. SUBJECTS REQUIRED IN HIGH SCHOOL.

(a) English, 3 years (3 units).

In addition to the completion of this amount of work in English, the student must show by a test examination *proficiency in English Composition*, or he must take English Composition in the University, as provided under requirement (c) below.

(b) Elementary algebra, 1 year (1 unit).

(c) Plane geometry, 1 year (1 unit).

Subjects (a), (b), and (c) are those required of all students for admission to the University.

2. SUBJECTS REQUIRED EITHER IN HIGH SCHOOL OR IN COLLEGE.

(d) A modern foreign language, 2 years (2 units or 20 credits).

(e) U. S. history and civics, 2 quarters (1 unit or 10 credits). See note 1.

(f) History, 2 quarters (1 unit or 10 credits). See note 2.

(g) Physics or chemistry, 2 quarters, (1 unit or 10 credits).

(h) Botany or zoology, 2 quarters, (1 unit or 10 credits).

(i) Mathematics or science, 2 quarters (1 unit or 10 credits). See note 3.

3. SUBJECTS REQUIRED IN COLLEGE.

(j) Philosophy, psychology, 2 quarters, (10 credits).

(k) Economics, political science, sociology, 2 quarters (10 credits).

(l) Physical education or military science, 2 years (12 credits). See note 4.

4. SUBJECTS CONDITIONALLY REQUIRED IN COLLEGE.

(m) Ancient life and literature, 2 quarters, (10 credits). See note 5.

(n) Modern foreign language, 2 or more quarters, (10 or more credits). See note 6.

(o) English composition, 2 quarters, (10 credits). See note 7.

NOTE 1. Students who do not take United States history and civics in the high school must take History 7 and 8 in the University.

NOTE 2. One year of history is required in addition to requirement (e). It may be satisfied in *any year* (1 unit or 10 credits) of history.

NOTE 3. The requirement in mathematics or science is in addition to (b), (c), (g), and (h). It may be satisfied by any of the following combinations, viz., two quarters of a science, a quarter of each of two sciences, two quarters of mathematics, or a quarter of mathematics and a quarter of science.

NOTE 4. In addition to the 12 credits in military science or physical education required of students in the Lower Division, six quarters in physical education are required of male students in the junior and senior years.

NOTE 5. Two quarters' work in ancient life and literature is required of all students who have not taken, or do not plan to take, 3 or more years

of ancient language. For such students courses are offered in the University on the civilization of the ancients and on the literature in translation.

NOTE 6. Beginning with 1921, two years of one foreign language will be required for admission to the College of Liberal Arts or the College of Science. If the requirement has not been met in high school, it must be made up in college without credit.

NOTE 7. English composition is required for the Junior Certificate except in the case of those persons who show by examination proficiency in that subject. (See University calendar for dates of examination).

#### SCHEDULE LIMITATIONS OF THE LOWER DIVISION

As a rule students in the Lower Division must confine their elections to courses designed for such students, viz., courses numbered 1 to 99 in the catalogue. A student, however, who has had the proper prerequisite or who may be deemed in intellectual maturity sufficiently qualified, may, with the consent of the dean and the instructor concerned, register for an Upper Division course. (In a foreign language a student who has had the proper prerequisite may be enrolled in an Upper Division course merely with the consent of the class adviser.) Students who are granted this privilege should be careful not to allow it to interfere with the completion of all Lower Division requirements by the end of the sophomore year; otherwise, an extra quarter of residence in that division may be necessary in order to secure the Junior Certificate and graduation may be correspondingly postponed.

No student in the Lower Division shall be registered for more than 16 credit hours per quarter (exclusive of military science and physical education) or for less than 12 credit hours per quarter, except with the consent of the dean.

#### IV. REQUIREMENTS OF THE UPPER DIVISION

The Upper Division comprises the studies of the junior and senior years. It consists principally of the advanced work of the undergraduate curriculum, and is therefore differentiated, both in content and method, from that of the Lower Division.

To be enrolled in the Upper Division, the student must have completed all requirements for the Junior Certificate. The minimum amount of work to be done in the Upper Division will vary from 96 to 84 hours of credit (exclusive of the 4 credits in physical education required of junior and senior men), according to the number of credits offered for the Junior Certificate. *The student must earn not less than 84 hours of credit (exclusive of physical education) while enrolled in the Upper Division.* At least 60 of the credit hours taken in the Upper Division must be in Upper Division courses (Nos. 100 to 199.) Of these 60 hours a minimum of 18 must be taken in the major subject.

#### SCHEDULE LIMITATIONS OF THE UPPER DIVISION

No student in the Upper Division shall be registered for more than 16 or less than 12 credit hours per quarter, except with the consent of the dean.

A maximum of 19 hours per quarter may be granted to students who have made an exceptional record in scholarship in the Lower Division and who maintain that record in the Upper Division.

**SCHEME OF ELECTIVES**

For purposes of election, outside the major department, the College of Liberal Arts, the College of Science, the College of Education, the College of Business Administration and the School of Journalism 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 24 such credits altogether shall be counted toward this degree except that from the College of Fine Arts, 86 credits may be so counted.

**COLLEGE OF PHARMACY**

Materia medica	}	Total amount allowed, 12 credits.
Therapeutics		
Toxicology		

**COLLEGE OF ENGINEERING**

Mechanical drawing	}	Total amount allowed, 18 credits.
Descriptive geometry		
Surveying		
Direct currents		
Alternating currents		

**COLLEGE OF MINES**

General metallurgy

**COLLEGE OF FINE ARTS**

A total number of 36 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, Characteristics of Trees, Forest Economics, Silviculture. The maximum number of hours elective from these subjects is 18.

**SCHOOL OF LAW**

Agency	Equity
Constitutional law	Persons
Contracts	Property
General business law	

From the above subjects a total of 18 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.

**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 147 credits, including 12 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 156. Thirty-six credits in the first year law work may apply toward the A. B. degree, thus making 192 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 147 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 45 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 undergraduates of other colleges who enter this University with the rank of senior.

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

# College of Science

## THE FACULTY

- HENRY SUZZALLO, PH. D. (Columbia), LL. D. (California), President.  
JOHN THOMAS CONDON, LL. M. (Northwestern), Dean of Faculties.  
HENRY LANDES, A. M. (Harvard), Professor of Geology; Dean.  
THEODORE CHRISTIAN FRYE, PH. D. (Chicago), Professor of Botany.  
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 and Director of the Physics Laboratories.  
\*ROBERT ENDOUARD MORITZ, PH. D. (Nebraska), PH. N. D. (Strassburg), Professor of Mathematics.  
DAVID CONNOLLY HALL, SC. M., M. D. (Chicago), Director of Physical Education for Men.  
HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.  
\*JOHN WEINZEL, PH. D. (Wisconsin), Professor of Bacteriology.  
EFFIE ISABEL RAITT, B. S. (Columbia), Professor of Home Economics and Director of the Department of Home Economics.  
STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.  
WILLIAM T. PATTEN, Captain 18th Infantry, U. S. A., Retired, Professor of Military Science and Tactics.  
SAMUEL LATIMER BOOTHROYD, M. S. (Colorado Agricultural College), Associate Professor of Astronomy.  
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 Professor of Mathematics.  
\*ROBERT EYSTAFIEFF ROSE, PH. D. (Leipzig), Assistant Professor of Chemistry.  
ELI VICTOR SMITH, PH. D. (Northwestern), Assistant Professor of Zoology.  
HENRY LOUIS BRACKEL, 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 Home Economics.  
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.  
\*SAMUEL HERBERT ANDERSON, PH. D. (Illinois), Assistant Professor of Physics.  
NANNIE BELLE JUDY, (Columbia), Assistant Professor of Home Economics.  
HARLAN TRUMBULL, PH. D. (Chicago), Assistant Professor of Chemistry.  
JESSIE B. MERRICK, B. S. (Columbia), Director of Physical Education for Women.  
ERIC TEMPLES BELL, PH. D. (Columbia), Assistant Professor of Mathematics.  
FRED H. HEATH, PH. D. (Yale), Assistant Professor of Chemistry.  
JOHN L. WOROBSTER, M. D. (Med. School, University of Alabama), Assistant Professor of Zoology.  
\*ERALMAR LAURITS OSTERUD, A. M. (Washington), Instructor in Zoology.  
\*HENRY LEROY WILCOX, A. M. (Chicago), Instructor in Psychology.  
LLOYD LEROY SMALL, PH. D. (Columbia), Instructor in Mathematics.  
LUTHER EWING WEBB, PH. D. (Johns Hopkins), Instructor in Mathematics.  
NATHAN FASTEN, PH. D. (Wisconsin), Instructor in Zoology.  
CHARLES PAUL KUSCHKE, PH. D. (California), Instructor in Mathematics.  
\*JAMES A. GILBREATH, M. S. (Washington), Instructor in Physics.  
SETH CHAPIN LANGDON, PH. D. (Washington), Instructor in Chemistry.  
\*HORACE HARDY LESTER, PH. D. (Princeton), Instructor in Physics.  
MARY IRENE PRAY, B. S. (Columbia), Instructor in Physical Education.  
HELEN HARRINGTON, (Wellesley), Instructor in Physical Education.  
CHLOE SHERMAN CLARKE, B. S. (Teachers College, Columbia), Instructor in Home Economics.  
MARGARET HESSLER, A. M. (Columbia), Instructor in Home Economics.  
MILDRED WEST LORING, PH. D. (Johns Hopkins), Instructor in Psychology.  
\*GEBHARD STROEMAN, PH. D. (Chicago University), Instructor in Chemistry.  
CLARE WILDE SEKSMITH (Washington), Instructor in Physical Education.  
RUTLEDGE T. WILTBANK, PH. D. (Chicago), Instructor in Psychology.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

<sup>3</sup> Absent on leave second and third quarters, 1917-1918.

<sup>4</sup> Resigned, March 1, 1918.

## ASSOCIATES

ZALIA JENCKS, M. S. (Washington), Associate in Chemistry.

LILLIAN BLOOM, Associate in Physical Education.

WILLIAM MASKE, M. S. (Washington), Associate in Bacteriology.

## TEACHING FELLOWS

GORDON CAVE, A. B. (Bates), Teaching in Chemistry.

G. HAMILTON MARTIN, M. S. (Harvard), Teaching Fellow in Botany.

CLINTON UTTERBAUGH, B. S. (Purdue), Teaching Fellow in Physics.

ALINE BROWDER, A. B. (California), Teaching Fellow in Chemistry.

**\*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:

- 8 units of English.
- 2 units of mathematics (one unit algebra, one unit plane geometry).
- 8 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.

## CURRICULA IN THE COLLEGE OF SCIENCE

A student admitted to freshman standing in the College of Science must, at the time of his entrance, elect one of the following curricula, as described in detail below:

- I. ELECTIVE CURRICULA WITH A MAJOR IN SOME ONE DEPARTMENT.
- II. PRE-MEDICAL CURRICULA.
  - A. Four-year curriculum preparatory to medicine
  - B. Three-year curriculum for nurses.
- III. CURRICULUM FOR PROSPECTIVE SCIENCE TEACHERS
- IV. PRESCRIBED CURRICULA IN HOME ECONOMICS.
- V. SIX-YEAR CURRICULUM IN SCIENCE AND LAW.
- VI. FIVE-YEAR CURRICULUM IN SCIENCE AND LIBRARY ECONOMY.

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\*More detailed information concerning admission is furnished in a separate section of the University Bulletin, known as Entrance Information. (Pages 7-11).

†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.

## I. ELECTIVE CURRICULA WITH A MAJOR IN SOME ONE DEPARTMENT

In this division of the College, in order to secure the degree of Bachelor of Science, a student must complete a total of at least 192 credits, and must observe the restrictions in regard to a major subject, necessary scholarship, elections in other colleges and the requirements of the Lower Division and the Upper Division.

### A. REQUIREMENTS IN A MAJOR SUBJECT.

A student must earn from 36 to 60 credits in a single department, known as his major department. Not more than 96 credits may be counted in the major and one other department.

### B. SCHOLASTIC REQUIREMENTS.

Not less than three-fourths of the credits required for graduation must be earned with grades of A, B, or C.

### C. ELECTIONS IN OTHER COLLEGES.

In Engineering, Fine Arts, Forestry, Law, Mines, and Pharmacy, electives will be allowed to the extent of 18 credits from any one college, and not to exceed 24 from all.

### D. REQUIREMENTS OF THE LOWER DIVISION.

The work of the Lower Division comprises in general the studies of the freshman and sophomore years of the undergraduate curriculum and leads to the Junior Certificate. It consists primarily of the elementary and introductory courses of the various departments.\* Its aim is to give a broad general training in preparation for the advanced work of the Upper Division.

To receive the Junior Certificate the student must have earned not less than 90 university credits, together with required credits in Physical Education or Military Science, and must have completed in secondary school and University together the amount of work specified in the subjects mentioned below except (1) that subject (o) may be taken in the Upper Division by students who begin a modern language after entering the University; and (2) subject (l) or (m) may, in certain cases, be taken in the Upper Division with the consent of the dean.

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\*NOTE.—The following (or their equivalents) constitute the courses of the Lower Division:

1. Modern Foreign Language: The first two years.
2. Ancient Language: Intermediate Latin; the first two years of college work; courses in civilization and literature.
3. English: Freshman composition; freshman and sophomore literature.
4. Mathematics and the Natural Sciences: The elementary courses (1 and 2) or equivalents.
5. History: The introductory courses in each line, e. g., medieval and modern (1 and 2), American (7 and 8), English (5 and 6), ancient (17 and 18).
6. Philosophy and Psychology: Elementary or introductory course in each line, e. g., general psychology, introduction to philosophy, ethics, logic.
7. Political and Social Science: Introductory courses in economics, government, sociology.
8. Education: Introductory course, viz., Principles of Education.
9. Public Speaking: 1 and 2.

## 1. SUBJECTS REQUIRED IN A SECONDARY SCHOOL.

- (a) English, 8 years (8 units).

In addition to the completion of this amount of work in English, the student must show by a test examination, *proficiency in English composition*, or he must take English composition in the University, as provided under requirement (p) below.

- (b) Elementary algebra, 1 year (1 unit).

- (c) Plane geometry, 1 year (1 unit).

## 2. SUBJECTS REQUIRED EITHER IN A SECONDARY SCHOOL OR IN THE UNIVERSITY.

- (d) A modern foreign language, which must be either German or French, 2 years (2 units or 20 credits).

- (e) U. S. History and civics, 1 year (1 unit or 10 credits). See Note 1.

- (f) History—ancient, medieval and modern, or English, 1 year (1 unit or 10 credits).

- (g) Mathematics, 1 year (1 unit or 10 credits). See Note 2.

- (h) Physics, 1 year (1 unit or 10 credits).

- (i) Chemistry, 1 year (1 unit or 10 credits).

- (j) Botany or zoology, 1 year (1 unit or 10 credits).

- (k) Geology, physiography, or astronomy, 1 year; or astronomy and geology,
- $\frac{1}{2}$
- year each (1 unit or 10 credits).

## 3. SUBJECTS REQUIRED IN THE UNIVERSITY.

- (l) Philosophy, psychology, 1 year (10 credits). See Note 3.

- (m) Economics, political science, sociology, 1 year (10 credits). See Note 4.

- (n) Physical education or military science, 2 years (12 credits). See Note 5.

## 4. SUBJECTS CONDITIONALLY REQUIRED IN THE UNIVERSITY.

- (o) Either French or German, 1 or more years (10 or more credits). See Note 6.

- (p) English composition, 2 to 8 credits. See Note 7.

- (q) Ancient language and literature, or English literature, 1 year (10 credits). See Note 8.

NOTE 1. The students who do not take U. S. history and civics in a secondary school must take History 7 and 8 in the University.

NOTE 2. One quarter of advanced algebra is required.

NOTE 3. Not more than 5 credits in psychology may be counted toward the requirement in philosophy or psychology.

NOTE 4. Not more than 5 hours each of economics, political science, or sociology may be counted toward satisfying the requirements in these subjects.

NOTE 5. In addition to the 12 credits in military science or physical education required of students in the Lower Division, 6 quarters physical education are required in the junior and senior years.

NOTE 6. Beginning with 1921, two years of one foreign language will be required for admission to the College of Liberal Arts or the College of Science. If the requirement has not been met in high school, it must be made up in college without credit. (For the College of Science, this language must be French or German.)

NOTE 7. English composition is required of all freshmen who cannot show by examination a proficiency in the subjects. (See University calendar for dates of examination.)

NOTE 8. Greek or Roman civilization or literature, the literature of India or of Persia, or English literature, may be taken to satisfy the requirement in literature. This subject is required of all students who have not taken, or do not plan to take, 3 or more years of ancient language.

As a rule students in the Lower Division must confine their elections to the courses numbered 1 to 99, in the catalogue. A student who has had the proper prerequisite, or who has attained sufficient intellectual maturity, may register for an Upper Division course, with the consent of the instructor concerned and of the dean.

No student in the Lower Division shall be registered for more than 16 credit hours per quarter (exclusive of military science and physical education), or for less than 12 hours per quarter, except with the consent of the dean.

#### E. REQUIREMENTS OF THE UPPER DIVISION.

The Upper Division comprises the studies of the junior and senior years. It consists principally of the advanced work of the undergraduate curriculum, and is therefore differentiated, both in content and method, from that of the Lower Division.

To be enrolled in the Upper Division, a student must have completed all the requirements for the Junior Certificate. The minimum amount of work to be done in the Upper Division will vary from 96 to 84 hours of credit, according to the number of credits offered for the Junior Certificate. *The student must earn not less than 84 hours of credit while enrolled in the Upper Division.* At least 60 of the credit hours taken in the Upper Division must be in Upper Division courses (100-199). Of these 60 hours a minimum of 18 must be in the major subject.

No student of the Upper Division shall be registered for more than 16 or less than 12 hours per quarter, except with the consent of the dean. A maximum of 19 hours per quarter may be granted to students who have made an exceptional record in scholarship in the Lower Division and who maintain that record in the Upper Division.

## II. PRE-MEDICAL CURRICULA.

## A—FOUR-YEAR CURRICULUM PREPARATORY TO MEDICINE

Four years of prescribed work leading to the degree of bachelor of science are provided for students who desire to graduate from this institution before entering a medical school. We recommend the first two years of the course to those students seeking only to meet the entrance requirements of medical schools requiring two years of college training. Students should have had the following high school preparation:

- 3 units of English.
- 1 unit of Algebra.
- 1 unit of Plane Geometry.
- 1 unit of U. S. History and Civics.
- 1 unit of Medieval and Modern History.
- 1 unit of Physics.
- 2 units of either French or German.

## FIRST YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Chem. (21 General).....	5	Chem. (22 General).....	5	Chem. (23 General).....	5
Zool. (3 Pre-medical).....	5	Zool. (4 Vertebrate).....	5	Zool. (5 Embryology).....	5
English (51 Composition)...	5	English (52 Composition)...	5	Sci. French or German.....	5
Mil. Sci. or Phys. Ed.....	2	Mil. Sci. or Phys. Ed.....	2	Mil. Sci. or Phys. Ed.....	2

## SECOND YEAR

Physics (92 General).....	5	Physics (93 General).....	5	Physics (3 Gen. Elec.).....	5
Chem. (81 Organic).....	5	Chem. (82 Organic).....	5	Sociology (1 Intro.).....	5
Psychology (1 General)....	5	Econ. 1 or Pol. Sci.....	5	Psychol. or Philosophy.....	5
Mil. Sci. or Phys. Ed.....	2	Mil. Sci. or Phys. Ed.....	2	Mil. Sci. or Phys. Ed.....	2

## THIRD YEAR

Anatomy (101 General)....	6	Anatomy (102 General)....	6	Anatomy (103 General)....	6
Anat. (105 Histology and Embryology).....	5	Anat. (106 Histology and Embryology).....	5	Anat. (107 Neurology).....	5
Bacteriology (103 Gen.)....	4	Bacteriology (109 Med.)... 4		*Pathology.....	4
				Bacteriology (1 Hygiene)... 4	

## FOURTH YEAR

Zool. (109 Physiology).....	5	Zool. (110 Physiology).....	5	Zool. (111 Physiology).....	5
Chem. (141 Physiology) ...	5	Chem. (14 Physiology).....	5	Phar. (111 Tox. & M. Med.) 5	
*Pathology.....	3	*Pathology.....	3	*Pathology.....	4
Anat. (104 Topographical)..	4	Phar. (110 Tox. & M. Med.) 5		H. B. (107 Dietetics).....	4

## B—THREE-YEAR CURRICULUM FOR NURSES

Believing that a broader scientific education is desired by young women entering the nursing profession, the University offers a three-year pre-hospital course which when followed by the two-year hospital course in such hospitals as may be selected by the University, leads to a degree of Bachelor of Science in Nursing and a Certificate of Nursing.

For admission to this curriculum a student must present 15 units by examination or certificate from an accredited school from which she has graduated. These 15 units shall include the following:

- 3 units of English
- 1 unit of Algebra
- 1 unit of Plane Geometry
- 1 unit of U. S. History or Civics
- 1 unit of Medieval and Modern History
- 2 units of either French or German



## 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), 20 credits.

Chemistry, 20 credits.

Geology, 20 credits.

Mathematics (exclusive of astronomy), 20 credits.

Physics, 20 credits.

Zoology, 20 credits.

(b) Included in or in addition to the work in (a) every student must take 5 credits in mathematics, 10 credits in physics, 10 credits in chemistry, 10 credits in botany or zoology.

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

(d) If 20 credits of chemistry are taken, only 15 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 10 credits.

(h) Until 1919 students may fulfill the requirements for the normal diploma by electing 18 credits from the following subjects: Principles of Education, Educational Sociology, Secondary Education, Principles of Teaching, and Practice Teaching. However, under Rule 64 (e), until 1919-1920 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.

## IV. PRESCRIBED COURSES IN HOME ECONOMICS

Many fields of activity other than teachings are being offered to the women trained in the work given in the Department of Home Economics. In each line of vocational work offered there is opportunity to put into practice the technical work of the laboratory. In Food Preparation the students work in the University Commons, in commercial establishments and hospitals to gain practical experience. In Clothing, students learn first to sew for themselves and then for customers. For those who wish to enter commercial work there is provided, through the coöperation of business houses, opportunity to work in stores through two quarters. This is accompanied by conferences with the instructor who receives reports from the store.

Seniors are required to live in the practice cottage located on the campus, where they take full responsibility for the management and care of the house for a family of four during a period of two weeks.

Accordingly, the following grouping is arranged as a guide in selecting the work that will best satisfy the requirements of each individual.

GROUP I is planned for students who want a liberal college training with emphasis upon the subjects that pertain to the home and home life. Those who are interested in social betterment and who wish to enter definite welfare work may combine home economics, economics and sociology in this curriculum. There is also opportunity afforded to select work that will prepare for interior decorating by choosing courses in home economics and fine arts.

GROUP II, FOOD AND NUTRITION, is offered for those students who wish to specialize for the purpose of teaching this phase of the work in institutions of higher education, for laboratory or research workers and for dietitians in hospitals, sanatoria or private work. Those who intend to become sanitary and food inspectors are also advised to take the course.

GROUP III, TEACHERS' CURRICULUM. There is always a demand for the well-trained home economics teacher. This group combines some liberal arts subjects with all phases of home economics and its supporting subjects in other departments, chemistry, physics, bacteriology, fine arts, physiology and economics. The courses are especially arranged to meet in the most efficient manner the particular needs of home economics students. Practice teaching extending through one quarter in the Seattle schools is required.

★ GROUP IV, INSTITUTIONAL MANAGEMENT. In this course there are combined the fundamental sciences, technical and business courses with practice work. Young women with initiative and ability find positions that offer increasingly attractive returns when trained in this line of work. Institutions operating for groups of people are seeking trained women to manage the commissary and housekeeping departments.

GROUP V, TEXTILE AND NON-TEXTILE MERCHANDISE. Mercantile establishments offer many opportunities for employment that have exceptional advantages for growth. The training received in this course is technical and commercial work, with the practical experience provided here, equips the young woman of ability to enter a field that promises additional advantages with increasing experience and the development of latent powers.

Any one of the five lines may lead to the degree of bachelor of science.

Students who fulfill all entrance requirements of the College of Liberal Arts may use home economics as a major for the degree of bachelor of arts.

Students eligible to freshman standing in any college of the University are eligible to enter any one of the above five curricula in home economics; 180+12 credits are required for graduation from any of these curricula.

#### GROUP I—GENERAL CURRICULUM

To provide a liberal college training, also for those students who wish to fit themselves for the following vocations:

1. Social service. (Elect economics and sociology).
2. Interior decorating, textile or costume design. (Elect Fine Arts III.)
3. Journalism.

## UNIVERSITY OF WASHINGTON

## FRESHMAN YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
English 1.....	5	English 2.....	5	Language .....	5
Chemistry 5.....	5	Chemistry 6.....	5	Zoology 1-2 or Botany 2....	5
		Zoology 1-2 or Botany 2.....	5		

Electives: Home Economics 25, 4, 8, Fine Arts III. 3, Zoology 7.

## SOPHOMORE YEAR

Language .....	5	Language .....	5	Language .....	5
History 1, 5 or 7.....	5	History 2, 6 or 8.....	5	Psychology (general).....	5
				Economics 51.....	5

Electives: Home Economics 5-6.

## JUNIOR YEAR

Philosophy .....	5	Sociology 51 .....	5
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Electives: Home Economics 106, 61-62, 148, Fine Arts II. 1, Physics 89-90.

## SENIOR YEAR

Electives: Home Economics 144-145, 101, 146-147, Bacteriology 5, Psychology 109.

## GROUP II—FOOD AND NUTRITION CURRICULUM

To be taken by those students who wish to fit themselves for the following vocations:

1. Teaching in institutions of higher education.
2. Laboratory or research work.
3. Dietitian in hospitals or sanatoria.
4. Sanitary and food inspectors.

## FRESHMAN YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
English 1.....	5	English 2.....	5	Language, Lit. or Hist.....	5
Chemistry 5.....	5	Chemistry 6.....	5	Zoology .....	7

Electives: Home Economics 25, 4, Fine Arts III. 5, Botany 1-2 or Zoology 1-2.

## SOPHOMORE YEAR

Language, Lit. or Hist.....	5	Language, Lit. or Hist.....	5	Language, Lit. or Hist.....	5
Chemistry 35.....	5	Chemistry 36.....	5	Chemistry 144.....	5
				Psychology 1.....	5

Electives: Home Economics 5-6.

## JUNIOR YEAR

Chemistry 113.....	5	Economics .....	5	Sociology .....	5
*Bacteriology 106.....	5	*Bacteriology 107.....	5		

Electives: Home Economics 106, 108, Physics 89-90, Bacteriology.

## SENIOR YEAR

Electives: Home Economics 103, 110, and related sciences.

## GROUP III—TEACHERS' CURRICULUM

It is important for those who expect to teach in High School to take this course.

## FRESHMAN YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
English 1.....	5	English 2.....	5	Language, Lit. or Hist.....	5
Chemistry 5.....	5	Chemistry 6.....	5	Zoology 7 .....	5

Electives: Home Economics 25, 4, 8, Fine Arts III. 3.

## SOPHOMORE YEAR

Language, Lit. or Hist.....	5	Language, Lit. or Hist.....	5	Language, Lit. or Hist.....	5
Chemistry 35.....	5	Chemistry 36.....	5	Chemistry .....	5
				Psychology .....	5

Electives: Home Economics 5-6.

\* Home Economics students for year 1918-1919 will substitute Bacteriology 5 for Bacteriology 106-107.

JUNIOR YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Economics .....	5	Sociology 1 .....	5	Education 89 .....	5
				Education 119 .....	3
				Education 157 .....	3

Electives: Home Economics 107, 108, 61, 62, Physics 89, 90, Psychology 109.

SENIOR YEAR

Home Economics 146.....	5	Home Economics 147.....	3
Bacteriology .....	4		

Electives: Home Economics 143, 144, 145, Education 161, Bacteriology, Fine Arts II. 1.

GROUP IV—INSTITUTIONAL MANAGEMENT

To be taken by those students who wish to fit themselves for the following vocations:

1. Dietitians.
2. House directors.
3. Managers of Tea Rooms, school lunch rooms, cafeterias.
4. Food service in state, municipal, or charitable institutions.

FRESHMAN YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
English 1.....	5	English 2 .....	5	Language, Lit. or Hist.....	5
Chemistry 5 .....	5	Chemistry 6 .....	5	Zoology 7 .....	5

Electives: Home Economics 25, 4, Fine Arts III. 3, Law 55.

SOPHOMORE YEAR

Language, Lit. or Hist.....	5	Language, Lit. or Hist.....	5	Language, Lit. or Hist.....	5
Chemistry 35 .....	5	Chemistry 36 .....	5	Chemistry 144 .....	5
				Psychology .....	5

Electives: Home Economics 5-6.

JUNIOR YEAR

Economics 51.....	5	Sociology 51.....	5
Electives: Home Economics 121, 122, 123, 108, 143, Arts II. 1, Economics 62, 71.		Chemistry 82, Physics 89-90, Fine	

SENIOR YEAR

*Bacteriology 106.....	5	*Bacteriology 107 .....	5
Electives: Home Economics 144, 145, 124, 125, Economics 11, 12.			

GROUP V—TEXTILE MERCHANDISING

To be taken by those students who wish to fit themselves for the following vocations:

1. Educational directors in store.
2. Teachers of salesmanship.
3. Managerial work in stores.

FRESHMAN YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
English 1.....	5	English 2.....	5	French .....	5
Chemistry 5.....	5	Chemistry 6.....	5	Zoology 7.....	5

Electives: Home Economics 25, 8, Fine Arts III. 3, Law 55.

SOPHOMORE YEAR

French .....	5	French .....	5	French .....	5
Economics .....	5	Sociology 51 .....	5	Psychology 1.....	5

Electives: Home Economics 61-62, 27, 29, Fine Arts III. 62, 71.

JUNIOR YEAR

Philosophy .....	5		
Electives: Home Economics 130-131, 136, 138, 143, 144-145, Economics 11, 12.			

SENIOR YEAR

Electives: Home Economics 140, Economics 11, 12.

\* Home Economic students for year 1918-1919 will substitute Bacteriology 5 for Bacteriology 106-107.

### V.—SIX-YEAR COURSE IN SCIENCE AND LAW

This is a combination course whereby a student may obtain the degrees of bachelor of science and bachelor of laws in six years. At the end of his third year, after he has earned 135 plus 12 scholastic credits, including all of the required work, together with a major in some department, he may register in the School of Law for the first year's work in law. He will be granted the bachelor of science degree at the end of the fourth year, or whenever he completes the required work above specified, together with 9 additional credits in the College of Science and 24 credits in the School of Law; making a total of 180 plus 12 credits for graduation. The fifth and sixth years of the combined course are devoted to completing the remainder of the required work for graduation from the School of Law.

### VI.—FIVE-YEAR COURSE IN SCIENCE AND LIBRARY ECONOMY

This course is for students who are preparing to become professional librarians and who desire to receive degrees of bachelor of science and bachelor of library economy. Under this arrangement a student should first complete, all the required work of the course for Science Teachers (outlined above), substituting courses in Library Economy for the 12 credits in Education, as stipulated for the senior year. A portion of the fourth year and all of the fifth year are devoted to the required subjects in Library Economy. If this plan is carefully followed, a student should earn the degree of bachelor of science at the end of the fourth year, and the degree of bachelor of library economy at the end of the fifth year. (See bulletin of the Library School).

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

# College of Education

## THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.  
FREDERICK ELMER BOLTON, PH. D. (Clark), Professor of Education, DEAN.  
LEONARD V. KOOS, PH. D. (Chicago), Associate Professor of Education.  
FRED CARLETON AYER, PH. D. (Chicago), Associate Professor of Education.  
CLIFFORD WOODY, PH. D. (Columbia), Assistant Professor of Education.  
GEORGE EARL FREELAND, A. M. (Clark), Assistant Professor of Education.  
GEORGE HENRY JENSEN, B. S. (Valparaiso), Assistant Professor of Vocational Education and Supervisor of Teacher Training in the Trades and Industries.

CAROLINE HAYEN OBER, Professor of Spanish.  
TREVOR KINCAID, A. M. (Washington), Professor of Zoology.  
FREDERICK MORGAN PADELFORD, PH. D. (Yale), Professor of English.  
FREDERICK ARTHUR OSBOIN, PH. D. (Michigan), Professor of Physics; Director of the Physics Laboratories.  
WILLIAM SAVREY, PH. D. (Harvard), Professor of Philosophy.  
DAVID THOMSON, B. A. (Toronto), Professor of Latin; Dean of the College of Liberal Arts.  
PIERRE JOSEPH FREIN, PH. D. (Johns Hopkins), Professor of French.  
THEODORE CHRISTIAN FRYE, PH. D. (Chicago), Professor of Botany.  
\*ROBERT EDOUARD MORITZ, PH. D. (Nebraska), PH. N. D. (Strassburg), Professor of Mathematics.  
FREDERICK WILLIAM MHSNEST, PH. D. (Wisconsin), Professor of German.  
†DAVID CONNOLLY HALL, SO. M., M. D. (Chicago), University Health Officer and Director of Physical Education for Men.  
IRVING MAOKBY GLEN, A. M. (Oregon), Professor of Music; Dean of the College of Fine Arts.  
\*JOHN WEINKEL, PH. D. (Wisconsin), Professor of Bacteriology.  
EDWIN JOHN VICKNER, PH. D. (Minnesota), Professor of the Scandinavian Languages.  
EFFY ISABEL RAITT, B. S. (Columbia), Professor of Home Economics; Director of the Department of Home Economics.  
WILLIAM PIERCE GORSUCH, A. B. (Knox), Professor of Public Speaking and Debate.  
STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.  
†CARLETON HUBBELL PARKER, PH. D. (Heidelberg) Professor of Economics; Dean of the College of Business Administration.  
WILLIAM FIELDING OGBURN, PH. D. (Columbia), Professor of Sociology.  
STEPHEN IVAN MILLER, JR., A. B. (Stanford), LL. B. (Michigan), Professor of Transportation; Director of the College of Business Administration.  
EDWARD McMAHON, A. M. (Wisconsin), Associate Professor of American History.  
GEORGE WALLACH UMPHREY, PH. D. (Harvard), Associate Professor of Spanish.  
EDWIN JAMES SAUNDERS, A. M. (Harvard), Assistant Professor of Geology.  
\*ROBERT EUSTAFIEFF ROSE, PH. D. (Munich), Assistant Professor of Chemistry.  
\*ROBERT MAX GARRETT, PH. D. (Munich), Assistant Professor of English.  
HARVEY BRUCE DENSMORE, A. B. (Oxford), Assistant Professor of Greek.  
ALLEN FULLER CARPENTER, PH. D. (Chicago), Assistant Professor of Mathematics.  
ERNST OTTO ECKELMAN, PH. D. (Heidelberg), Assistant Professor of German.  
FRANCIS DICKET, A. M. (Columbia), Assistant Professor of Music.  
JESSIE B. MERRICK, B. S. (Columbia), Director of Physical Education for Women.  
\*HENRY SLATER WILCOX, A. M. (Harvard), Instructor in Psychology.  
HELEN BALCH CULVER, Bachelor's Diploma (Pratt), Instructor in Design.  
CLARE WILDE SEXSMITH, Instructor in Physical Education for Men.  
BUTLEDGE T. WILKINSON, PH. D. (Chicago), Instructor in Psychology.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

<sup>3</sup> Absent on leave, second and third quarter.

<sup>4</sup> Absent on part-time war service.

<sup>†</sup> Died, March 17, 1918.

## 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 subject 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 and industrial arts, home economics, physical training and other special subjects; (7) normal school and college instructors in education; (8) experts in educational research; (9) specialists in the education of defectives; (10) playground directors; (11) Y. M. C. A. and Y. W. C. A. workers; (12) juvenile court workers.

## 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, French; Latin, Greek; English, French; English, history, civics; English, Latin, history; Spanish, French; mathematics, physics, chemistry; botany, zoology, physiology, physiography; home economics alone or in connection with one or two other subjects; manual and industrial arts 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

Many 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 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 SUPERVISED 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 supervised teaching under direction of the regular teachers of the school and the University professor in charge of that 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 eight rooms on the second floor of Home Economics Hall, 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, school surveys and current school problems.

### THE BAILEY AND BABETTE GATZERT FOUNDATION FOR CHILD WELFARE

Although the foundation is not a part of the College of Education its work 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 has been 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.

Under the terms of the Smith-Hughes act "the training of teachers for grades and industries in resident work and extension work shall be conducted through the University of Washington, under the supervision of the State Board of Vocational Education, with the approval of the Federal Board." In conformity with these regulations special courses will be organized to train teachers for the secondary, industrial and trade schools. One instructor in the Department of Education devotes his entire time to schools and to giving them pedagogical training.

### 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 bookkeeping, stenography, commercial law, commercial policies, commercial geography, besides courses in economics, and the professional training in education.

## 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, school commencements, etc. They are also glad to conduct educational survey 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 1918-1919, 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 course leading to the degrees of Master of Arts in Education and Master of Science in Education; (c) Work leading to the degree of Master of Arts or Master of Science with education as a major subject; (d) 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 receives 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 omitted. Of course, the student may elect these if he chooses. By this means is in harmony with the idea of the great vocationalizing of education.

The work of 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 thorough 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 combined course 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 (one unit algebra, one unit plane geometry).

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).

\* More detailed information concerning admission is furnished in a separate section of the University Bulletin, known as Entrance Information. (See pages 7-11.)

† 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.

- (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.

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 civics..1 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.

### 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:

	<i>Credits</i>
*Zoology .....	10
Psychology .....	5
Sociology .....	5
Physical education .....	12
†English .....	10
Education .....	86
Teaching subjects:	
(a) Two academic majors or	
(b) One academic major and two academic minors.	
‡Free electives, depending upon the foregoing selections .....	

Total for graduation.....192

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\* Students who have had one year in zoology in the high school may be excused from the laboratory work in zoology in the University, but shall be required to take the courses in ethnology and evolution. The distribution of the required work in zoology shall be determined by the head of the Department of Zoology.

† All freshmen are required to take an examination in English on entrance to the College of Education. Those whose standings are especially high in the examination may be excused from a part of the required ten credits.

‡ The student's free electives will vary from 15 to 50 credits, according to the exemption in English and the number of credits secured in the major and minor subjects.

1. An academic major shall consist of from 35 to 45 credits in some subject other than education. At the option of the major professor this may include the teachers' course.

2. An academic minor shall consist of from 20 to 30 credits in some subject other than education.

3. The distribution of the work in the academic majors and minors shall be under the advice of the dean of the College 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 teaching subjects may be selected from any subjects now recognized in the Colleges of Liberal Arts, Science, Fine Arts or Business Administration.

6. The 36 credits in education required for the degree of bachelor of education should include as foundation work the 18 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.

7. 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, five 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.

8. 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 1910-1911.

9. Courses in manual and industrial arts, or in those combined with drawing, will be accepted as a minor toward the degree of bachelor of education.

10. 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 36 credits in education. Students in the Colleges of Science, Engineering, Forestry, Mines, Law, Pharmacy, and Fine Arts, may elect courses in education according to conditions fixed by these divisions.

## FRESHMAN YEAR

During the freshman year the student should aim to take approximately the following work:

	<i>Credits</i>
English .....	10
Zoology .....	10
Physical education .....	6
Psychology .....	5
Sociology .....	5
Introduction to education.....	2
Probable academic major .....	15

## ELECTIVES OPEN TO FRESHMEN

**LANGUAGES:** English, French, German, Greek, Italian, Latin, Public Speaking, Scandinavian, Spanish.

**SCIENCES:** Botany, chemistry, geology, home economics, mathematics, physics, zoology.

**SOCIAL SCIENCES:** History, journalism, political science, economics, sociology, commerce.

**MANUAL AND INDUSTRIAL ARTS:** Drawing, woodwork, forgework.

## SOPHOMORE YEAR

During the sophomore year the student should continue physical education. If psychology and sociology have not been taken in the freshman year they should be taken during the first quarter of the sophomore year. Principles of Education should be taken during the sophomore year, the academic major should be continued and at least one academic minor begun. The range of electives open to sophomores is very wide. For limitations see the departmental statements.

Psychology 1 is prerequisite to all courses in Education except Education 1. In exceptional cases Psychology 1 may be taken concurrently, but only on the approval of the dean of the College of Education.

The dean of the College of Education may accept as the equivalent of such a fundamental course in psychology the incidental psychological training which may have been received by experienced teachers, with the understanding that they are eventually to take psychology as part of the professional work.

## JUNIOR AND SENIOR YEARS

During the junior and senior years about five hours of work in education will be necessary each quarter. The academic major and minors should also be completed. The remainder of the work is elective.

ADMISSION OF NORMAL SCHOOL GRADUATES TO  
ADVANCED STANDING

Graduates of the normal schools of this state and of institutions of like standing elsewhere, who have completed two full years of normal work after graduating from a four year accredited high school, will be admitted to junior standing in the College of Education. For graduation with the

degree of Bachelor of Education (B. Ed.), such students are required to earn a minimum of 90 credits in the University, including the satisfaction of such of the requirements for this as have not been fairly covered by previous work.

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, 36 credits.

4. A major academic subject, 36 to 48 credits at the option of the major professor.

5. Two academic minors of at least 24 credits each.

6. A teachers' course in the academic major, maximum 9 credits.

7. At least 5 credits in psychology.

8. Total 237 credits, including the undergraduate credits.

9. Upon completion of the course for the degree of master of arts in education or master of science in education the candidate shall be examined in the academic major, the two academic minors and in education under regulations which apply to the examination of candidates for masters' degrees in the graduate school.

NOTE 1. Such of the above requirements as have been included in the work taken for the bachelor's degree need not, of course, be taken a second time.

NOTE 2. Upon approval of the professor in charge of the academic major a part of the work for the major may be taken in allied lines.

### REQUIREMENTS FOR THE NORMAL 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 consult with the dean of the College of Education as early as possible regarding their work for the diploma and their preparation for teaching.

I. THE UNIVERSITY FIVE-YEAR NORMAL DIPLOMA, valid in the 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, Education, or Fine Arts. (The candidate must present 198 credits for graduation.) (b) Completion of at least 18 credits (quarter hours) in the department of Education. (c) Completion of a teachers' course in the major academic subject, if offered: maximum, 9 credits. (d) General psychology, 5 credits. (e) 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.

The courses in education include the following:

(a) OLD PLAN

- Principles of Education
- History of Education or Social Foundations of Education
- Childhood and Adolescence or Secondary Education
- Observation and Teaching or Methods of Teaching.

(b) NEW PLAN

(Effective for students entering as freshmen September, 1916, or later.)

	<i>Credits</i>
Principles of Education .....	5
Educational Sociology .....	3
Secondary Education .....	3
Methods of teaching .....	3
Practice of teaching .....	5

Students who entered before September, 1916, may have the privilege of following either plan.

The department reserves the right to adjust these requirements in education subjects 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 12 credits in education in this University. The amount of exemption shall be determined in each case by the dean of the College of Education.

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 of 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 quarter subsequent to graduation and to earn not less than 15 credits in approved subjects. Of these 15 credits, 5 credits shall be in courses in

education approved by the dean of the College of Education, and 10 credits in teaching subjects, in courses approved by the major professor. They must have earned here or elsewhere, at least 5 credits in psychology, a total of 18 credits in education, and have completed a teachers' 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 12 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.

# Library School

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## THE FACULTY

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

JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.

WILLIAM ELMER HENRY, A. M. (Indiana), Professor of Library Economy, DIRECTOR.

CHARLES WESLEY SMITH, A. B., B. L. S. (Illinois) Associate Professor of Library Economy.

MABEL ASHLEY, A. B. (Kansas), Graduate in Library Economy (Washington), Instructor in Library Economy.

EVELYN MAY BLODGETT, A. B. (Vassar), Certificate (Pratt Institute Library School), Instructor in Library Economy.

GERTRUDE E. ANDRUS, Diploma (Carnegie Library School), Superintendent Children's Department, Seattle Public Library, Lecturer on work with schools and children.

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## ADMISSION

The Library School curriculum is based upon two years of college work (known as the Lower Division) in either the College of Liberal Arts or the College of Science as the student may elect.

It consists of a three-year curriculum of liberal arts or sciences and library economy combined, making a five-year curriculum, four of which are academic and one professional. For admission to the Library School, therefore, the student must complete the requirements of the Lower Division in either the College of Liberal Arts or the College of Science.

## CURRICULA

### I. REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS.

The bachelor of arts degree is granted at the end of the senior year to those who have finished the Liberal Arts requirements of the Lower Division and who have taken Liberal Arts electives to total 192 credits.

The electives taken must include three groups minors of not less than 24 credits each in the following groups: language and literature; natural sciences; history, political, economic and social sciences; philosophy; psychology, and education.

A subject major is not required.

### II. REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE.

The bachelor of science degree is granted at the end of the senior year to those who have finished the work of the Lower Division in the College of Science and who shall have earned 192 credits, 90 of which shall be in science under the following restrictions:

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, 24 credits
- Chemistry, 24 credits
- Geology, 24 credits
- Mathematics, 24 credits
- Physics, 24 credits
- Zoology, 24 credits

B. Either included or in addition to the work in (A) every student must take six credits in mathematics, 12 credits in physics, 12 credits in chemistry, 12 credits in botany or zoology.

C. If 24 credits in chemistry are taken, only 18 credits in geology are required.

The following would ordinarily be the most satisfactory combination:

Chemistry, 24 credits  
 Botany, 24 credits  
 Geology, 18 credits  
 Mathematics, 6 credits  
 Physics, 12 credits  
 Zoology, 6 credits

### III. REQUIREMENTS FOR THE DEGREE OF BACHELOR OF LIBRARY ECONOMY.

The curriculum in Library Economy, constituting one year of work, consists of 48 credits distributed through the senior and graduate years, 20 credits being earned in the senior year and 28 in the graduate year.

At the end of the graduate or fifth year, or upon the completion of 240 credits, 48 of which must be in Library Economy, the degree of Bachelor of Library Economy is granted.

#### CURRICULUM IN LIBRARY ECONOMY

	<i>Credits</i>
Order accession and loan systems.....	2
Classification and subject headings.....	3
Cataloguing .....	6
Reference .....	6
Printing and binding .....	1
Organization and extension.....	3
Administration .....	2
Subject bibliography .....	2
Book selection .....	6
Work with children and schools.....	1
Special lectures .....	1
Special study of specific libraries.....	1
Practice (420 clock hours) .....	14
	<hr/> 48

Each recitation or lecture period presupposes two hours preparation and twelve such periods are counted as one credit. Two and one-half clock hours of practice count as one recitation or lecture period, and thirty clock hours of practice are counted as one credit.

No course in this curriculum is open to election by students outside the Library School.

## PRACTICE

Practice work under careful supervision covers 420 practice hours, distributed as seven hours per week through five quarters for those who do a part of the work as under-graduates, or 14 hours per week for 30 weeks for those who enter as graduate students and complete the work in three quarters.

The practice time is divided about equally between the University Library and the Seattle Public Library.

The Seattle Public Library offers rather unusual opportunity for students to practice in varied phases of work under careful supervision of trained librarians of large experience.

## GRADUATE STANDING

Graduates of the University of Washington or of other colleges and universities of equal rank may enter the Library School and finish the work and receive the professional degree in one year, upon compliance with the following provisions:

A. No one may be admitted to the senior year or to graduate standing with less than 20 credits each in French and German.

B. Before entering upon the work of the senior year each student must be able to manipulate a typewriting machine with accuracy and fair speed.

C. If at any time there are more applicants for admission to the Library School than can be adequately cared for, preference will be given to residents of the state of Washington if other qualifications are essentially equal.

## ADVISORY SUGGESTIONS

A. No one with serious physical defects or in ill health can readily secure a position in library work, and therefore such persons should not ask admission to the Library School.

B. Persons beyond thirty years of age should not attempt to enter library work, unless they have been continuously engaged in intellectual pursuits since graduating from college.

# College of Business Administration

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## THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.  
STEPHEN IVAN MILLER, A. B. (Stanford), LL. B. (Michigan), Professor of Transportation, Director of the College of Business Administration and Head of the Department of Economics.  
J. ANTON DE HAAS, A. M. (Harvard), PH. D. (Stanford), Professor of Business Administration.  
VANDERVEER CUSTIS, PH. D. (Harvard), Associate Professor of Economics.  
ABRAHAM BERGLUND, PH. D. Columbia, Associate Professor of Economics.  
THERESA S. McMAHON, PH. D. (Wisconsin), Assistant Professor of Economics.  
EVERETT FRANCIS DAHM, A. B. (Wisconsin), Assistant Professor of Business Administration and Assistant Director of Extension Division.  
<sup>1</sup>LEWIS LILLY, A. B. (Wisconsin), Assistant Professor of Accounting and Finance.  
BRUCE D. MUGGETT, PH. D. (Pennsylvania), Assistant Professor of Insurance.  
REXFORD G. TUGWELL, A. M. (Pennsylvania), Assistant Professor of Marketing.  
<sup>1</sup>CLEMENT AOKERMAN, A. M. (Harvard), Instructor in Economics.  
WILLIAM FELDING OGBURN, PH. D. (Columbia), Professor of Sociology.  
FRANK J. LAUBE, A. M. (Washington), Instructor in Political Science.

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HENRY LANDES, A. M. (Harvard), Professor of Geology and Dean of the College of Science.  
J. ALLEN SMITH, PH. D. (Michigan), Professor of Political Science and Dean of the Graduate School.  
EDMOND STEPHEN MBANY, M. L. (Wisconsin), Professor of History.  
CAROLINE HAVEN OBER, Professor of Spanish.  
FREDERICK MORGAN PADELFOED, PH. D. (Yale), Professor of English.  
WILLIAM SAVERY, PH. D. (Harvard), Professor of Philosophy.  
PIERRE JOSEPH FREIN, PH. D. (Johns Hopkins), Professor of Romanic Language.  
ROBERT EDOUARD MORITZ, PH. D. (Nebraska), PH. N. D. (Strassburg), Professor of Mathematics.  
HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.  
FREDERICK ELMER BOLTON, PH. D. (Clark), Professor of Education and Dean of the College of Education.  
EFFIE ISABEL RAYT, B. S. (Columbia), Professor of Home Economics and Director of the Department of Home Economics.  
STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.  
LESLIE JAMES AYER, B. S., J. D. (Chicago), Professor of Law.  
ERNST OTTO ECKELMAN, PH. D. (Heidelberg), Assistant Professor of German.  
FREDERICK A. RUSSELL, PH. D. (Illinois), Assistant Professor of Journalism.

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## AIM OF THE COLLEGE OF BUSINESS ADMINISTRATION

Modern business has reached that stage where internal and external economies must be realized. The industrial management of today seeks to reduce waste in materials and labor, and to promote the most effective organization of the factors of production. Such a task requires not only special knowledge, but also vision of the highest order. Accounting, statistics, labor efficiency, resources, credit, insurance, business law and organization are necessary parts of the industrial structure; psychology, sociology, government, ethics and history constitute the background of industrial stability.

The establishment of a well-ordered plant is the basis of a strong position in production; there remains the problem of successfully moving the product to the consumer. Markets are no longer local, but national and even international. Every business man has occasion to study salesmanship, advertising, transportation routes and rates, banking, exchange, tariffs

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<sup>1</sup> Absent on war service.

and government regulation. The more extended state control of industry is especially necessitating unusual ability to co-operate.

The College of Business Administration aims to train students to meet the specific and general problems of modern industry.

### ADMISSION TO THE COLLEGE OF BUSINESS ADMINISTRATION

For admission to the College of Business Administration 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:

- 8 units of English
- 1 unit of Algebra
- 1 unit of Plane Geometry
- 2 units of History (American or Modern History preferred)
- 8 units selected from subjects accepted by an approved high school for its diploma. (For admission to the College of Business Administration only, a maximum of 8 units in commercial subjects will be accepted. Only 4 of these will be counted, if the student is transferred later to any other college of the University.)

### ADDITIONAL REQUIREMENTS

The faculty of the College of Business Administration reserves the right to ask for additional work from students who present such irregular or specialized credit as to constitute an insufficient basis for high standard in their college subjects.

### SPECIAL STUDENTS

Special students will be admitted to the College of Business Administration, subject to the general requirements of the University, and will be admitted to such classes as may be approved by the Director of the College of Business Administration. (See Entrance Information, page 10.)

### DEGREES

The College of Business Administration is a professional College and its graduates will receive the degree of bachelor of business administration. The degree of bachelor of business administration will be conferred upon any student who has fulfilled the entrance requirements and who presents 192 credits in subjects required or approved by the faculty of the College of Business Administration.

The degree of master of business administration will be conferred upon students who continue their work for an additional year, having completed the requirements for the degree of bachelor of business administration. Students will not be advised to do graduate work unless unusual ability has been shown in their previous courses. All graduate work must be

† 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.

selected after a consultation with the instructor in charge of the special department in which the student is interested, and after the approval of the director of the College of Business Administration.

Students entering from other colleges and universities must satisfy not only the general requirements of the University, but also the requirements of the College of Business Administration.

**SCHOLARSHIP REQUIREMENTS**

Not less than three-fourths of the credits required for graduation must be earned with grades of A, B, or C.

**REQUIREMENTS FOR GRADUATION**

All students in the College of Business Administration must have their selection of courses approved each quarter by a member of the College faculty. The College requires that the following courses shall be completed during the first and second years, and suggests the following distribution:

**CURRICULUM**

FRESHMAN YEAR					
<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Economics 1 (Gen. Econ.)	5	Economics (Elem. Acct.)	3	Economics (Elem. Acct.)	3
English	5	English	5	Economics (Econ. Res'ces)	5
Mathematics 11 (Inv.)	5	Mathematics 12 (Inv.)	5	Psychology	5
Mil. Sci. or Phys. Ed.	2	Electives	2	Electives	2
		Mil. Sci. or Phys. Ed.	2	Mil. Sci. or Phys. Ed.	2

SOPHOMORE YEAR					
Risk and Insurance	3	Econ. & Soc. Stand. of Liv.	5	Sociology	5
Money and Banking	5	Business Law	3	Transportation	3
Theo. & Evo. of Markets	3	Philosophy	5	Business Law	3
Business Law	3	Electives	2	Political Science	5
Mil. Sci. or Phys. Ed.	2	Mil. Sci. or Phys. Ed.	2	Mil. Sci. or Phys. Ed.	2

JUNIOR YEAR		<i>Credits</i>
Philosophy (Ethics)	5	5
History	10	10
(Selection of courses subject to approval)		

**SENIOR YEAR**  
 Economic research and seminar, at least 4 credits.  
 (Selection of courses subject to approval)

The requirements of the first two years are made sufficiently broad to establish a foundation for the profession of business, regardless of the particular field in which the student may later be interested. Such a plan permits him to delay the choice of his special field until the junior year.

The program outlined above also aims to keep the student in direct touch with his College, at least one course in Economics being assigned to each quarter. It should be further observed that this program leaves a considerable freedom of selection to the student.

No student shall be allowed to enter the Junior-Senior courses of the College of Business Administration unless he has (a) reached at least Junior standing and (b) satisfied the prerequisites to these courses.

The prerequisites to the Junior-Senior courses have been established after the most careful consideration of (a)—the standard of efficiency and performance aimed at in the course, and (b)—the educational value

which the course might deliver to the student. It has been decided that to admit students who have not completed the carefully arranged prerequisites would imperil not only the quality of the work of the instructor, but also would make it impossible for the students to gain the full benefit of the course. But the College realizes that certain just claims to exceptions from the above rules could be presented, and has decided that exceptions can be granted to those students whose maturity and extended experience in economic affairs of a suitable nature makes it just and reasonable. Proof of these experiences and qualifications shall be passed upon by the director of the College of Business Administration.

The junior and senior years are, in large part, open to the student's selected field of business interest. This does not mean that the student will be free to elect courses regardless of their relation to his field of work. The especial interest of each student or group of students will be under the control of the instructor designated to that department of work, subject to the approval of the director of the College of Business Administration.

The following fields of business training are suggested:

1. Accounting
2. Money and Banking
3. Commercial Teaching
4. Business Organization, Finance and Policies
5. Foreign Trade
6. Transportation
7. Insurance
8. Secretarial Work
9. Marketing and Selling
10. Problems of Labor

#### MODERN LANGUAGE

Any student selecting the field of Foreign Trade or Foreign Banking will be required to present a satisfactory reading knowledge of at least one modern language.

#### LAW

Students selecting their specialty in Accounting, Business Organization, Foreign Trade, or Transportation may be required to take:

- Law of Public Utilities
- International Law
- Law of Bankruptcy
- Law of Contracts

#### EDUCATION

Students desiring to teach commercial subjects must fulfill the requirements of the College of Education relative to the teaching certificate.

#### JOURNALISM

Students who select their major in Marketing may be required to take considerable work in the Department of Journalism. Such courses would be:

- General Advertising
- Advertising for the Small Buyer of Space
- Advertising for the Large Buyer of Space

## GEOLOGY

The Department of Geology offers several courses in Geography which are of direct interest to students interested in foreign and domestic trade. Such students may be required to elect one or more of the following courses:

Physical Geography  
Geography of South America  
Economic Geography of Washington

## TEXT BOOKS—SYLLABUS FEES

Many courses in the College of Business Administration require a text book, and in a few instances more than one. It is the aim of the faculty to keep the text book expense as low as is consistent with a high standard of class work.

In courses where a syllabus is used the College of Business Administration may ask from each student a fee sufficient to cover the expense of material, printing or mimeographing. Under no circumstances will this fee be more than \$1.00 per student for each course.

## LIBRARY FACILITIES

The College is placing in the library a large number of supplementary books. For many years government reports have been filed in the library, which give the student a vast amount of material for his use. Most of the domestic journals in economics and commerce, as well as many foreign ones, are received by the College. Each student is expected to make use of the material and to report from time to time on current topics of interest.

## COMMERCE CLUB HONORARY SOCIETY

A national charter has been granted to the Commerce Club of the College of Business Administration. This club bases its membership upon scholarship and general power of adaptation. It aims to be intellectual and coöperative rather than social. It stands for the profession of business. Each member will be required to present reports on subjects of common and professional interest.

REQUIRED MILITARY SCIENCE AND PHYSICAL  
EDUCATION

The University requirements in military science, physical education and hygiene are satisfied as follows: men students, freshmen and sophomores—eight hours of military science per week. Juniors and seniors—two hours of physical education per week.

Women students: physical education, three times per week for two years.

## CORRESPONDENCE

Inquiries in regard to the College of Business Administration may be addressed to the director of the College. All correspondence regarding admission should be sent to the registrar of the University.

# School of Journalism

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## THE FACULTY

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

JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.

<sup>1</sup>COLIN VICTOR DYMENT, B. A. (Toronto), Professor of Journalism, DIRECTOR.

FREDERIC ARTHUR RUSSELL, PH. D. (Illinois), Assistant Professor of Journalism and Acting Director of the School of Journalism.

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

FRANCIS PATRICK GOSS, Assistant Professor of Journalism.

GRACE HARTLEY EDGINGTON, A. B. (Oregon), Associate in Journalism.

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LESLIE JAMES AYER, B. S., J. D. (Chicago), Lecturer on Newspaper Jurisprudence.

HORACE HARDY LESTER, PH. D. (Princeton), Instructor in Newspaper Photography.

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## ORGANIZATION AND EQUIPMENT

The first courses in journalism in the University of Washington were given in 1907. A department of journalism was established in 1909. In March, 1918, the department was formally made a school. Journalism and printing take up the entire lower floor of Commerce Hall, 208 by 70 feet, which was first occupied in September, 1917. The University of Washington Daily is published in these quarters. Classrooms, exchange room, journalism library, faculty offices, University of Washington Daily quarters, newswriting room, Tyee quarters, all the mechanical equipment for teaching practical journalism, and the printing stockroom, are on this floor. The Department of Printing does nearly all of the University work.

## FREDERICK A. CHURCHILL JUNIOR MEMORIAL LIBRARY

In March, 1918, a separate journalism library was opened, to be known as the Frederick A. Churchill Junior Memorial Library, in memory of a brilliant student of the School who died in 1916 while doing newspaper work in New York. The Memorial Library contains works relating to all phases of the editorial side of the newspaper, to advertising, to printing, to short story, and to current events.

## ADMISSION TO THE SCHOOL OF JOURNALISM

For entrance to the School of Journalism as majors, students must present a minimum of 10 $\frac{1}{2}$  quarter-hours of credit from the University of Washington, or an equivalent amount from some other institution of accredited standing, covering the requirements of the Junior Certificate. In a few cases, persons of maturity and with practical experience, who do not have this foundation, may be admitted as special students on complying with the regulations for the admission of special students. (See Entrance Information, pages 10-11.)

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<sup>1</sup> Absent on war service.

REQUIREMENTS FOR GRADUATION

The curriculum of the School of Journalism leads to the degree of bachelor of arts (A. B.), for which degree 180 quarter-hours must be obtained, plus 12 hours in physical training or military science. Sixty of these hours must be in journalism, and a minimum of 90 plus 12 hours must have been earned before the student is enrolled in the School of Journalism, and a minimum of 84 after the student has been given junior standing.

CURRICULUM

The requirements for the degree of bachelor of arts from journalism majors are (inclusive of the work required for admission to the School of Journalism) as follows:

The required subjects of the College of Liberal Arts, which total 102 hours, but which are in most cases covered in part in high school, the estimated average remaining for the University being .....	65
A minimum of nine hours of advanced work in English or oriental literature (in excess of the requirement in freshman composition) .....	9
A minimum of 12 hours of advanced work (i. e. in excess of the junior certificate requirements) in each of three of the following: accounting, economics, history, philosophy, political science, psychology, sociology .....	36
(Provided, however, that four courses in addition to the junior certificate requirements in either a modern foreign language, an ancient language, both in the original, or a science, will be accepted in lieu of the 12 hours in any of the seven subjects described in the preceding paragraph.)	
A minimum of three hours in business law .....	3
Journalism .....	60
Unprescribed electives .....	19
Physical science or military training .....	12
<b>Total .....</b>	<b>204</b>

NOTE.—Business law counts one credit toward the required 60 in journalism because it includes the law of the newspaper. Freehand drawing counts three credits toward the 60 in the cases of students who are preparing for illustrating or cartooning.

FEEES

In certain journalism courses a laboratory fee of \$2.00 or less is charged. This fee goes toward the purchase of the community journalism typewriters, of which the School now has twelve; toward newspaper and periodical subscriptions, of which the School annually takes about fifty, in addition to the large number of weeklies that come to the desk on exchange; toward the purchase of textbooks; and toward the purchase of student materials. The number of courses carrying these fees varies from year to year. In 1917-1918 the maximum laboratory fees to all or any student were \$4.00, regardless of the number of courses taken. In addition, the regular university fees are charged.

## GRADUATES OF THE DEPARTMENT

Journalism graduates have always been in demand among the newspapers of the state. The demand to date has exceeded the supply to such an extent that it has been a practice to send out students before they had completed their course. Ultimately it is hoped the School may meet the demand with graduates only.

## UNIVERSITY OF WASHINGTON DAILY

Ownership of the University of Washington Daily is vested in the student body. The Daily is not supervised by the School of Journalism. Most of the staff, however, are majors in journalism. An editor is elected twice each year, and he selects his own staff; a business manager is appointed by the student board of control and selects his staff.

## PURPOSES OF THE SCHOOL OF JOURNALISM

The final two years of work, in combination with many prescribed courses in other departments of the Colleges of Liberal Arts and Science, are intended to equip the student for practical journalism:

1. By giving him training on (a) the editorial side of publishing, with its several occupations; on (b) the business and administrative side; in (c) the mechanics of publishing; in (d) short story.
2. By developing the broader scholarship that is almost indispensable in modern journalism in addition to mere technical knowledge.
3. By building up character for journalism.

## DEPARTMENTS OF INSTRUCTION

## COLLEGES OF LIBERAL ARTS, SCIENCE, EDUCATION, BUSINESS ADMINISTRATION, LIBRARY SCHOOL AND SCHOOL OF JOURNALISM

The University reserves the right to withdraw temporarily any course which has not an adequate enrollment at the end of the sixth day of any quarter. For changes in registration, due to the withdrawal of a course, no fee will be charged.

The four-quarter plan was adopted in order to enable the University to render larger service. It is more flexible than the semester plan, besides adding twelve weeks' instruction to the regular year. It is impossible, however, to provide that every course be given every quarter.

The departments of these six colleges and schools are arranged in alphabetical order.

Courses bearing numbers 1 to 99 inclusive are normally offered to freshmen and sophomores; those from 100 to 199, to juniors and seniors; and those from 200 upward to graduate students.

Two or three numbers connected by hyphens indicate a course which ordinarily carries credit only when pursued for the full time; the instructor's permission must be obtained for credit for only a single quarter of such a course. No credit in a beginning foreign language is given for less than two quarters' work.

The credit indicated in connection with each course is the "quarter credit," being based on the class periods per week.

## ANATOMY

## Science Hall and Anatomy Laboratory

ASSISTANT PROFESSOR WORCESTER, ASSISTANT PROFESSOR SMITH

## GROSS ANATOMY

101-102-103. GENERAL HUMAN ANATOMY. Six credits per quarter. First, second and third quarters. Prerequisites, Zoology 3 and 4 or their equivalent. Especially intended for students taking the pre-medical, nurses' or physical education courses, but open to others. WORCESTER.

A thorough study of the human body. The dissecting material is prepared after the most modern methods. Osteological collections are loaned to the students.

104. TOPOGRAPHIC ANATOMY. Four credits per quarter. First quarter. Prerequisites, Anatomy 101, 102 and 103. Cross and sagittal sections for correlations. WORCESTER.

## MICROSCOPIC ANATOMY

105-106. HISTOLOGY AND EMBRYOLOGY. Five credits per quarter. First and second quarters. Prerequisite, Zoology 3 and 4 or their equivalent.

# 1 - Anatomy for nurses 6 cr Worcester Winter  
 2 Hist of nursing 2 cr Bartlett Winter  
 3 Nursing - hospital 2 cr Bartlett Winter

lent. Especially for students in pre-medical courses and nurses' courses but open to others. WORCESTER.

The microscopic anatomy of developing and adult mammals studied in both their fresh and fixed conditions.

107. NEUROLOGY. Five credits per quarter. Third quarter. Prerequisites, Anatomy 105 and 106 or their equivalent. Especially for pre-medical students, but open to others. SMITH.

The dissection of the human brain and cord and special organs of sense. Also the comparative developmental history of the central nervous system, followed by a microscopic study of the nuclei and fiber tracts.

## ASTRONOMY

### The Observatory

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.

Courses 1, 2, 11 and 12 satisfy the fourth science requirement in the College of Science if the student elects all ten hours in one science. Courses 1 and 11 satisfy one-half of this requirement if the student elects astronomy and geology.

#### REQUIREMENTS FOR A MAJOR IN ASTRONOMY

36 credits. Reinforcing subjects of not more than 48 credits selected from mathematics, physics, chemistry, and geology are recommended.

Astronomy 24, 25 are of immediate application to war or war industries.

#### COURSES

1. INTRODUCTION TO ASTRONOMY. Two credits per quarter. <sup>course</sup> First and third quarters. Four laboratory periods per week. Laboratory deposit, \$1.00. BOOTHROYD.

A course designed to give a familiar acquaintance with the principal stars and constellations visible during the time when the course is taken as well as to give the student the ability to use a star map and identify any object in the heavens. When the weather is such as not to allow of actual observations, the globes and planetarium will be studied. The equatorial and other equipment of the observatory will be used for illustration and demonstration.

2. LABORATORY ASTRONOMY. Two credits per quarter. <sup>Spring</sup> Second quarter. Prerequisite, course 1. Four laboratory period per week. Laboratory deposit, \$1.00. BOOTHROYD.

A study of planetary motions and orbits observations with the universal instrument, and the equatorial and study of variable stars.

11. **THE SOLAR SYSTEM.** Three credits per quarter. <sup>and</sup> First and third quarters. Three lecture and recitation periods per week. Prerequisite: must be preceded or accompanied by course 1 or its equivalent. BOOTHROYD.

An elementary study of the solar system as a whole, of its individual planets and their satellite systems, of the comets and meteors, including a brief study of the methods by which mankind has attained a knowledge of astronomical facts and principles.

12. **THE SUN AND STARS.** Two credits per quarter. <sup>Sp</sup> Second quarter. Prerequisite, course 2. Three lecture and recitation periods per week. BOOTHROYD.

A study of our sun as a typical star accompanied by a study of the elementary principles of spectroscopy and followed by a brief study of stars, nebulae, star clusters and the general problems of stellar astronomy.

21. **ENGINEERING ASTRONOMY.** Three credits per quarter. <sup>r<sup>3</sup></sup> Second quarter. Prerequisite, Math. 52 and C. E. 21. Four laboratory periods per week. Laboratory deposits, \$1.00. BOOTHROYD.

An elementary course designed to give the student the ability to determine time, latitude and azimuth from observations on the sun and stars with the surveyor's transit.

22. **GEODETIC SURVEYING.** Two credits per quarter. <sup>Sp</sup> First quarter. Prerequisite, Math. 52 and C. E. 21. Four laboratory periods per week. Laboratory deposit, \$1.00. BOOTHROYD.

Precise surveying methods and elements of geodesy, mapping and map projection. A course especially for engineers who desire a knowledge of precise surveying methods such as are used in city surveying work and in geodetic surveys.

23. **NAUTICAL ASTRONOMY.** Three credits per quarter. Second quarter. Prerequisite, Math. 52. One recitation and four laboratory periods per week. Laboratory deposit, \$1.00. BOOTHROYD.

An elementary course emphasizing the elements of nautical astronomy. Designed for navigators to give reasonable facility in the use of the sextant and in making astronomical observations and reductions necessary in navigating a ship.

24-25. **NAVIGATION.** (War Course.) Five credits per quarter. <sup>Sp</sup> First and second quarters. Repeated again third and fourth quarters if there is sufficient demand for the course. Five laboratory periods per week for two quarters. Laboratory deposit, \$2.00 per quarter. BOOTHROYD.

Review of trigonometric definitions, spherical geometry and logarithms. Study of ship compass and other instruments. Elements of navigation, piloting, the sailings and dead reckoning, use of charts and nautical almanac, use of sextant and chronometer, conversion of time. Nautical astronomy, the new navigation, naval regulations, etc.

31. **HISTORY OF ASTRONOMY.** Three credits per quarter. <sup>Sp</sup> Second quarter. Prerequisite, course 2, 12, Hist. Three lecture and recitation periods per week. BOOTHROYD.

Primarily this is an exposition of the evolution of the scientific method as illustrated by the historical development of astronomy.

†101. **GEODETIC ASTRONOMY.** Five credits per quarter. First quarter. Prerequisite, courses 2, 12 or 21, 22, and Math. Two lecture and six laboratory periods per week. Laboratory deposit, \$2.00. **BOOTHROYD.**

Study of the methods used in the precise determination of time, latitude and azimuth, including the study of the astronomical instruments used in such work as well as attainment of proficiency in making and reducing the observations.

†102. **GEODESY.** Five credits per quarter. Third quarter. Prerequisite, courses 22, 101. Five lecture periods per week. **BOOTHROYD.**

Figure of the earth, geodetic positions, gravity determination and isostasy. Adjustment of triangulation systems.

\*103-104-105. **PRACTICAL ASTRONOMY.**

\*201-202-203. **CELESTIAL MECHANICS.**

\*204-205-206. **THEORETICAL ASTRONOMY.**

## BACTERIOLOGY

Science Hall

PROFESSOR WEINZIRL, MR. MASKE

All the courses in bacteriology are essentially applied: (a) medicine, (b) sanitation and (c) industry. Laboratory work forms an important part of nearly all bacteriological courses.

### SUGGESTED ELECTIONS

For pre-medical students: 103, 109, 110 are required.

For nurses: 4, 102, 103, 109, 110 as electives.

For pharmacy and home economics students: 5 is required. Instead of course 5, a one-year course may be elected when 102, 103, 109 or 110 is taken.

For hygienic training: 4, 102, 103, 109, 110 are offered as electives.

For chemical engineering students: 103, 104, 111, 113 are suggested.

For students who desire to become army bacteriologists: 103, 104, 109, 110, 111, 113.

For a major: 103, 104, 109, 110, 207, 209.

Bacteriology 4, 5 are of immediate application to war or war industries.

*COURSES*  
 3. *Elementary Bact. for nurses* 3 cr with Wargard  
 4. **PERSONAL HYGIENE.** (War Course.) Three credits per quarter. Third quarter. Three lectures per week. Prerequisite, the elements of human physiology.

5. **ELEMENTARY BACTERIOLOGY.** (War Course.) Five credits per quarter. Third quarter. Three recitation and two three-hour laboratory

\* Not offered in 1918-1919.

† Will be offered providing at least six students apply for the course.

periods per week. Prerequisite, sophomore standing. Laboratory deposit, \$3.00.

A general course intended primarily for home economics and pharmacy students. Among the important phases of bacteriology which will be covered in this course are: general technique, antiseptics, disinfectants, sterilization, epidemiology, prophylaxis and treatment of the common diseases, special emphasis upon vaccine, bacterin and serum therapy.

\* 102. PUBLIC HEALTH. Two credits per quarter. First quarter. Two recitations per week. Prerequisite, junior standing.

The conservation of health through public agencies. This course is designed primarily for students not majoring in science, but who desire to have knowledge of the applications of bacteriology and related public health agencies.

103. GENERAL BACTERIOLOGY. Four credits per quarter. First quarter. Two recitations and two three-hour laboratory periods per week. Prerequisite, sophomore standing for bacteriology majors; junior standing for all others, a general knowledge of chemistry and biology is required, while organic chemistry is desirable. Laboratory deposit, \$3.00.

A general course, including a study of the structure, functions and distribution of bacteria, methods of growing them; study of antiseptics and disinfectants; elements of water and milk analysis; introduction to medical bacteriology.

104. SANITARY BACTERIOLOGY. Four credits per quarter. Second quarter. Two recitations and two three-hour laboratory periods per week. Prerequisite, course 103 or its equivalent. Laboratory deposit, \$3.00.

A brief survey of disease bacteria. Most of the time is devoted to sanitation and industry. Inspection trips.

\*106. HOUSEHOLD BACTERIOLOGY.

\*107. ADVANCED HOUSEHOLD BACTERIOLOGY.

109. MEDICAL BACTERIOLOGY. Four credits per quarter. Second quarter. Two recitations and two laboratory periods per week. Prerequisite, course 103 or its equivalent. Laboratory deposit, \$3.00.

Study of the pathogenic bacteria, yeasts and molds; bacterial diagnosis and therapy. Special attention will be given to United States Army laboratory methods.

110. CLINICAL DIAGNOSIS. Four credits per quarter. <sup>Fall</sup> Second quarter. Two recitations and two laboratory periods per week. Prerequisite, course 109. Laboratory deposit, \$3.00.

A general course in infection, resistance and immunity. A practical course in clinical diagnosis, consisting of the pathology of blood, sputum, urine, gastric contents, feces, intestinal parasites, transudates, exudates; practical work in the more common serum reactions, including the Wassermann reaction. Special attention will be given to United States Army laboratory methods.

Hygiene for Spring Wenzel  
 111. BACTERIOLOGICAL ANALYSIS.

\*118. SANITARY PROBLEM.

209. RESEARCH. Time and credit to be arranged. Open to qualified students after consultation. *all 3 qtrs*

## BOTANY

### Science Hall

PROFESSOR FRYE, ASSISTANT PROFESSORS RIGG, HOTSON, MISS CLARK, MR. MARTIN, MISS GRIFFITHS, MISS SPAULDING, MISS SMITH

#### SUGGESTED SELECTIONS

For the required science in the Colleges of Liberal Arts and Science only courses 1, 2, 3, 11, 12, 105, 106 will be accepted.

For a major: courses 105, 106, 140, 141, 142, 143, 144, 145, of which 105 and 106 are required unless 11 and 12 were taken in the freshman year.

For teaching botany: 3, 105, 106, 140, 141, 142, 143, 144, 145.

For pharmacy students: 13, 14.

For forestry students: 11, 12, 140, 141, 142, 143, 144, 145.

Botany 26, 107 are of immediate application to war or war industries.

Botany 11, 12, are prerequisites to these courses.

#### COURSES

1. ELEMENTARY BOTANY. Five credits per quarter. First quarter. FRYE, RIGG, ASSISTANTS

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. Five credits per quarter. Second quarter. Open to students entering the second quarter without any previous botany work. FRYE, RIGG, ASSISTANTS.

Types of the great groups of plants from the lowest to the highest.

3. ELEMENTARY BOTANY. Five credits per quarter. Third quarter. Open to students entering the second quarter without any previous botany FRYE, RIGG, ASSISTANTS.

Plant analysis. Field work. Aims to get students familiar with the local flora.

8. ECOLOGY AND TAXONOMY. Two to four credits per quarter. First quarter. A course for city teachers. Laboratory deposit, \$1.00. FRYE.

Field trips every other Saturday with noon campfire talks. Study of the fall plants. FRYE.

9. ECOLOGY AND TAXONOMY. Two to four credits per quarter. Second quarter. Similar to course 8. Study of the evergreen and lower plants. Laboratory deposit, \$1.00. FRYE.

10. **ECOLOGY AND TAXONOMY.** Two to four credits per quarter. Third quarter. Similar to course 8. Study of the spring plants. Laboratory deposit \$1.00. **FRYE.**

11-12. **FORESTERS' BOTANY.** Five credits per quarter. Second and third quarters. For forestry students. Prerequisite, course 1. Laboratory deposit, \$2.00. **HOTSON, Assistant.**

A study of types of plants to illustrate the advances in complexity.

13-14. **PHARMACY BOTANY.** Five credits second quarter, four credits third quarter. **RIGG.**

Gross structure of vegetative and reproductive parts of seed plants. Brief study of spore plants. Microscopy of powdered drugs.

26. **SCHOOL GARDEN.** (War Course.) Five credits per quarter. Third quarter. Prerequisite, courses 1, 2 or 10. **HOTSON.**

105-106. **MORPHOLOGY AND EVOLUTION.** Five credits per quarter. First and second quarters. Required of all majors unless courses 11 and 12 were taken in the freshman year. Prerequisite, course 2 or 10, or Zool. 1 and 2, sophomore standing, or senior standing without prerequisites. Laboratory deposit, \$1.00. **FRYE, ASSISTANTS.**

A morphological study of types to show advances in complexity; the principles upon which advance is based; the general line of evolution.

107. **ELEMENTARY PATHOLOGY.** (War Course.) Five credits per quarter. Third quarter. Prerequisite, course 11 or 105. Laboratory deposit, \$2.00. **HOTSON.**

The recognition and treatment of common plant diseases.

119. **PLANT HISTOLOGY.** Five credits per quarter. Prerequisite, course 12 or 106. **FRYE.**

Preparation of slides for the compound microscope. Study of plant tissues, and their origin.

137. **JOURNAL CLUB.** No credit. First, second and third quarters. One meeting per week at time to be arranged. Prerequisite, junior standing; two years of botany. **FRYE.**

Review of articles in current journals. Suggested for all seniors, graduates and instructors in the department.

140, 141, 142. **GENERAL FUNGI.** Five credits per quarter. First, second and third quarters. Prerequisite, course 11 or 105, junior standing. Laboratory deposit, \$2.00. **HOTSON.**

Morphology and classification of fungi; designed as a basis for plant pathology.

143, 144, 145. **PLANT PHYSIOLOGY.** Five credits per quarter. First, second and third quarters. Prerequisite, two quarters of botany, Chem. 21, junior standing. **RIGG.**

200. **PROSEMINAR.** Credit to be arranged. First, second and third quarters. Semi-independent work by students. **FRYE, HOTSON, RIGG.**

233. **RESEARCH.** Credit to be arranged. First, second and third quarters. **FRYE, RIGG, HOTSON.**

250. **ALGAE.** Five credits per quarter. First, second or third quarter. Prerequisite, courses 105, 106, or 11, 12. **FRYE.**

251. **BRYOPHYTES.** Five credits per quarter. First, second or third quarter. Prerequisite, courses 105, 106, or 11, 12. **FRYE.**

252. **PTERIDOPHYTES.** Five credits per quarter. First, second or third quarter. Prerequisite, courses 105, 106, or 11, 12. **FRYE.**

253. **GYMNOSPERMS.** Five credits per quarter. First, second or third quarter. Prerequisite, courses 105, 106, or 11, 12. **FRYE.**

254. **ANGIOSPERMS.** Five credits per quarter. First, second or third quarter. Prerequisite, courses 105, 106, or 11, 12. **FRYE.**

261, 262, 263. **PLANT PATHOLOGY.** Five credits per quarter. First, second and third quarters. Prerequisite, courses 1, 142. **HOTSON.**

A study of the diseases of plants and the fungi which produce them.

271. **EXPERIMENTAL MORPHOLOGY.** Five credits per quarter. First, second or third quarter. Prerequisite, course 12 or 106, 1 year chemistry, junior standing. **FRYE.**

279. **COLLOIDAL BIOLOGY.** Five credits per quarter. First, second or third quarter. Prerequisite, course 143; Chemistry 32, senior standing. **RIGG.**

280. **MICROMETABOLISM.** Five credits per quarter. First, second or third quarters. Prerequisite, Botany 12 or 106, 143, senior standing. **RIGG.**

**NOTE.** Only a limited number of courses 250-280 will be given in any one quarter.

## CHEMISTRY

Bagley Hall

PROFESSORS BYERS, BENSON; ASSOCIATE PROFESSORS DEHN, ROSE; ASSISTANT PROFESSORS TRUMBULL, HEATH, TARTAR, DR. LANGDON, MISS JENCKS, MRS. DAVIS, MR. CAVE, MR. HUFF, 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, 23, 31, 32, 33 and 101, 102, or their equivalents.

The deposit for each laboratory course is seven dollars per quarter. This deposit covers the materials actually consumed in the laboratory and

<sup>1</sup> Absent on war service.

with care provides the student for a full quarter's work. Any portion of the deposit not used will be refunded.

## COURSES

*15. 35. gen. chem.*

1, 2, 3, GENERAL CHEMISTRY. Five credits per quarter. First, second and third quarters. Three lectures and two laboratory periods per week. Open only to students who have had no high school chemistry.

The first two quarters are devoted to general chemistry and the chemistry of the non-metals; the third quarter to the chemistry of the metals. The laboratory work of the third quarter is qualitative analysis. LANGDON AND ASSISTANTS.

8, 1, 2. GENERAL CHEMISTRY. Five credits per quarter. Third, first and second quarters.

A repetition of the course described above. LANGDON and Assistants.

SC 4. GENERAL CHEMISTRY. <sup>4</sup> No credit. Second quarter. Three lectures and one four-hour laboratory period per week. BENSON.

A course designed for the short course miners.

SC 7 Short course for miners 5 cr Bachelor Winter + Sp

5, 6. GENERAL CHEMISTRY. Five credits per quarter. First and second quarters. Three lectures and two laboratory periods per week. TARTAR. A course designed for the student in the Department of Home Economics. Only women are admitted.

8, 9, 10. GENERAL CHEMISTRY. Five credits per quarter. First, second and third quarters. Three lectures and two laboratory periods per week. HEATH.

A course designed especially for students in the College of Pharmacy.

\*11, 12. CHEMISTRY OF COLORS.

21, 22, 23. GENERAL CHEMISTRY. Five credits per quarter. First, second and third quarters. Prerequisite, accredited high school course in chemistry. Three lectures and two laboratory periods per week. LANGDON AND ASSISTANTS.

A course designed for students who have had a high school course in chemistry, and especially for students of the Colleges of Science and Engineering. The third quarter is devoted to elementary qualitative analysis. This course is repeated beginning the third quarter and continuing for three quarters.

22, 23, 21. GENERAL CHEMISTRY. Five credits per quarter. First, second and third quarters. TARTAR.

A repetition of the course described above.

31, 32, 33. ORGANIC CHEMISTRY. Five credits per quarter. First, second and third quarters. Prerequisite, course 3 or its equivalent. Three lectures and two laboratory periods throughout the year. DEHN.

A course covering the fundamentals of organic chemistry as thoroughly as the time limit permits. Designed particularly for majors in chemistry and for students preparing for medicine.

\* Not offered in 1918-1919.

315 Organic was course

35, 36. ORGANIC CHEMISTRY. Four credits per quarter. First and second quarters. Prerequisite, course 7 or its equivalent. Two lectures and two laboratory periods per week. DEHN.

A course designed primarily for the students in the Department of Home Economics. Only women are admitted.

38, 39. ORGANIC CHEMISTRY. Five credits per quarter. First and second quarter. Prerequisite, course 10 or its equivalent. Three lectures and two laboratory periods per week through two quarters. HEATH.

A course designed especially for students of the College of Pharmacy.

41S *qualitative analysis* *counts* *Carbon*  
48. QUALITATIVE ANALYSIS. Five credits per quarter. Second quarter. Prerequisite, course 23 or its equivalent. Two lectures and three laboratory periods per week. LANGDON.

A course in advanced qualitative analysis designed for chemists and engineers. The detection and identification of rare elements is an essential part of the course. The theory of analytical operations forms an important part of the class work.

\*51. ENGINEERING CHEMISTRY. Three credits per quarter. Third quarter. Prerequisites, course 8 or 23. Two lectures and one laboratory period per week. BENSON.

101, 102. QUANTITATIVE ANALYSIS. Four credits per quarter. Second and third quarters. Course 101 is repeated in the third quarter. Prerequisite, course 48. One lecture and three laboratory periods per week. HEATH.

A course in the elements of gravimetric analysis and volumetric methods.

*7u + Sp*  
103. ADVANCED QUANTITATIVE ANALYSIS. Four credits per quarter. First and third quarters. Prerequisite, course 102. Four laboratory periods per week. HEATH.

A course dealing with the complete analysis of minerals and the commercial analytical methods.

*under*  
111, 112, 113. FOOD ANALYSIS. Four credits per quarter. First, second and third quarters. 111 is repeated in the third quarter for students in the department of Home Economics. JOHNSON.

*under*  
\*121, 122, 123. INDUSTRIAL CHEMISTRY. Five credits per quarter. First, second and third quarters. Prerequisite, course 102. Three lectures and two laboratory periods per week. BENSON.

\*133. SANITARY CHEMISTRY. Three credits per quarter. First quarter. Prerequisite, course 101. Two lectures and one laboratory period per week. BENSON.

A study of materials and processes used in the purification of water and sewage, and in sanitation.

\* Not offered in 1918-1919.

52 S. Chem of explosives *over course*  
101 S. quantitative *chem course*

\*185. FOREST PRODUCTS. Three credits per quarter. First quarter. Prerequisite, course 8 or 28. Two lectures and one laboratory period per week. BENSON.

A study of wood distillation, tannin, wood pulp, alcohol, viscose, vulcanized fiber and wood oils.

\*186. ROAD MATERIALS. Two credits per quarter. Third quarter. Prerequisite, course 8 or 28. One lecture and one laboratory period per week. BENSON.

<sup>F W Sp</sup>  
141, 142, 143. PHYSIOLOGICAL CHEMISTRY. Five credits per quarter. First, second and third quarters. Prerequisite, course 88 or 102. Three lectures and two laboratory periods per week. DEHN.

<sup>Sp</sup>  
144. PHYSIOLOGICAL CHEMISTRY. Four credits per quarter. Third quarter. Prerequisite, course 86. Two lectures and two laboratory periods per week. DEHN.

A special course designed for students in the Department of Home Economics.

\*146. URINARY ANALYSIS. Two credits per quarter. Third quarter. Prerequisite, course 88. DEHN.

<sup>F</sup>  
201, 202. PHYSICAL CHEMISTRY. Five credits per quarter. First and second quarters. Prerequisite, Physics 1-2. TARTAR.

An elementary course dealing with the fundamental theories of chemistry based upon physical measurements.

\*203. ADVANCED PHYSICAL CHEMISTRY. Five credits per quarter. Third quarter. Prerequisite, course 201. Three lectures and two laboratory periods per week. TARTAR.

A course on chemical statics and dynamics.

<sup>F</sup>  
\*204. ELECTRO CHEMISTRY. *written over Byers*

<sup>F</sup>  
\*211. INORGANIC PREPARATIONS. *Sp " "*

\*212. ORGANIC PREPARATION.

250. RESEARCH. Credit to be arranged. First, second and third quarters.

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 nine 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, nine hours. Third, research for the doctor's degree. Maximum credit, forty-five 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.

\* Not offered in 1918-1919.

221 - Chem Theory 2 cr Byers W + Sp  
231 adv organic 2 cr Dehn W + Sp

## CLASSICAL LANGUAGES AND LITERATURE

Denny Hall

PROFESSOR THOMSON, ASSOCIATE PROFESSOR SIDEY, ASSISTANT  
PROFESSORS DENSMORE, CLARK

Requirement for a major: at least 36 hours in the Department, chosen from courses other than Greek 11 and 13-14; Latin, 1, 2, 3; 11; 14-15-16. A student specializing in Greek must take at least nine hours of Latin; one specializing in Latin must take at least ten hours of Greek.

## COURSES

## I. GREEK

1-2-3. **ELEMENTARY GREEK.** Five credits per quarter. First, second and third quarters. **SIDEY.**

Immediate introduction into translation of choice excerpts from a wide range of Greek authors such as Menander, Euripides, Theognis, Plato, Herodotus, the Anacreontics, the New Testament. Emphasis on the essentials of grammar, memorization, dictation and story writing. An especial effort will be made to give students who take but one year of Greek an appreciation of its spirit and its bearing on the English language.

4-5. **THE WORLD OF HOMER AND HESIOD.** Three credits per quarter. First and second quarters. Illustrated lectures, conferences and reports. Prerequisite, one year of Greek. **DENSMORE.**

The epic age as seen in Homer and supplemented by archaeological discoveries, followed by a study of the renaissance of the Greek world in the period of lyric poetry, scientific investigation and political development.

6. **HERODOTUS.** Three credits per quarter. Third quarter. Prerequisite, course 4-5. A study of the Persian war period. **DENSMORE.**

\*7. **NEW TESTAMENT.**

\*8-9-10. **GREEK ART.**

11. **GREEK CIVILIZATION.** Five credits per quarter. First or second quarter. Illustrated lectures, conferences and discussions. **DENSMORE.**

An institutional and cultural survey of the Greek world from the earliest times to the Roman conquest.

12. **ADVANCED GREEK CIVILIZATION.** Five credits per quarter. Third quarter. Conferences and discussion groups. Prerequisite, course 11 or junior standing. **DENSMORE.**

A continuation of the problems raised in course 11, with particular attention to their development in modern times.

13-14. **GREEK AND ROMAN LITERATURE.** Five credits per quarter. First, second and third quarters. **SIDEY.**

The course extends through two quarters, considerably more than half the time being devoted to Greek Literature. The chief masterpieces will be

studied in English translations with special attention to Homer, the Greek dramatists, Plato, Lucretius, Vergil and Cicero. A knowledge of the Greek or Latin is not required.

<sup>4</sup>101-102-103. THE PERICLEAN AGE. Three credits per quarter. First, second and third quarters. Prerequisite, courses 4-5. DENSMORE.

An intensive study of all the most important phases of Greek civilization from the founding of the Delian Confederacy to the death of Socrates. Readings from Sophocles, Euripides, Aristophanes, Thucydides, Xenophon, Plutarch, Plato; conferences and reports.

<sup>7</sup>104-105-106. GREEK POETRY. Two credits per quarter. First, second and third quarters. Prerequisite, course 4-5. DENSMORE.

Lyric poetry, closer attention to tragedy than is possible in courses 101 to 103, and pastoral poetry. Especial emphasis on Sappho, Sophocles and Theocritus.

\*107-108-109. GREEK PROSE.

<sup>7</sup>201-202-203. PLATO. Three to five credits per quarter. First, second and third quarters. Prerequisite, courses 101-103. DENSMORE.

An intensive study of the Republic, the Laws in parts and some of the shorter dialogues.

GREEK HISTORY. (See History 17.)

## II. LATIN

<sup>7</sup>1, 2, 3. INTERMEDIATE READING. Three credits per quarter. First, second and third quarters. Prerequisite, two years' of high school Latin.

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.

<sup>7</sup>4. OVID. Three credits per quarter. First quarter. Prerequisite, three and one-half years of high school Latin. THOMSON.

Selections, chiefly from the *Metmorphoses*, with some study of the same myths as they appear in English literature.

<sup>6</sup>5. CICERO: DE AMICITIA. Three credits per quarter. Second quarter. Prerequisite, three and one-half years of high school Latin. THOMSON.  
A comparison of Cicero's work with similar essays.

<sup>5</sup>6. CATULLUS. Three credits per quarter. Third quarter. Prerequisite, three and one-half years of high school Latin. THOMSON.

The Latin lyric. Emphasis upon finished translation and comparison of the best English versions.

7, 8, 9. SIGHT TRANSLATION AND COMPOSITION. Two credits per quarter. First, second and third quarters. Prerequisite, three and one-half years of high school Latin. CLARK.

11. **ROMAN CIVILIZATION.** Five credits per quarter. First, second or third quarter. Lectures (illustrated, when possible, by slides) and collateral reading. Reports. 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 modern civilization. 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.

13. **ROMAN LITERATURE.** (See Greek 13-14.)

14-15-16. **ROMAN ART.** One credit per quarter. First, second and third quarters. SIDEY.

This course alternates with that in Greek Art, which will consequently not be given until 1919-1920. Both courses are open to all, but are especially intended for students of Fine Arts. A study of Roman architecture will occupy most of the time of two quarters, followed by sculpture, numismatic and minor arts. Illustrated by photographs and slides.

7  
50. **HORACE AND TIBULLUS.** Three credits per quarter. First quarter. Prerequisite, courses 4, 5, 6, or special permission. THOMSON.  
Selections from the Odes of Horace and from the elegies of Tibullus and Propertius.

4  
60. **LIVY.** Three credits per quarter. Second quarter. Prerequisite, 4, 5, 6, or special permission. THOMSON.  
One book and selections from the other books.

5  
70. **PLAUTUS AND TERENCE.** Three credits per quarter. Third quarter. Prerequisite, courses 4, 5, 6, or special permission. THOMSON.  
Two plays of Plautus and one or two of Terence. A study of the Roman drama and its Greek sources.

7  
100. **CICERO'S LETTERS.** Two credits per quarter. First quarter. Prerequisite, courses 50, 60, or 70. CLARK.  
Selected Letters of Cicero; characteristics of Latin epistolary literature; value of the Letters as a source of information on the political and social conditions of Cicero's day.

4  
101. **PLINY'S LETTERS.** Two credits per quarter. Second quarter. Prerequisite, courses 50, 60, or 70. CLARK.  
Selected Letters of Pliny; comparison of Cicero and Pliny in their letters. Pliny as a corrective of Tacitus in regard to their times. Reading of selections from the famous letters of modern times.

8  
102. **TACITUS' ANNALS.** Two credits per quarter. Third quarter. Prerequisite, courses 50, 60, or 70. CLARK.  
Books I, II will be read as a basis for the study of Tacitus' style, method and altitude as an historian. Tacitus compared with Pliny the Younger.

103-104-105. **TEACHERS' COURSE.** Three credits per quarter. First, second and third quarters. Prerequisite, courses 50, 60, or 70. CLARK.  
Selected portions of Caesar, Bell. Gall. Books V-VII and Bell. Civile; Cicero's Orations and 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.

† \* \*  
106-107-108. PROSE COMPOSITION. Two credits per quarter. First, second and third quarters. Prerequisite, courses 50, 60, or 70. CLARK. Practice in writing continuous discourse. Idioms. Some oral practice.

† 201. MEDIEVAL LATIN.

\* † 202. SENECA.

\* † 208. LATIN SELECTIONS.

## ECONOMICS AND BUSINESS ADMINISTRATION

### Commerce Hall

PROFESSORS MILLER, DE HAAS, ASSOCIATE PROFESSOR CUSTIS, ASSISTANT PROFESSORS McMAHON, LILLY,<sup>1</sup> MUDGEY, TUGWELL,<sup>2</sup> DAHM, MR. ACKERMAN,<sup>2</sup> AND PROFESSOR OGBURN, MR. LAUBE, MR. LAMBUTH, MR. FORMAN, MR. HENDERSON, MR. McCONAHEY AND MR. BAISDEN

Economics 11, 107 are of immediate application to war or war industries.

Economics 1 is prerequisite to these courses.

### 15. Business Course. <sup>War course</sup>

1. GENERAL ECONOMICS. Five credits per quarter. First, second and third quarters. MILLER AND DEPARTMENT STAFF.

Introductory course covering the general principles of economics.

6. RAW MATERIAL RESOURCES OF THE NATIONS OF THE WORLD. Five credits per quarter. Third quarter. BERGLUND.

Attention is given to the agricultural and mineral resources of the principal producing countries of the world. The relationship between the growth of commerce and the development of these resources is also treated. A special study is made of the raw material resources of the countries of the American continent.

7. Bus. Corresp. 3 or 4 credits Russell  
11. ELEMENTARY ACCOUNTING. (War Course.) Five credits per quarter. Second and fourth quarters. DE HAAS.

A study of the way in which accounts should be kept and of their significance.

12. Acct. 3 or 4 credits de Haas  
51. MONEY AND BANKING. Five credits per quarter. First and third quarters. Prerequisite, sophomore standing. CUSTIS.

The nature of money; the part it plays in modern industry; the conditions determining the value of money or the general level of prices; the different kinds of banks and their functions, with special reference to the commercial banks; and the banking system of the United States.

† May not be given in 1918-1919.

<sup>2</sup> Absent on war service.

9 3rd qtr Acct. Sp 3 or T. Home  
10 Econ. of Consumption Sp 2 or McMahon

11 S. elements of Acct. war course

58. THEORY AND EVOLUTION OF THE MARKET. Three credits per quarter. First and third quarters. Prerequisite, sophomore standing. TUGWELL.

This course is introductory to the whole field of marketing; it is a prerequisite to the later more technical courses in market practice. The course opens with a discussion of Early Methods of Exchange, follows the evolution of market forms down to the present; describes the work of the market as it relates to industry and shows the future of public marketing functions.

54 - Salesmanship + Store mgmt. 2 cr Sp Russell

55. ECONOMIC AND SOCIAL STANDARDS OF LIVING. Five credits per quarter. Second quarter. Prerequisite, sophomore standing. McMAHON.

A historical study of modern standards of living in their relation to industrial development, social ideals, and national survival.

56 - Immigration + labor 2 cr Sp McMahon

57. RISK AND INSURANCE. Three credits per quarter. First and third quarters. Prerequisite, sophomore standing. Lectures and readings. MUGGETT.

A study of the risk factor in economic and social life. The nature of risk, as social and individual consequences. Classification of important kinds of risks. Solution of the risk problem: (1) conservation; (2) distribution of losses; uninsurance, its nature and its scientific basis. This course forms the basis for the later study of particular kinds of insurance.

59. ECONOMICS OF TRANSPORTATION. Three credits per quarter. First and third quarters. Prerequisite, sophomore standing. MILLER.

The history of transportation; railway problems in relation to industry and society; the present American railway system and its development; a general survey of railway finance; rate theories and problems; public versus private control of railways; the Interstate Commerce Commission.

61. AMERICAN ECONOMIC HISTORY. Three credits per quarter. Third quarter. Prerequisite, sophomore standing. MILLER.

This course deals with American industrial life from the early colonial period to the present time. The influence of mercantilism in English colonial policy, the relations between the plantation system and the growth of slavery, the effect of the westward movement upon American democracy and the development of large scale production after the Civil War are all studied.

68. HISTORY OF COMMERCE AND COMMERCIAL POLICIES. Three credits per quarter. Second quarter. Prerequisite, course 51. DE HAAS.

The object of this course is to study the evolution of commerce from antiquity to the present time. Changes in the character of commodities carried, in trade routes, transportation agencies, exchange systems, and with public attitude toward trade and the mercantile classes are treated in relation to the growing importance of commerce.

65. ECONOMIC HISTORY OF WESTERN EUROPE. Three credits per quarter. Third quarter. Prerequisite, sophomore standing. McMAHON.

This course takes up the growth of industrial society from an early migratory stage through self sufficing agricultural units, handicraft, domestic and factory systems. The purpose of the course is to show industrial

59S. (Statistics + Transportation (war course))

society in its evolutionary aspect, and to indicate the relationship between economic conditions and social organization and ideals.

**67. MOTIVES IN ECONOMIC LIFE.** Three credits per quarter. First quarter. Prerequisite, sophomore standing. MILLER.

A study in the literature of human behavior, especially in its relations to industrial activity; makes a clinical study of the psycho-pathology of modern economic life, shows the causes for some unrest diseases. The danger in industry from all degrees of psychic abnormality is growing greater. This course is an analysis of symptoms and psychogenesis and makes tentative indications for treatment.

*69 - Office practice 3 cr winter + sp McMahon*  
**101. SOCIAL INSURANCE.** Three credits per quarter. Third quarter. Lectures and readings. Prerequisite, course 57, junior standing. (By arrangement students in sociology may take this course without economic prerequisite. MUDGETT.

Social risks: the hazards of accident, ill health, old age, invalidity and unemployment. Emphasis upon the risk of industrial accident and the development of methods of protection against it: the growth of employers' liability and its failure; workmen's compensation. Health insurance, unemployment insurance, government insurance of soldiers and sailors. Blanchard's *Liability and Compensation Insurance* used as a text.

*102 Typewriting 7 cr W. Thome*  
**108. LIFE INSURANCE.** Three credits per quarter. Second quarter. Lectures and discussions. Prerequisite, course 57, junior standing. MUDGETT.

The life risk and its control through conservation. Functions of life insurance. Old line life insurance: policy contracts and their uses. Scientific basis: calculation of premiums, reserves, loading, surrender and loan values, dividends. Fraternal life insurance, state regulation. Huebner's *Life Insurance* used as a text.

*104 Stollard ? cr 7 + W Thome*  
**105. FIRE INSURANCE.** Three credits per quarter. Second quarter. Lectures and discussions. Prerequisite, course 57, junior standing. MUDGETT.

The fire risk and fire prevention. The policy contract: coverage; loss settlements. The rating function: rating organizations; rating methods. The insuring function: distribution of risks; insurance of the conflagration hazard; insurance carriers. State regulation. Huebner's *Property Insurance* used as a text.

**107. INTRODUCTION TO STATISTICS.** (War Course.) Five credits per quarter. First quarter. Lectures, readings and problems. Prerequisite, sophomore standing. MUDGETT.

The course is designed to develop appreciation for the correct use of, and familiarity with, common methods of collecting and analyzing quantitative data. Standard schedules for the collection of material, methods of tabulation, the use of ratios and averages, and statistical graphics will be studied.

**109. BUSINESS STATISTICS.** Three credits per quarter. Second quarter. Lectures and readings. Prerequisite, course 107, junior standing. MUDGETT.

*90 - see Journ 109 (gen. advertising) sp Russell*  
*80 - Industrial Mgt. 3 cr. sp deHaan*

The use of statistics in the solution of the business man's problems. Business forecasting, or studying the signs of the times. Analysis of business operations: market analysis, sales statistics, advertising statistics and factory statistics. Lectures and readings. Copeland's *Business Statistics* used as a text.

111. PROBLEMS OF MONEY AND BANKING IN TIME OF WAR. Two credits per quarter. Second quarter. Prerequisite, junior standing. CUSTIS.

A consideration of the monetary and banking problems that have arisen out of the war and the way in which the different countries have dealt with them. Special attention will be given to some of the most important current problems as they arise.

113. ECONOMIC PROBLEMS OF THE WAR. Two credits per quarter. First and second quarters. CUSTIS.

This course deals with the various economic problems with which modern nations, and especially the United States and its allies, are called upon to deal. These include such matters as the encouragement of the essential industries, the regulation of transportation, the raising of revenue, and the problems of money and banking. Much attention will be given to current problems as they arise. In case of the establishment of peace attention will be given to the problems of reconstruction.

115. TRUSTS AND COMBINATIONS. Three credits per quarter. First quarter. Prerequisite, junior standing. CUSTIS.

A study of the forms of business organization with special reference to the advantages of each, both from the point of view of the individual concern and from that of the public. Special attention will be given to the higher forms of business organization such as the trust and the pool. This course, though not a prerequisite for the courses in The Regulation of Industry and Fair and Unfair Competition in Business Practice, should be a valuable preliminary study.

\*117. FAIR AND UNFAIR COMPETITION. Three credits per quarter. Prerequisite, junior standing. CUSTIS.

A study of methods of competition with special reference to those methods which are likely to be disapproved by the Federal Trades Commission or the courts. Considerable attention will be given to the effect of these methods in developing industrial efficiency.

119. THE REGULATION OF INDUSTRY. Three credits per quarter. Second quarter. Prerequisite, junior standing. CUSTIS.

Chiefly a study of the policy of the government toward contracts and combinations in restraint of trade. Though attention is devoted in a large measure to the trust problem, it is not confined to it. Consideration is given not only to the question of what policy has been adopted, but to what policy should be adopted, and what regulations should be imposed where combination is permitted.

\*121. FOREIGN EXCHANGE AND FOREIGN BANKING.

\*123. WATER TRANSPORTATION.

125. RAILWAY AND MARINE RATES. Three credits per quarter. Third quarter. Prerequisite, junior standing. MILLER.

A study of cases: The jurisdiction of the Interstate Commerce Commission and the Merchant Marine Board: the reasonableness of rates between persons and places; freight classification; local and commodity tariffs; rate structures.

127. INDUSTRIAL REFORM. Five credits per quarter. Fourth quarter. Prerequisite, junior standing. MILLER.

A philosophical and economic study of individualism, socialism, syndicalism, trade unionism, the single tax and government control.

\*129. SOCIAL STATISTICS.

131. ECONOMICS FOR HIGH SCHOOL, NORMAL SCHOOL AND COLLEGE TEACHERS. Five credits per quarter. Fourth quarter. Prerequisite, junior standing. MILLER.

A course intended for teachers of civics, history and economics. An analysis and discussion of the leading economics problems in relation to allied subjects: selection and criticism of material and texts.

\*133. TRADE OF THE PACIFIC.

135. EXPORTING AND IMPORTING. Three credits per quarter. Second quarter. Prerequisite, junior standing. DE HAAS.

Methods of conducting export and import business. Foreign trade correspondence and advertising. Export commission houses and other sales agencies. Handling shipments. Credits and collections. Analysis of the foreign trade of the United States and other nations. The foreign trade of Washington.

*Ports + Port Facilities 3 cr sp. de Haas*  
\*137. ADMINISTRATIVE CONTROL.

*see 9a-54*  
\*139. SALESMANSHIP AND STORE MANAGEMENT.

\*141. ORGANIZED MARKET EXCHANGES.

*142 - Econ + Business 3 cr Fall Miller*

\*143. MARKETING OF FARM PRODUCTS.

145. WOMEN IN INDUSTRY. Five credits per quarter. First quarter. Prerequisite, junior standing. McMAHON.

A study of the evolution of women's work; their increasing importance in industry; social reactions.

147. LABOR AND IMMIGRATION. Five credits per quarter. Third quarter. Prerequisite, junior standing. McMAHON.

The economic causes of migration; immigrants' importance in the development of modern industry; their relation to the labor organizations, and American standards of living.

*de Haas*  
\*149. HISTORY OF THE AMERICAN LABOR MOVEMENT. 3 cr Sp.

\*151. EMPLOYMENT.

\*153. LABOR LEGISLATION AND ADMINISTRATION.

**\*155. EUROPEAN LABOR MOVEMENT.**

**157. EMPLOYMENT MANAGEMENT.** Three credits per quarter. First and fourth quarters. Prerequisite, junior standing. DE HAAS.

A study of that relation between the employer and the employed which will result in the increased well being and satisfaction of the worker and universal efficiency of production.

**159. BUSINESS ADMINISTRATION.** Three credits per quarter. Third and fourth quarters. Prerequisite, junior standing. DAHM.

The principles according to which the many different kinds of business organizations are conducted. Ownership—types and tendencies; operating organizations—work to be done, departmentalizing, main functions; problems affecting profits of a business; scientific management; study of a number of actual business houses, including bank, steamship line, lumber mill, store, and a Washington factory; trade associations. Field work, singly and in groups, is an important part of the course.

**\*161. EXECUTIVE SECRETARIAL TRAINING. (Survey Course).****\*163. ADVANCED ACCOUNTING. *W. de Haas***

**165. COST ACCOUNTING.** Three credits per quarter. Fourth quarter. Prerequisite, junior standing and elementary and advanced accounting.

This course aims to cover the principal features of manufacturing costs. It will consider valuation theories in the light of court decisions; the use of arbitraries where joint cost prevails, and a consideration of some of the leading systems of uniform accounting.

**\*167. CORPORATION FINANCE.****\*169. INVESTMENTS.**

**171. PUBLIC FINANCE AND TAXATION.** (See Political Science 125).

**173. PROBLEMS IN TAXATION.** (See Political Science <sup>126</sup>~~125~~).

**\*175. MUNICIPAL FINANCE.****\*177. THEORY AND METHOD OF STATISTICS.****\*179. RESEARCH COURSE IN ACCOUNTING AND FINANCE.****\*181. RESEARCH COURSE IN TRANSPORTATION.****\*183. RESEARCH COURSE IN INSURANCE.****\*185. RESEARCH COURSE IN MARKETING.****\*187. RESEARCH COURSE IN <sup>Seminar in</sup> TARIFF AND COMMERCE. *W + Sp de Haas*****\*189. RESEARCH COURSE IN TRUSTS AND MONOPOLIES****\*191. ADVANCED SEMINAR. <sup>190 Seminar in Reconstruction</sup> *W + Sp McMahon***

\* Not offered in 1918-1919.

*225 Pro. Seminar 2 cr<sup>+</sup> Miller de Haas*

## SUBJECTS PRESENTED BY OTHER DEPARTMENTS

**JOURNALISM 109. GENERAL ADVERTISING: BUSINESS WRITING.** Three credits per quarter. Third quarter. Lectures and discussions. Prerequisite, sophomore standing. **RUSSELL.**

Correspondence; sales letters; practice in writing business reports and summaries.

**MATHEMATICS 151, 152, 158. ACTUARIAL THEORY AND PRACTICE.** Three credits per quarter. First, second and third quarters. Prerequisite, one year of college mathematics. **MORITZ.**

Mathematical principles underlying life insurance. Construction and graduation of life tables. Computation of life annuities and life insurance. Various forms of policies and their premiums. Net annual and gross annual premiums. Calculation of reserves. Survivorship and joint life policies and premiums.

## EDUCATION

## Home Economics Hall

PROFESSORS BOLTON, KOOS, ASSOCIATE PROFESSOR AYER, ASSISTANT PROFESSORS WOODY, FREELAND, JENSEN

Sociology and zoology as well as psychology are very desirable, as a foundation for the study of education. The courses in principles of education and social foundations of education are fundamental to all other courses in education. Students should take psychology during the freshman or 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 social foundations of education, secondary education, or childhood and adolescence and methods of teaching; practice teaching should be taken in the senior year. Students who major in the department should take all of the fundamental courses and then select enough to total 36 credits in the department.

Principles of Education, see courses 1, 99, 221, 222, 223.

Educational Sociology, see courses 109, 151, 162, 163, 181, 182, 183, 211, 212, 213.

Educational Psychology, see courses 155, 171, 172, 173, 201, 202, 203, 231, 232, 233, 241.

Educational Administration, see courses 119, 153, 154, 157, 158, 165, 191, 192, 193, 252, 253, 271, 272, 273, 281, 282, 283, 291, 292, 293, 296, 299, 300.

Teachers' training courses in trades and industries, (under Smith-Hughes Act), see courses 195, 196, 197, 198.

## COURSES

1. **INTRODUCTION TO EDUCATION.** Two credits per quarter. First, second or third quarters. Required of all freshmen in the College of Education. Open as an elective to students of other colleges. Counted toward a major in education but not toward the normal diploma. **FREELAND.**

The first part of the time is devoted to a consideration of how to study effectively. Following that an attempt is made to help students to

appreciate the place which education occupies in society; to introduce them to some of the specific problems in educational adjustment and to an elementary scientific knowledge of methods of solving educational problems.

**99. PRINCIPLES OF EDUCATION.** Five credits per quarter. First, second or third quarter. Prerequisite, Psychology 1. **BOLTON.**

A foundation course in the study of education. An attempt 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, social and hereditary factors in the educative process; educational bearings of instinct, habit, 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.

**109. EDUCATIONAL SOCIOLOGY I: SOCIAL FOUNDATIONS.** Three credits per quarter. First, second or third quarters. Prerequisite, Psychology 1. **AYER.**

Introductory course treating the social foundations of the school system. Social factors in the development of the individual. Educational functions of typical social groups; family, play, community, state. The social factors in school administration, discipline, the program of studies, class room methods, student activities, etc.

**119. HIGH SCHOOL CURRICULUM.** Three credits per quarter. First, second or third quarter. Prerequisite, courses 99, 109. **KOOS.**

This course is concerned with secondary-school curricula and closely related problems. It deals with the following topics: the development of the American secondary school; the aims of secondary education; relation to elementary and higher education, including some attention to the problem of admission to higher institutions; the reorganization of secondary education, with consideration of the junior high school and junior college; the high-school subjects of study; types of programs of study and curricula; types of high schools; administration of the time factor; the study problem.

**151. EDUCATIONAL SOCIOLOGY II. COOPERATIVE AGENCIES.** Three credits per quarter. First or second quarter. Prerequisite, course 109. **AYER.**

A study of cooperative agencies in education. Evolution of the school curriculum with reference to social organization. Evolution of inter-communication: speech, writing, fine arts, motion pictures. The social and school survey. The relation of the school to other educational agencies; the home, the community, the library, vocational guidance, recreational, cultural, religious and philanthropic associations, civic life, etc.

**153. PROBLEMS OF HIGH SCHOOL ADMINISTRATION.** Two credits per quarter. Third quarter. Prerequisite, course 119. **KOOS.**

Problems in secondary education, which are with few exceptions largely non-curricular in character: elimination and retardation in the high

school; vocational guidance and training; social organization and student activities such as athletics, debating, clubs, etc.; moral and religious education; community relations; selection, preparation, assignment, training during service, rating, and promotion of high-school teachers; grades and grading; objective standards in high-school subjects; health; building, equipment, and the high-school library; records and reports; high-school costs and support; functions of the principal.

154. **THE JUNIOR HIGH SCHOOL.** Three credits first quarter, two credits second quarter. Prerequisite, course 119. KOOS.

The following aspects of the administration of the junior high school or intermediate school: its functions; relations to the elementary school and to the senior high school; curricula, daily programs, departmentalism; promotion; teachers; buildings and equipment; costs; the problem of introducing this reorganization.

155. **CHILDHOOD AND ADOLESCENCE.** Three credits per quarter. First second or third quarters. Prerequisite, Psychology 1. BOLTON.

A study of the characteristics of the child to reveal how education is conditioned upon the successive stages of development; physical, mental and moral; 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.)

157. **METHODS OF TEACHING I.** Three credits per quarter. First, second or third quarter. WOODY.

A study of the application of psychology to the following problems of high school instruction: specific aims for each subject and the proper methods for realizing these aims; lesson assignments, supervised study, lesson plans; use of the recitation period; individual instruction; teachers' questions; proper summaries, drills and reviews.

\*158. **METHODS OF TEACHING II.**

\*162-168. **HISTORY OF EDUCATION.**

165. **SUPERVISED TEACHING.** Five credits per quarter. First, second or third quarter. FREELAND.

This course includes one lecture each week, conferences with the instructor, assigned readings, and one period each day during the quarter devoted to observation and practice teaching under supervision in the Seattle city schools. As far as possible the details of the course are arranged to meet individual needs.

171, 172. **EXPERIMENTAL EDUCATION.** Three credits per quarter. First and second quarters. Three double periods per week. WOODY.

Designed to show the possibility and value of experimental work in education, to give first hand knowledge in the technique of properly con-

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\* Not offered in 1918-1919.

ducting experiments, and to acquaint the student with the experimental studies in the various elementary and secondary school subjects. Laboratory work consists of experiments on different types of learning and on different methods of learning, the value of instructions, on various aspects of the elementary school subjects, such as improvement of reading or drill in arithmetic or spelling. Some practice in the use of standardized tests and scales. Readings and lectures will supplement the laboratory work and summarize such experimental studies as exist in arithmetic, spelling, reading, writing, etc.

**\*181-182. HISTORY OF MODERN ELEMENTARY EDUCATION.**

**183. ELEMENTARY EDUCATIONAL MEASUREMENTS.** Three credits per quarter. Third quarter. Laboratory deposit, \$1.00.

Discussion of teachers' marks and grading; meaning of standardization and standardized tests; brief survey of the principal standardized tests and measures in the elementary school; special emphasis given to the measurement of such high school subjects as composition, algebra, geometry, Latin, etc. Special practice in the use of these scales and tests whenever possible. Course designed for teachers with little or no experience. Others admitted on consent of the instructor.

**191. EDUCATIONAL ADMINISTRATION: STATE AND COUNTY.** Three credits per quarter. First quarter. Koos.

The principles of proper administration of school systems in states and counties, including a comparison of school laws and school systems in several states with special attention to Washington and neighboring states. Among the topics dealt with in the course are: policies of the federal and state governments in education; state and county (and other local units) educational organization; certification and training of teachers; state funds and their apportionment; compulsory education and child labor; private educational agencies and state control.

**192-198. EDUCATIONAL ADMINISTRATION: CITY SCHOOL.** Three credits per quarter. Second and third quarters. Ayer.

For those preparing for superintendencies, principalships, and other supervisory positions. Deals with such topics as school boards and their functions; the city superintendent and his duties; administration and supervisory organization; scientific attitude in supervision, including a consideration of the use of quantitative and qualitative standards; course making and daily programs; classification of pupils, grading, promotion, retardation, and elimination; departmentalism; attendance; selection, appointment, rating, promotion, and training during service of teachers; health supervision; buildings, equipment and janitor service; finances; records and reports; measuring the efficiency of a school system to discover proper lines of progress; bringing the public to a consciousness of school needs.

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\* Not offered in 1918-1919.

\*195. INDUSTRIAL EDUCATION. Three credits per quarter. First quarter. JENSEN.

This course treats of the purpose, history, organization, and the promotion of industrial education and its articulation with the traditional school system, with industry and with the Smith-Hughes Law. Brief space will be devoted to the continuation school, prevocational school and vocational guidance. Some time will be given to industrial surveys and the development of bibliography. Readings will include such material as the Report of the Commissioner of Labor for 1910; Report of the Commission on National Aid to Vocational Education, Volumes 1 and 11, etc. (Thirty-six hours in class room).

\*196. METHODS OF TEACHING TRADES AND CLASS MANAGEMENT. Three credits per quarter. Second quarter. JENSEN.

This course will include some of the general principles of education that apply particularly to trade education and general methods in teaching trade subjects. It will include the development of lesson plans as an outgrowth of the study of methods of trade teaching. Daily preparation, including both oral and lesson sheets will be emphasized throughout. Efficiency records of students will be developed for use in connection with each of the different trades represented in the group. Methods of taking care of tool-room, stock-room, supplies, etc., will be considered as methods of indirect discipline and instruction. School law, lighting, ventilation, and sanitation will be included. (Thirty-six hours in class room).

\*197. TRADE ANALYSIS AND TEACHING PROGRAM. Three credits per quarter. Third quarter. JENSEN.

Each member of the class will develop a teaching program or detailed course of study following the analysis of the trade that he expects to teach. This will be designated as a unit trade course and will be made up of a large number of units, each one representing a certain part of the course which is necessary for the successful teaching of Smith-Hughes work. The National Safety Movement, shop lay-outs, development of business and factory methods, routine work, time cards, job-tickets, shop tickets, inventories, etc., will all be included. (Thirty-six hours in class room).

\*198. PRACTICE TEACHING. Three credits per quarter. First, second and third quarters. JENSEN.

Work in practice teaching will be carried on under conditions as nearly like the conditions that the individual teachers meet in their respective trades after certification, as possible, and will be closely supervised at all times. A lesson or project plan will be made out by the individual student from his analysis of the trade in which he desires certification. This will include subject matter for oral teaching as well as shop project, machine parts, etc. Lesson plans will be approved, corrected, if necessary, and re-written before used. Then, after the lesson has been taught, and it is developed during the critic hour they are again revised, if necessary. (Thirty-six hours in class room.)

201-202-203. EDUCATIONAL PROBLEMS OF ADOLESCENCE. Two credits per quarter. First, second and third quarter. 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.

\*211-212-218. COMPARATIVE EDUCATION.

\*221-222-228. PHILOSOPHY OF EDUCATION.

231-232-238. ADVANCED EDUCATIONAL PSYCHOLOGY. Two credits per quarter. First, second and third quarters. WOODY.

A survey of the latest contributions to educational psychology, with especial emphasis upon the contributions of Thorndike. The first quarter will deal with the analysis of instincts, the origin and date of their appearance, the relation of instincts to imitation, and ideo-motor action, instincts as a basis for learning, etc.; the second quarter, with the laws of learning and experimental evidence on such topics as conditions, rate, permanence, transfer, etc., of learning; the third quarter with individual differences and the experimental evidence showing the influence of such causes as ancestry, race, sex, environment, etc.

241. EDUCATIONAL STATISTICS. Two credits per quarter. First quarter. WOODY.

Designed to give such knowledge of statistics as the graduate student needs in conducting research or as the teacher, principal, or superintendent needs in scientifically attacking the every day problems of the school room. The course is an introduction to the course in Educational Measurements and other courses in which statistics are needed. It will deal with the use of statistical methods in education, the collection and tabulation of data, frequency tables, measurement of central tendency and variability, the frequency curve and its use in education, correlation, and the tabular and graphic methods in reporting school facts. The materials for all problems in this course will be drawn from school records and reports and will be illustrative of such problems within the school system as school costs, retardation, achievement of pupils, etc.

242-248. EDUCATIONAL MEASUREMENTS. Two credits per quarter. Second and third quarter. Prerequisite, course 241.

Lectures, discussions, reading, class experiments, and projects. Primarily for experienced teachers, principals and supervisors or those preparing for such positions. Practice given in administering all of the standard tests and scales for measuring achievements in the school subjects and in the scoring and evaluating results of such measurements.

252-258. FINANCIAL ASPECTS OF SCHOOL ADMINISTRATION. Two credits per quarter. Second and third quarters. KOOS.

The following aspects of school support, costs, and accounting will be studied: units of school support; methods of raising and apportioning funds; city school funds and expenditures; analysis of school costs on various bases; salary schedules and teaching costs; comparative cost accounting systems, budgets, records, and reports.

\* 271-272-273. SEMINAR IN EDUCATIONAL SURVEYS. Two credits per quarter. First, second and third quarters. KOOS.

Development, functions, methods, and results of educational surveys as discovered by a critical examination of all available reports of city, rural, vocational, and state educational surveys and literature of a related character.

\* 281-282-288. SEMINAR ON PLAY IN EDUCATION. Two credits per quarter. First, second and third quarters. FREELAND.

The psychological and biological meaning of play. The significance of play from the standpoint of education, morality, religion, and civic life. Values in relation to public morals, social ideals, delinquency and crime. Relation to school, home, church, settlement work. Commercialized play and recreation. Municipal play and recreation. The Boy Scout movement. History, present status and outlook of the modern play movement.

291-292-298. SEMINAR IN REHABILITATION OF SOLDIERS. Two credits per quarter. First, second and third quarters. AYER.

Study of plans and methods for the rehabilitation of wounded sailors and soldiers. Particular emphasis will be given to the educational aspects of the movement.

298-299-300. 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 the members of the department representing the fields of work chosen by the students.

## ENGLISH

Denny Hall

PROFESSORS PADEFORD, PARRINGTON, BENHAM,<sup>1</sup> ASSOCIATE PROFESSORS MILLMAN, COX, ASSISTANT PROFESSORS GARRETT,<sup>2</sup> DARBY, JOHANSON, MR. HARRISON, MR. ERNST, DR. GREGG, MRS. HAGGETT

### REQUIREMENTS FOR MAJOR STUDENTS

At the conclusion of the course in their senior year all major students will be required to pass a departmental examination covering general historical and critical questions in English.

Candidates for the teachers' certificate are required to take 188-184-185.

It is expected that senior major students will take 191-192-198, but the work is not a definite prescription.

### COURSES

1-2. FRESHMAN ENGLISH. Composition and Literature. Five credits per quarter. First, second or third quarter. Required of all freshmen in

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on part time war service.

the Colleges of Liberal Arts, Science, Education and Business Administration. PADEFORD in charge.

A course in the principles and practice of composition, based upon the reading and discussion of works representative of the main currents in contemporary thought. Accompanied by conferences for personal criticism. The work done in this course is regarded as belonging rather to the high school than to the university. Those whose preliminary training has been superior will be excused from the course. Those who receive a grade of A in course 1 will be excused from course 2.

3-4. FRESHMAN ENGLISH. Composition and Literature. Three credits per quarter. First, second or third quarter. PARRINGTON, HARRISON.

An adaptation of course 1-2 for students in the College of Fine Arts.

5-6. COMPOSITION FOR ENGINEERS. Three credits per quarter. First, second or third quarter.

An adaptation of course 1-2 for students in the Colleges of Engineering, Mines and Forestry.

51-52-53. ADVANCED COMPOSITION. Three credits per quarter. First, second and third quarters. Prerequisite, course 1-2, 3-4, 5-6 or equivalent. MILLIMAN, CHITTICK.

A course in composition based upon models from current magazines and from the modern English essayist.

7-8-9. ADVANCED COMPOSITION. Versification. One credit per quarter. First, second and third quarters. PARRINGTON.

A study of the principles of English versification, with practice in verse writing. Some consideration will be given to present day poetry.

73-74-75. CONTEMPORARY LITERATURE. Three credits per quarter. First, second and third quarters. CHITTICK, BENHAM, HARRISON, ERNST, GREGG.

The reading and discussion of significant works of the past thirty years.

101-102-103. THE SHORT STORY. (Journalism 160-161-162). Three credits per quarter. First, second and third quarters. EDGINGTON.

The theory and practice of short-story writing.

104-105-106. CONTEMPORARY LITERATURE. Three credits per quarter. First, second and third quarters. COX.

Special studies in contemporary literature for advanced students.

123. PHILOSOPHY IN ENGLISH LITERATURE OF THE NINETEENTH CENTURY. (Philosophy 123.) Five credits per quarter. Third quarter. SAVERY.

Conceptions of the universe, evolution, the destiny of man, the individual and social ideal in English and American authors from Wordsworth to the present.

126. PHILOSOPHY IN CONTEMPORARY DRAMA. (Philosophy 126.) Five credits per quarter. Third quarter. BENHAM.

Social and philosophical ideas in the contemporary drama.

70 Shakespeare 3 cr sp. Padelford

79 Introduction to Poetry 3 cr sp Parrington

133-134-135. MAIN TENDENCIES IN ENGLISH LITERATURE. Three credits per quarter. First, second and third quarters. PARRINGTON.

A study in national ideas, with consideration of significant literary figures and works.

136-137-138. <sup>\*</sup>THE NOVEL. Three credits per quarter. First, second and third quarters. BENHAM.

An attempt to trace to their sources the various tendencies in modern fiction.

141-142-143. SOCIAL IDEALS IN ENGLISH LITERATURE. Three credits per quarter. First, second and third quarters. BENHAM.

A study of model commonwealths and of such other literature as illustrates the growth of English social and economic thought.

*144 - Age of Milton. Works 3 or Lockwood.*

161. EARLY NINETEENTH CENTURY IN AMERICAN LITERATURE. Three credits per quarter. First quarter. PARRINGTON.

A study in national ideals. The course will deal with the literature of the Constitution, early poetry, fiction, essays and the controversy over slavery.

162. MIDDLE NINETEENTH CENTURY LITERATURE IN AMERICA. Three credits per quarter. Second quarter. PARRINGTON.

A study primarily in the New England school and Whitman, with some consideration of other writers.

163. <sup>Sp</sup>AMERICAN LITERATURE AFTER 1870. Three credits per quarter. Third quarter. PARRINGTON.

An introduction to current literary ideals and tendencies in America.

165-166-167. GREAT AMERICAN WRITERS. Three credits per quarter. First, second and third quarters. MILLIMAN.

Critical studies of the works of Emerson, Whitman, Hawthorne, Poe, Longfellow, Lowell and others.

174. THE GEORGIAN POETS. Three credits per quarter. First quarter. PADELFORD.

A study of the English romantic movement: Wordsworth, Coleridge, Shelley, Keats and Byron.

175. THE VICTORIAN POETS. Three credits per quarter. Second quarter. PADELFORD.

A study of English poetry from 1830 to 1890.

176. ENGLISH LITERATURE OF THE EIGHTEENTH CENTURY. Three credits per quarter. Third quarter. PADELFORD.

A study of the literary and social movements of the period.

183, 184, 185. GENERAL LITERATURE. Three credits per quarter. First, second and third quarters. JOHANSON, HARRISON.

Readings in representative European literature, with reports and conferences.

191-192-193. SENIOR CONFERENCE. One-third credit per quarter. For senior major students. JOHANSON.

*195 - great English Classics 3 or Lockwood*

Individual conferences for the purpose of effecting a correlation of studies, and for the guidance in original investigation. Each student is expected to meet the instructor in conferences at least a half hour each week.

188-189-190. **TEACHERS' COURSE.** Two credits per quarter. First, second and third quarters. Required of major students who wish the recommendation of the department for the normal diploma. GARRETT.

A consideration of methods and problems in the teaching of English in the high school.

<sup>+</sup>221-<sup>\*</sup>222-<sup>+</sup>223. **PRO-SEMINAR IN ENGLISH LITERATURE SINCE 1880.** Two to eight credits per quarter. First, second and third quarters. BENHAM.

The field of work is changed each year. The course for 1918-1919 will begin with the works and influence of Macaulay and Thackeray.

231-232-233<sup>\*</sup>. **PRO-SEMINAR IN COMPARATIVE LITERATURE.** Two to eight credits per quarter. First, second and third quarters. COX.

Readings for background in esthetic, philosophic, and poetic theories from Plato and Aristotle down to the present. Students will carry on individual investigations in subjects and periods selected by them.

†242-243-244. **PRO-SEMINAR IN CHAUCER.** Two credits per quarter. First, second and third quarters. GARRETT.

Special regard to the interplay of medieval and Renaissance ideals.

## FRENCH

Denny Hall

(See Romanic Languages)

## GEOLOGY

Science Hall

PROFESSOR LANDES, ASSOCIATE PROFESSOR WEAVER, ASSISTANT PROFESSORS SAUNDERS, CULVER, LEIGHTON

### REQUIREMENTS OF THE DEPARTMENT

Courses in the department are grouped to lead into the different fields of geological work as follows:

General Geology: Courses 1-9, 100-109, 200-209.

Geography, Climatology, and Physiography: Courses 10-19, 110-119, 210-219.

Mineralogy, Petrography and Economic Geology: Courses 20-29, 120-129, 220-229.

Paleontology and Stratigraphy: 30-39, 130-139, 230-239.

For the required earth science in the College of Science: Courses 1-2; 12 and 2; 5 and 2; 31-32; or one quarter with laboratory work, together with one quarter of astronomy.

† May not be given in 1918-1919.

For the third year of science in Liberal Arts: Any of the elementary courses to make the required number of credits: Courses 1 and 2; 11-12; or 31 and 32. (Courses 31 and 32 may be taken without laboratory for three credits or with laboratory for five credits.)

For a teacher's certificate: The same as for a major or the teacher's course in science.

NOTE.—For those preparing to teach general science and physical geography or commercial geography in the high school the following courses are suggested: 11; 12 or 1; for those preparing to *teach* geology: 1 or 12; 2; 11; 31-32.

Geology 11, 22, 130, 141, 142, 144 are of immediate application to war or war industries.

Geology 1, 2, 5 are prerequisite to these courses.

#### COURSES

1. GENERAL GEOLOGY: Dynamical. Five credits per quarter. First or second quarter. Lectures and laboratory work, with occasional half-day field trips. Laboratory deposit, \$1.00. WEAVER.

The geological agencies and processes affecting the earth, their results, and how to identify them.

2. GENERAL GEOLOGY: Historical. Five credits per quarter. Second quarter. Lectures and laboratory work, with some field excursions. Prerequisite, 1, 5, or 12. Laboratory deposit, \$1.00. WEAVER.

Continuation of course 1, dealing with the origin and evolution of the earth.

5. ENGINEERING GEOLOGY. Five credits per quarter. First or third quarter. Three class and two laboratory periods per week. Primarily for mining students, chemical and civil engineers. Laboratory deposit, \$1.00. CULVER.

A survey of the field of general geology. Occasional field trips. This course, modified to fit the special needs of students in forestry, is repeated in the third quarter.

11. METEOROLOGY AND ELEMENTARY CLIMATOLOGY. (War Course.) Three to five credits per quarter. With or without laboratory. First or second quarter. Laboratory deposit, \$1.00. SAUNDERS.

A study of the weather elements and controls, the causes and effects of atmospheric conditions. The principles and methods of weather forecasting and use of instruments.

12. PHYSIOGRAPHY. Three or five credits per quarter. With or without laboratory. Occasional field trips. Third quarter. Laboratory deposit, \$1.00. SAUNDERS.

The study of land forms or earth's features with reference to origin and characteristic changes under different agencies during the geographic cycle. Study of the agencies causing changes and the recognition and interpretation of different topographic features produced.

10 - Fundamentals . 2 cr Saunders Sp

16. **ECONOMIC GEOGRAPHY OF WASHINGTON.** Three credits per quarter. Third quarter. Lectures, with quiz on required reading. LANDES. A study of economic and industrial Washington, based on geological, physiographic and climatic conditions.

20. **GEM MINERALS.** Two credits and one optional laboratory credit per quarter. Second quarter. One lecture and one or two laboratory periods per week. Laboratory deposit, \$2.00. May be taken by students in the College of Fine Arts for two or three credits. CULVER.

A non-technical study of gems and jeweler's minerals dealing with their origin, diagnostics, and preparation for mounting.

21. **MINERALOGY.** Three credits per quarter. Second quarter. Two lectures and one laboratory period per week. Laboratory deposit, \$8.00. CULVER.

A brief study of crystallography followed by descriptive mineralogy and blowpipe methods. A knowledge of chemistry is essential and general geology is desirable. One or more field trips to some mineral center.

22. **PETROLOGY.** (War Course.) Three credits per quarter. Third quarter. Two lectures and one laboratory period, with occasional field trips. A study of rocks, their components, occurrence and structural relations. Should be preceded by courses 1-2 and 21. Laboratory deposit, \$2.00. CULVER.

31. **GENERAL PALEONTOLOGY.** Five credits per quarter. First or third quarter. Three lectures and two laboratory periods per week. Laboratory deposit, \$1.00. WEAVER.

A consideration of the broad principles of paleontology. This course is planned for those taking the required science in the College of Science with laboratory as well as a prerequisite to the more advanced courses in paleontology. Students in the College of Liberal Arts may take this course without laboratory work for three credits or with laboratory work for five credits.

32. **STRATIGRAPHIC PALEONTOLOGY.** Five credits per quarter. Second quarter. Three lectures and two laboratory periods per week. Prerequisite, courses 1, 12, or 31. Laboratory deposit, \$1.00. WEAVER.

A study of the fundamental principles of stratigraphy and of the characteristic fossils by means of which the geologic formations of North America may be determined. This course, together with course 31, will constitute a year's work in required science. Students in the College of Liberal Arts may take this course without laboratory work for three credits, or with laboratory work for five credits.

107. **GEOLOGY OF WASHINGTON.** Three credits per quarter. First quarter. Lectures with assigned readings and laboratory study. Prerequisite, one quarter of general geology or physiography. LANDES.

A history of the geological development of the state and its different physiographic regions.

123. **OPTICAL MINERALOGY.** Four credits per quarter. First quarter. Two lectures and two laboratory periods per week. Prerequisite, course 5 or equivalent, 21 and 22. Laboratory deposit, \$2.00. CULVER.

The use of the polarizing microscope in the examination of minerals and rocks in thin sections.

124. **PETROGRAPHY.** Four credits per quarter. Second quarter. Two lectures and two laboratory periods per week. Prerequisite, course 123. Laboratory deposit, \$2.00. **CULVER.**

The principles of petrography and petrographic methods in the systematic study of igneous sedimentary and metamorphic rocks.

\* 125. **ADVANCED PETROGRAPHY.** Two credits with additional credits optional. Third quarter. Prerequisite, course 124. **CULVER.**

A continuation of the work in petrography, for majors in mining and geology. Primarily a study of igneous rocks and their relations.

127. **ECONOMIC GEOLOGY.** Three credits per quarter. First quarter. Lectures and discussion of papers. Prerequisite, courses 1 or 5, and 21. **LANDES.**

A study of the origin and extent of economic deposits of non-metallic mineral, their production and use.

128. **ECONOMIC GEOLOGY.** Five credits per quarter. Second quarter. Lectures and discussion of papers. Prerequisite, courses 1 or 5, and 21, 124. **LANDES.**

A study of the origin and extent of economic deposits of metals, their production and use.

129. **FIELD METHODS.** Two or three credits per quarter. Third quarter. Prerequisite, courses 2 or 32, and 124, 127, 128. **CULVER.**

The application of field methods to the study of areas of economic importance. This includes practice in the sketching of topography, plane table mapping, the determination of thickness and extent of rock masses, traversing and the preparation of areal maps and structure sections for small areas. The work during the quarter is supplemented by a study of the geology in some mining center. A written report on this work is required.

\* 130. **STRATIGRAPHY.** (War Course.) Three credits per quarter. Third quarter. Two lectures and one laboratory period. Prerequisite, course 1, 12 or 31. **WEAVER.**

In this course special consideration is given to stratigraphic problems connected with the occurrence of petroleum deposits and geological mapping. Attention will be given to stratigraphic problems in Europe and their relation to coal and oil resources.

\* 131-132. **INVERTEBRATE PALEONTOLOGY.** Three credits per quarter. First and second quarters. Two lectures and one laboratory period per week. Prerequisite, course 31. May well be followed by courses 133 or 134. **WEAVER.**

A detailed systematic biologic study of fossil and living representatives of the Mollusca. First quarter, Pelecypoda; second quarter, Gastropoda.

<sup>7 \*</sup>  
 137-138. **ADVANCED HISTORICAL GEOLOGY.** Two credits per quarter. First and second quarters. Two lectures per week. Prerequisite, course 2. **WEAVER.**

A study of continental evolution, including history of sedimentation, vulcanism, earth movements and geographic changes in North America and Europe.

141. **LAND FEATURES OF WESTERN EUROPE.** (War Course.) Two credits per quarter. Third quarter. Prerequisite, courses 1, 2. **SAUNDERS.**

A description of the topography and rock formations in northern France and in Italy, and their relation to war strategy.

\*142. **CLIMATIC PROBLEMS OF THE WAR IN WESTERN EUROPE.** (War Course.) Two credits per quarter. Third quarter. Lectures with assigned readings. Prerequisite, courses 1, 2, or 11. **SAUNDERS.**

A study of the climate in Western Europe in its relation to military operations and aviation.

\*143. **GEOLOGY OF THE FAR EAST, INCLUDING SIBERIA.** Five credits per quarter. First quarter. Lectures with assigned reading. Prerequisite, courses 1, 2, or 5. **CULVER.**

A consideration in the light of present world problems of the general geologic features with special emphasis on the structure, mode of occurrence, and value of the ore bearing formations.

\*144. **GEOLOGY OF ALASKA.** Two credits per quarter. Third quarter. Lectures with assigned reading. Prerequisite, courses 1, 2, 5, or 31. **WEAVER.**

A consideration of the geological formations present in Alaska and their structure, together with the mineral deposits of economic importance.

#### SPECIAL SHORT COURSES

<sup>W</sup>  
 S. C. 2. **GEOLOGY.** Two credits per quarter. Two lectures per week. Second quarter. **CULVER.**

<sup>W</sup>  
 S. C. 3. **MINERALOGY.** Two credits per quarter. Second quarter. Two laboratory periods per week. **CULVER.**

A laboratory course in physical determinations of minerals and the use of blowpipe methods.

### GERMANIC LANGUAGES AND LITERATURE

Home Economics Hall

ASSISTANT PROFESSORS ECKELMAN, BOETZKES, ROLOFF

#### REQUIREMENTS OF THE DEPARTMENT

For a major: 35 to 60 credits, including at least 30 credits in courses above 100.

For the normal diploma: the same as for a major including course 160-161-162.

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 110-111-112, 120, 160-161-162.

Credit is allowed for any quarter in any course except 1-2.

All courses are conducted in German unless otherwise specified.

German 1, 2, 3, 5, 6, 7, 10, 11, 110, 111, 180 are of immediate application to war or war industries.

#### COURSES

1-2. **FIRST YEAR.** Five credits per quarter. First and third quarters. **ROLOFF, ECKELMAN.**

Stage pronunciation, grammar, reading of easy prose and verse, conversation.

3. **FIRST YEAR READING.** Five credits per quarter. First, second or third quarter. Prerequisite, course 1-2 or one year high school. **ROLOFF, ECKELMAN.**

Reading of modern prose, conversation, composition, continuation of grammar.

5. **SECOND YEAR READING.** Five credits per quarter. First, second or third quarter. Prerequisite, course 3 or one and one-half to two years high school. **ECKELMAN, BOETZKES.**

Pronunciation, review of grammar with emphasis on syntax, reading of modern prose, simple composition.

6. **SECOND YEAR RAPID READING.** Three or five credits per quarter. First, second or third quarter. Prerequisite, course 5 or two and one-half to three years high school. **ECKELMAN, BOETZKES.**

Special sections with suitable prose for students in Colleges of Science, Engineering and Forestry.

7. **SECOND YEAR RAPID READING.** Three or five credits per quarter. Third quarter. Prerequisite, course 5 or two and one-half to three years high school. **ECKELMAN, BOETZKES.**

Modern prose and at least one drama by Schiller, Goethe or Lessing.

\*10-11. **SECOND YEAR SUPPLEMENTARY READING.**

100. **SCHILLER.** Three credits per quarter. Second quarter. Prerequisite, courses 6 or 10 or four years high school. **BOETZKES.**

Life and dramatic works. Don Carlos, Kabale und Liebe, Wallenstein, Braut von Messina.

102. **GOETHE.** Three credits per quarter. Third quarter. Prerequisite, courses 6, 7, or four years high school.

Life and dramatic works. Goetz von Berlichingen, Egmont, Tasso, Iphigenie.

103. **RECENT WRITERS.** Three credits per quarter. First quarter. Prerequisite, courses 6, or 7, 10 or four years high school. **ROLOFF.**

\* Not offered in 1918-1919.

Social problems as represented in the works of Hauptmann, Sudermann, Fulda, Wolzogen, Lienhard, Schnitzler, Paul Ernst. A survey of the field.

110-111. ADVANCED GRAMMAR AND COMPOSITION. Two credits per quarter. First and second quarters. Prerequisite, course 10-11.

Review of grammar and syntax in German, punctuation, syllabication, German script, written and extemporaneous reproduction of narrative and dramatic selections, letter writing, themes.

113-114. SCIENTIFIC GERMAN. Three credits per quarter. Second and third quarters. Prerequisite, courses 6, or 7, 10. ROLOFF.

Scientific essays, monographs and technical periodicals. Each student does private reading in his own special field under the guidance of the instructor and major professor.

*115, 116. Scientific German 2 or W + Sp Eckelmann*

\*116-117-118. GERMAN PROSE READING.

\*120. PHONETICS.

\*180-181-182. GERMAN INSTITUTIONS.

\*183-184-185. MODERN NOVELS.

\*186-187-188. MODERN DRAMA.

\*140-141. HISTORY OF GERMAN LITERATURE.

142. LYRICS AND BALLADS. Two credits per quarter. Third quarter. For majors and advanced students. ECKELMAN.

Goethe, Schiller, and their inheritance. The Romanticists, Uhland, Heine, Moerike, Storm and others.

150. LESSING. Three credits per quarter. First quarter. For majors, and advanced students. BOETZKES.

151-152. GOETHE'S FAUST, PARTS I AND II. Three credits per quarter. Second and third quarters. For majors and advanced students. BOETZKES.

Interpretation, genesis, plan and purpose of the drama. Faust legend and Faust theme in literature.

160-161. TEACHERS' COURSE. Two credits per quarter. Second and third quarters. For senior majors and advanced students. ECKELMAN.

Review of German grammar and syntax from the standpoint of teaching; coaching in elementary work. Aims and methods of teaching German; lesson plans, courses of study, observation and practice teaching in schools.

\*170-171-172. GERMAN CLASSICS IN ENGLISH.

180. MILITARY GERMAN. (War Course.) Five credits per quarter. Second quarter. Prerequisite, courses 1-5 or two years high school German. ROLOFF.

The material offered is intended to afford a knowledge of the general terms of modern warfare, particularly of the manual of arms, general in-

\* Not offered in 1918-1919.

*190 - 19<sup>th</sup> Cent Lit 2 or Sp Boetzke*

structions to non-commissioned officers, etc. Training of the ear especially emphasized.

\*200-201-202. GOETHE'S LYRICS AND LETTERS.

\*203-204-205. STORM AND STRESS PERIOD.

\*206-207-208. ROMANTIC SCHOOL.

210-211. NINETEENTH CENTURY. Two to four credits per quarter. First and second quarters. For graduates. ECKELMAN.

Study of the drama and novel to 1880. The social movement, the problem of individuality. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Keller, Storm, C. F. Meyer.

\*220-221-222. INTER-RELATIONS OF GERMAN AND ENGLISH LITERATURE.

\*250-251-252. HISTORY OF THE GERMAN LANGUAGE.

\*253-254-255. MIDDLE HIGH GERMAN.

\*256-257-258. GOTHIC.

259. OLD SAXON. Two credits per quarter. Third quarter. For graduates. ECKELMAN.

Study of the dialect and the Old Saxon Heliand.

## GREEK

Denny Hall

(See Classical Languages and Literature)

## HISTORY

Denny Hall

PROFESSORS MEANY, RICHARDSON, SCHOLZ, ASSOCIATE PROFESSORS McMAHON AND BOWMAN,\* ASSISTANT PROFESSOR LUTZ,<sup>1</sup> MR. DAVID

### REQUIREMENTS OF THE DEPARTMENT

The University requirements 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. This course is repeated, beginning with the third quarter.

HISTORY OF THE UNITED STATES (57-58). Primarily for sophomores.

ENGLISH POLITICAL HISTORY (5-6). Open without prerequisites to freshmen, sophomores and upperclassmen.

\* Not offered in 1918-1919.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-1918.

**ANCIENT HISTORY: GREECE AND ROME (17-18).** Open without prerequisites to freshmen, sophomores and upperclassmen.

FOR A MAJOR at least ten 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 departmental requirements, 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, must show to the satisfaction of the department that they are acquainted with the elementary facts requisite for the teaching of all courses in history and in civil government taught in the high schools of the state, and that they have specialized knowledge in their chosen fields.

History 65, 66, 121, 122, 123, 130, 147 are of immediate application to war or war industries. History 1, 2, 3 are prerequisite to these courses.

#### COURSES

1-2. **MEDIEVAL AND MODERN EUROPEAN HISTORY.** Five credits per quarter. First and second quarters, repeated third and fourth quarters. **BOWMAN.**

A general survey of the principal medieval and modern peoples down to the present time.

5-6. **ENGLISH POLITICAL HISTORY.** Five credits per quarter. First and second quarters. **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.

17. **ANCIENT HISTORY.** Five credits per quarter. First quarter. **SCHOLZ.**

The foundations of civilization and history to approximately 400 B. C.

18. **ANCIENT HISTORY.** Five credits per quarter. Second quarter. **SCHOLZ.**

From about 400 B. C. to the reign of Augustus, or to the foundations of the Roman world empire and the new universal religion, Christianity.

19. **ANCIENT HISTORY.** Five credits. Third quarter. **SCHOLZ.**

From the reign of Augustus to that of Justinian, including a survey of the sixth century A. D. with reference to the backgrounds of the prospective oriental advance and reaction under Mohammed and Islam.

21-22. **HISTORY OF CHINA.** Three credits per quarter. First and second quarters. **GOWEN.**

23. **HISTORY OF JAPAN.** Three credits per quarter. Third quarter. **GOWEN.**

32 - European War 2a W. Richardson

57-58. HISTORY OF THE UNITED STATES. Five credits per quarter. First and second quarters. Not open to freshmen. McMAHON.

A general survey with emphasis upon political history.

59-60-61. MAKERS OF THE NATION. Two credits per quarter. First, second and third quarters. MEANY.

65-66. THE WORLD WAR. (War Course.) Two credits per quarter. First and second quarters. Not open to freshmen. RICHARDSON.

Historical background, fundamental courses and the progressive development of issues and events. Current events will be discussed and related to their historical antecedents.

<sup>W Sp \*</sup>  
105-106-107. ENGLISH CONSTITUTIONAL HISTORY. Three credits per quarter. First, second and third quarters. Prerequisite, course 5-6. RICHARDSON.

\*109-110. ECONOMIC AND SOCIAL HISTORY OF THE MIDDLE AGES.

\*111. MEDIEVAL CIVILIZATION.

\*114. MEDIEVAL FRANCE.

\*115. THE RENAISSANCE.

\*116. THE REFORMATION.

\*119. HISTORY OF FRANCE FROM THE REFORMATION TO THE FRENCH REVOLUTION.

121-122-123. PRUSSIA AND NORTHERN EUROPE. (War Course.) Two credits per quarter. First, second and third quarters. Prerequisite, course 1-2. 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 through the reign of Frederick the Great.

\*127-128. HISTORY OF ENGLAND SINCE THE ACCESSION OF GEORGE III.

\*129. FRENCH REVOLUTION AND NAPOLEONIC ERA.

130. EUROPE SINCE 1814. (War Course.) Five credits per quarter. Third quarter. Open, without prerequisite, to juniors and seniors, and as a war-service course to such freshmen and sophomores as are recommended by the Commandant. Not open to students who have taken courses 65-66. RICHARDSON.

Mainly political, introductory to European politics of the present time. Economic topics receive attention and the world-war is included in the course.

\*139-140. POLITICAL, ECONOMIC AND SOCIAL HISTORY OF THE AMERICAN COLONIES.

143. HISTORY OF THE UNITED STATES. Two credits per quarter. First quarter. Open only to juniors, seniors and graduates. McMAHON.

\* Not offered in 1918-1919.

117, 118, 119 - Mediterranean World 2 cr 7<sup>th</sup> Sp  
Scholz

A study of the period from the close of the revolution to the close of the war of 1812.

144. HISTORY OF THE UNITED STATES, 1815-1840. Two credits per quarter. Second quarter. Open only to juniors, seniors and graduates. McMAHON.

A study of the growth of American nationality to 1840.

145. HISTORY OF THE UNITED STATES, 1840-1860. Two credits per quarter. Third quarter. Open only to juniors, seniors and graduates. McMAHON.

A study of the territorial struggle over slavery from 1840 to the outbreak of the civil war.

147. HISTORY OF THE CIVIL WAR PERIOD. (War Course.) Three credits per quarter. First quarter. Open only to juniors, seniors and graduates. McMAHON.

148. HISTORY OF THE RECONSTRUCTION PERIOD. Three credits per quarter. Second quarter. Open only to juniors, seniors and graduates. McMAHON.

149. HISTORY OF NATIONAL DEVELOPMENT. Five credits per quarter. Third quarter. Open to juniors, seniors, graduates and to such sophomores as have completed courses 57-58. McMAHON.

A study of the development of the American nation from the close of the reconstruction period to the present time.

153. SPAIN IN AMERICA. Three credits per quarter. First quarter. MEANY.

A study of the rise and fall of Spanish power in America, and an outline of the history of the Spanish-American republics.

154. DEVELOPMENT OF THE PACIFIC. Three credits per quarter. Second quarter. MEANY.

History of the countries bordering upon the Pacific ocean, with reference also to changes now in progress.

155. HISTORY OF CANADA. Three credits per quarter. Third quarter. MEANY.

A study of Canadian development to the present time.

157-158-159. HISTORY OF AMERICAN DIPLOMACY. Two credits per quarter. First, second and third quarters. MEANY.

163-164-165. NORTHWESTERN HISTORY. Two credits per quarter. First, second and third quarters. MEANY.

From the earliest voyages to the Pacific Northwest to the organization of the present forms of government.

196-197. METHODS OF TEACHING HISTORY. Two credits per quarter. Second and third quarters. Required of advanced students who expect to teach history. McMAHON.

\*201-202-203. METHODS OF HISTORICAL RESEARCH AND CRITICISM.

\*205-206-207. HISTORY OF THE WRITING OF HISTORY.

\*212-213-214. SEMINAR IN EUROPEAN HISTORY.

\*215-216-217. SEMINAR IN ENGLISH HISTORY.

\*~~221-222-223~~<sup>W</sup><sup>Sc</sup>. SEMINAR IN AMERICAN HISTORY. Two credits per quarter. First, second and third quarters. McMAHON.

227-228-229. SEMINAR IN STATE HISTORY. Two credits per quarter. First, second and third quarters. MEANY.

## HOME ECONOMICS

### Home Economics Hall

PROFESSOR RAITT, ASSISTANT PROFESSORS DENNY, JUDY, MISS CLARKE, MISS HESSLER, MRS. HALL

(For curricula in Home Economics see pages 68-71.)

Home Economics 4, 108, 124 are of immediate application to war or war industries. Home Economics 1-2-3 are prerequisite to these courses.

### COURSES

1-2-3. GENERAL COURSE. Three credits per quarter. First, second and third quarters. Three laboratory periods per week. Laboratory deposit, \$3.00.

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. (War Course.) Three credits per quarter. First quarter. Three laboratory periods per week. Prerequisite or parallel, Chem. 5. Laboratory deposit, \$4.00. HALL.

Nature and use of food. Changes produced by heat, cold and fermentation upon typical food materials. Practice in fundamental cooking processes.

5-6. FOODS—SELECTION AND PREPARATION. Five credits per quarter. First, second and third quarters. Two lectures and three laboratory periods per week. Prerequisite, course 4, or two years' high school domestic science, or parallel, Chem. 5-6, Zool. 7. Laboratory deposit, \$6.00. HALL.

Continuation of course 4. Economic aspect of, selection and preparation of food. Production and manufacture of food, its nutritive value.

8. CLOTHING—PRINCIPLES OF HAND AND MACHINE SEWING. Three credits per quarter. Second quarter. Three laboratory periods per week. Laboratory deposit, \$1.00. JUDY.

\* Not offered in 1918-1919.

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.

\*20. LAUNDERING AND DYEING.

25. TEXTILES. Five credits per quarter. Third quarter. Two lectures and three laboratory periods per week. Laboratory deposit, \$2.00. DENNY. Identification of fabrics. Microscopic study of fibers. Physical and chemical tests. Economic phases of textile industry.

\*32. ECONOMICS OF CLOTHING.

61-62. CLOTHING—SELECTION AND CONSTRUCTION. Five credits per quarter. First and second quarters. One lecture and four laboratory periods per week. Prerequisite, course 8, or two years high school. Fine Arts, III. 8. Laboratory deposit, \$2.00. JUDY: *Connelly*

This course includes instruction in elementary free-hand drafting, the use of the pattern, fitting, simple tailoring, the construction of dresses of wool, silk and fine cotton.

101. GENERAL SURVEY. Three credits per quarter. Second quarter. Three lecture periods per week. 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.

103. FOODS—COMPARATIVE STUDIES OF FOOD MATERIALS AND COOKING PROCESSES. Three credits per quarter. Second quarter. Three laboratory periods per week. Prerequisite, course 5-6. Laboratory deposit, \$4.00. HESSLER.

Consideration of possible variations in fuels, utensils, methods and materials with reference to economy of time and labor and to nutritive value and cost.

106. NUTRITION—ELEMENTARY DIETETICS. Five credits per quarter. Second quarter. Two lectures and three laboratory periods per week. Prerequisite or parallel, course 4. Chem. 5-6, Zool. 7. Laboratory deposit, \$3.00. HESSLER.

Functions and nutritive value of food. The fate of the food stuffs in the body. Dietary standards. Computing of dietaries. Infant feeding. 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.

107. NUTRITION—DIETETICS. Five credits per quarter. First quarter. Two lectures and three laboratory periods per week. Prerequisites, course 5-6, Chem. 144, Zool. 7. Laboratory deposit, \$3.00. ~~HESSLER~~ RAITT

Principles of human nutrition. Application to needs of individuals and groups under varying conditions. Dietary standards. Methods of computing dietaries.

\* Not offered in 1918-1919.

108. HOME NURSING. (War Course.) Three credits per quarter. First quarter. Three laboratory periods per week. Prerequisites, courses 5-6, 106 or 107. Laboratory deposit, \$2.00. HESSLER.

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.

109. SPECIAL FOOD PROBLEMS. Three credits per quarter. First quarter. Prerequisite, course 106 or 107. Laboratory deposit, \$1.00. RAITT.

Marketing, cold storage, dietaries, adulterations, preservatives. A consideration of food habits.

110. NUTRITION. Three credits per quarter. Third quarter. Three lecture periods per week. Prerequisite, home economics 107. HESSLER.

Study of the development of the science of nutrition. Review of present status. Original sources. Library research.

121. LARGE QUANTITY COOKERY. Three credits per quarter. Second quarter. Two laboratory periods per week. Laboratory deposit, \$4.00. CLARKE.

Preparation of food in large quantities for cafeterias, tea rooms, dormitories, hospitals and camps. Laboratory practice.

122. BUYING AND DIETARIES. Three credits per quarter. Third quarter. Three lectures per week. CLARKE.

Marketing, buying, institution equipment and supplies. Planning menus for dormitories, hospitals, cafeterias and tea rooms.

\*123. INSTITUTIONAL MANAGEMENT.

124. PRACTICE WORK I. (War Course.) Three credits per quarter. First, second or third quarter. Conferences, services in food preparation. CLARKE.

At least nine hours per week spent in the different departments of the University Commons, under supervision of the instructor in charge.

125. PRACTICE WORK II. Three credits per quarter. Second and third quarters. Conferences, services in food preparation. CLARKE.

Eight hours' work off the campus among the following: Tea room, cafeteria, school lunch room, hospital.

<sup>Sp</sup> 130-131. CLOTHING—DRESSMAKING. Six credits per quarter. Third quarter. Two three-laboratory periods per week. Prerequisite, course 61, Fine Arts III, 167-168. Laboratory deposit, \$8.00. JUDY.

This course includes designing and draping on the form, extensive practice in dress construction and a study of trade conditions.

<sup>Sp</sup> 133. CLOTHING—COSTUME DESIGN. Five credits per quarter. Third quarter. Five laboratory periods per week. Prerequisite, Fine Arts III, 3. Laboratory deposit, \$5.00. 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.

138 - Stone Practice are Small w/lin  
136 - Dept Stone Service 3cr. " Spring

DEPARTMENTS OF INSTRUCTION

139

140 - Stone Practice II are. sp small

185. CLOTHING—MILLINERY. Three credits per quarter. First quarter. Three laboratory periods per week. Prerequisite, course 8, Fine Arts III, 8. Laboratory deposit, \$4.00. *J. J. Connelly*

A course including the making and covering of frames, fitting and trimming of hats and a study of trade methods and materials.

148. HOME DECORATION. Three credits per quarter. Second and third quarters. Two lectures and one laboratory period per week. Prerequisite, Fine Arts III, 8. Laboratory deposit, \$1.50. DENNY.

Application of structural art principles to choice and arrangement of household furnishings. Color and texture studies. Relative costs.

145. HOUSEHOLD MANAGEMENT. Three credits per quarter. Second quarter. Prerequisite, courses 5-6, 61-62, 107, 143, 144. RAITT.

Organization of the household. The budget and its apportionment. Housewifery. Application of the principles of scientific management to the household.

<sup>to sp</sup> 146-147. TEACHERS' COURSE. Three credits per quarter. Second and third quarters. Prerequisite courses, 5-6, 107, 61-62, 143, 144. RAITT.

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.

150. FOODS—PROBLEMS IN FEEDING NAVAL, MILITARY AND INDUSTRIAL GROUPS. (War Course.) Three credits per quarter. Laboratory deposit, \$4.00. CLARKE.

Principles of food preparation; selection of food; meal planning; marketing; equipping kitchens.

200. SPECIAL FOOD PROBLEMS. Three credits per quarter. Prerequisite, courses 5-6, 107, 109, Chem. 88 and 118. Laboratory deposit, \$1.00. RAITT.

Investigation of local food products.

202. SEMINAR. Four credits per quarter. Four lectures per week. Prerequisite, 80 credits in home economics, including course 145-146. 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. Credits to be arranged. HESSLER.

Investigations of recent discoveries in the biological or physical sciences of immediate value to the housewife and consideration of methods for their utilization.

HYGIENE

Gymnasium

(See Physical Education)

ITALIAN

Denny Hall

(See Romanic Languages)

## JOURNALISM

Commerce Hall

PROFESSOR DYMENT,<sup>1</sup> ASSISTANT PROFESSORS RUSSELL, KENNEDY, GOSS,  
MISS EDGINGTON, PROFESSOR AYER OF THE SCHOOL OF LAW,  
DR. LESTER OF THE DEPARTMENT OF PHYSICS

## THIRD YEAR COURSES

101-102-103. **ELEMENTS OF JOURNALISM.** Three credits per quarter. First, second and third quarters. A year course, required of all majors. Laboratory deposit, \$2.00.

A general introduction to the newspaper business, and a course in practical reporting. Non-majors of junior or senior standing, particularly home economics students, may take two quarters. The emphasis is on actual reporting.

104-105-106. **MECHANICS OF PUBLISHING.** One credit per quarter. First, second and third quarters. One lecture and two laboratory periods per week. Laboratory deposit, \$2.00. Required of all majors. KENNEDY.

Head styles as they relate to the news value; head construction as it affects the sale of the paper; head harmony as it affects both; practice in the journalism laboratory; proofreading; application of paper, presswork, bindings, engravings; problems that deal with the productive side of printing and publishing; study of modern appliances; history of printing, with thesis.

107-108-109. **GENERAL ADVERTISING.** Three credits per quarter. First, second and third quarters. Two lectures and one discussion per week. First quarter compulsory for all majors; at least one more quarter advised. Third quarter is devoted to business writing, correspondence, sales letters, and reports. Laboratory deposit, \$2.00, which covers textbooks and advertising publications. RUSSELL.

History, purpose, and place of advertising in the business world; psychological factors; principles of copy construction; advertising display; problems of the small advertiser, such as the retailer and professional man; study of local media and current campaigns; some practice in preparation of simple copy.

110-111-112. **CURRENT EVENTS.** One credit per quarter. One lecture per week. At least one quarter compulsory for majors.

A study of the principal news happenings, state, domestic, and foreign; a general information course in world movements; newspaper, periodical, magazine, and occasionally new book readings. Open to any non-major above freshman rank.

## FOURTH YEAR COURSES

151-152-153. **EDITING AND ADVANCED NEWSWRITING.** Three credits per quarter. First, second and third quarters. Two lectures and one discussion per week. Laboratory deposit, \$2.00.

<sup>1</sup> Absent on war service.

Copyreading, headwriting, and other desk work, with a study of types of newswriting and practice in getting and writing news stories involving difficulties. During 1918-1919 this course will include some of the work usually given in courses 154, 155, 156, 157, 158, 159.

\*154-155-156. FEATURES, EXCHANGES, SYNDICATES.

\*157-158-159. HISTORY OF JOURNALISM, EDITORIAL WRITING, NEWSPAPER POLICY.

160-161-162. SHORT STORY. Three credits per quarter. First, second and third quarters. Two lectures and one discussion per week. Laboratory deposit \$2.00, which covers prescribed textbooks, short story periodicals, library facilities, and use of typewriters. EDGINGTON.

A critical appreciation of the composition, human aspects, and tendencies of the short story, and its place in literature. Short stories must be produced throughout the year at regular intervals, and are graded in proportion to their probable marketability. Open to non-majors above sophomore rank who bring a recommendation from the department of English. (English 101-102).

163-164-165. THE BUSINESS OFFICE. Three credits per quarter. First, second and third quarters. Two lectures and one discussion per week. Laboratory deposit \$2.00. KENNEDY.

Cost finding; estimating, simplified accounting for newspaper plants; business office management; buying and selling; efficiency; plant hygiene; letter composition. This course is intended primarily for students who aspire to ultimate ownership or management of newspaper or job plants. Open to students in the school of business administration who have had prerequisite training. Compulsory for majors on the business side.

166-167-168. ADVANCED ADVERTISING AND PUBLICITY. Two credits per quarter. First, second and third quarters. One lecture and one discussion per week. Laboratory deposit \$2.00. RUSSELL.

An intensive study of mediums and markets is made, campaigns are prepared and copy is written.

169-170-171. COUNTRY JOURNALISM AND CIRCULATION MANAGEMENT. Three credits per quarter. First, second and third quarters. Two lectures and one discussion per week. Laboratory deposit, \$2.00. RUSSELL.

Study of successful country newspapers; methods of handling local advertising, and of securing and handling foreign business; circulation; scientific management as applied to a newspaper plant; office systems and simple front office accounting. Compulsory for majors on the business side.

\*172-173-174. TRADE PUBLICATIONS AND PUBLICITY. DYMENT, RUSSELL.

175. SENIOR CONFERENCE. One credit per quarter. First, second or third quarter. One recitation per week. Required of senior majors. Journalism faculty.

A course in practical newspaper problems and procedure in all departments.

## SUBJECTS PRESENTED BY OTHER DEPARTMENTS

54-55-56. BUSINESS LAW. Three credits per quarter. AYER.

The law of libel, with copyright, postal, advertising, circulation, and state and federal statutes generally as they relate to the publishing industry, will be covered in the first quarter of this course. Majors are advised to take all three quarters, however. Open to journalism majors of sophomore standing. For detailed description see curriculum of the College of Law.

179-180-181. FREEHAND DRAWING. One credit per quarter. WOLF.

A foundation course for newspaper and magazine illustrating and cartooning. For further description, see curriculum of the College of Fine Arts.

†54. NEWSPAPER PHOTOGRAPHY.

## LATIN

Denny Hall

(See Classical Language and Literature)

## LAW

Commerce Hall

(No Law School credit is given for these courses)

54-55-56. BUSINESS LAW. Three credits per quarter. First, second and third quarters. AYER.

This course covers the fundamental principles of law. The more general and practical principles are developed from problems and selected cases, particularly as related to the law of contracts, property, agency, negotiable paper, insurance, partnership and corporation, with special lectures as to the statutory regulations.

## LIBRARY ECONOMY

The Library

PROFESSOR HENRY, ASSOCIATE PROFESSOR SMITH, MISS ASHLEY, MISS BLODGETT,  
MISS ANDRUS

(For curriculum in Library Economy see pages 85-86.)

## COURSES

101. ORDER ACCESSION AND CIRCULATION. Two credits. First quarter. ASHLEY.

In this course the routine of ordering, receiving, checking; accessioning and mechanical preparation of books and elements of trade bibliography are treated. Also loan administration, covering charging systems, registra-

† May not be given in 1918-1919.

tion of borrowers, circulation of books and circulation records are dealt with.

**102. CLASSIFICATION AND SUBJECT HEADINGS.** Three credits. First quarter. **BLODGETT.**

The work in classification is mainly a study of the Decimal System. An exercise in classifying selected books follows each lecture with later revision, correction and discussion. Other classification systems are briefly described. Under subject-headings lectures and practice work with selected books are given.

**103-104. CATALOGING.** Three credits per quarter. Second and third quarters. **BLODGETT.**

The course in cataloging, including book numbers, shelf-listing, alphabeting and name lists consists of lectures, recitations and practice work selected as illustrative examples of rules given in class. The A. L. A. rules are used as a basis for study.

<sup>W X 7</sup>  
**105-205-207. REFERENCE.** Two credits per quarter. First, second and third quarters. **SMITH.**

The purpose of these courses is to give a working knowledge of important types of reference books and to develop the power of research. Lectures cover books and methods. Practical problems are assigned and worked out. These courses include also the work with government documents.

**208. SUBJECT BIBLIOGRAPHY.** Two credits per quarter. Third quarter. **SMITH.**

This course provides practical work in the preparation of bibliographic lists. Lectures are given on sources and methods of work. Problems cover arrangement and form of entry. One piece of independent bibliographic work is required of each student.

**109-110-211-212-213. PRACTICE.** Fourteen credits. Second and third quarters of senior year; first, second and third of graduate year.

Each student is expected to do approximately one hour of practice or laboratory work under expert personal supervision for each class period of instruction as a test of practical ability and as an opportunity to exhibit personality in service. The practice work is given in both the University library and the Seattle Public library and consists of seven hours per week for five quarters or fourteen hours per week for thirty weeks.

**214. PRINTING AND BINDING.** One credit. First quarter. **HENRY.**

This course consists of lectures and readings on the evolution of the book into its present form; history of printing and paper making, a study of binding and binding materials; also the origin of periodical literature, how it varied from books in form and purpose and a study of marked types of present day publications and instruction in the use and care of periodicals in a library.

106 - Reference 2 or Sp Small

215-216. **LIBRARY ORGANIZATION AND EXTENSION.** One credit first quarter, two credits second quarter. HENRY.

In this course such subjects are treated as legalization and organization of a general library system for city, county or state, as the unit of organization; also the organization of various types of libraries with varying degrees of equipment. The course deals also with all means, methods, and motives for extending library facilities from the centre of each unit.

217-218-219. **BOOK SELECTION.** Two credits per quarter. First, second and third quarters. ASHLEY.

This course is designed to cultivate taste and judgment in the valuation of books through a study of the principles of book selection, annotation and book reviewing. Standards of taste are developed through a practical study of the typically classed books.

Book selection aids, editions and publishers are studied and discussed.

220. **LIBRARY ADMINISTRATION AND LIBRARY LITERATURE.** Two credits. Third quarter. HENRY.

Lectures, readings and discussions upon library legislation, local taxation, library budget, and all means and instruments for realizing the educational and social functions of the library. Reading and class discussion of the literature of libraries and librarianship, including library periodicals and the publications of library organizations, with special emphasis upon the best papers in the A. L. Proceedings for recent years.

221. **WORK WITH CHILDREN AND SCHOOLS.** One credit. Third quarter. ANDRUS.

This course is planned to meet the needs of general library assistants and librarians in charge of small libraries. It outlines the aims of library work with children and the methods which have been found most successful. It deals with principles of book selection with special attention to choice of books for children of various ages. Students read and discuss children's books with these ideals in mind.

222. **SPECIAL LECTURES BY ACTIVE LIBRARIANS.** One credit. Third quarter.

In this course ten lectures are given by as many persons each upon some vital problem of library service or administration. These persons are selected because of their respective experiences and successes in dealing with the problems treated.

223. **STUDY OF A SELECTED PUBLIC LIBRARY.** One credit. Third quarter. HENRY.

Each student is assigned to make a study of some specific public library reasonably near to Seattle and write a report upon its general policy and plans of organization, extension and administration.

## MATHEMATICS

Science Hall

PROFESSOR MORITZ, ASSISTANT PROFESSORS GAVETT, CARPENTER AND NEIKIRK,  
DRS. BELL, SMALL, WEAR.

### REQUIREMENTS OF THE DEPARTMENT

For a major in mathematics, 86 credits, including courses 5 and 9.

Candidates for the normal diploma must complete course 127 (teaching course) in addition to the major requirement.

Candidates who are not majors in mathematics but work to teach mathematics as a minor subject must have earned at least 15 credits in mathematics, including Math. 4 and Math. 5, before receiving the recommendation of the department.

Major students in mathematics should, if possible, select their courses in mathematics in the following order: Math. 4, 5, 6, 7, 8, 9. In addition they should elect physics as their freshman science and take solid geometry (Math. 7) in their freshman year.

Mathematics 4, 13, 19 are of immediate application to war or war industries. Mathematics 4, 5, 6, 7, 8, 9 are prerequisite to these courses.

NOTE.—During the period of the war the department reserves the right to withdraw any course in which there are an insufficient number of registrants.

### COURSES

1. **ADVANCED ALGEBRA.** Five credits per quarter. First or third quarter. Prerequisite, one year of high school algebra. Algebra from quadratics on.

2. **SOLID GEOMETRY.** Five credits per quarter. Second or third quarter. Prerequisite, one year of plane geometry.

4. **PLANE TRIGONOMETRY.** Five credits per quarter. First, second or third quarter. Prerequisite, one year of algebra and one year of geometry. For students in the Colleges of Liberal Arts, Science, Education, Pharmacy and Law.

5. **COLLEGE ALGEBRA.** Five credits per quarter. First or second quarter. Prerequisite, course 1 or one and one-half years high school algebra.

6. **ANALYTICAL GEOMETRY.** Five credits per quarter. Third quarter. Prerequisite, courses 1, 2 and 4. Primarily for students in the College of Science.

7-8-9. **CALCULUS.** Five credits per quarter. First, second and third quarters. Prerequisite, course 6.

Primarily for students in the College of Science. Elements of the differential and integral calculus.

11-12. **THEORY OF INVESTMENT.** Five credits per quarter. First and second, second and third, third and first quarters. Prerequisite, one year algebra, one year geometry.

Primarily for students in Commerce. The first quarter is devoted to a study of preliminary processes of algebra, including progression, 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.

18. **ELEMENTS OF STATISTICAL METHODS.** Five credits per quarter. Third quarter. Prerequisite, one year algebra, one year plane geometry.

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.

19. **MILITARY MATHEMATICS.** Five credits per quarter. First, second and third quarters. Prerequisite, one year algebra, one year plane geometry. **SMALL.**

Selected topics in algebra and trigonometry, with special application to war problems. Helpful as a preliminary course for applicants to the various officers' training courses.

51. **ALGEBRA.** Three credits per quarter. First, second or third quarter. Prerequisite, one and one-half years algebra, one year plane geometry. Primarily for students in the Colleges of Engineering and Mines.

52. **PLANE TRIGONOMETRY.** Three credits per quarter. First, second or third quarter. Prerequisite, course 51.

Primarily for students in the Colleges of Engineering and Mines.

53. **ANALYTICAL GEOMETRY.** Three credits per quarter. First, second or third quarter. Prerequisite, course 52.

Primarily for students in the Colleges of Engineering and Mines.

54. **MATHEMATICS FOR FORESTERS.** Five credits per quarter. First quarter. Prerequisite, one and one-half years algebra, one year plane geometry. **GAVETT.**

A study of advanced numerical and graphical methods and solution of plane triangles by trigonometric methods.

57-58-59. **MATHEMATICS FOR ARCHITECTS.** Five credits per quarter. First, second and third quarters. Prerequisite, one year algebra, one year plane geometry.

Algebra through quadratic equations and plane trigonometry through solution of triangles. Advanced topics in algebra; the elements of analytical geometry; elementary differential and integral calculus. **GAVETT.**

61-62-63. **CALCULUS.** Three credits per quarter. First, second and third quarters. Prerequisite, courses 2 and 53.

Primarily for students in the Colleges of Engineering and Mines.

61. (Calculus) War course

101. SPHERICAL TRIGONOMETRY, WITH APPLICATIONS. Two credits per quarter. First quarter. Prerequisite, courses 2 and 4. WEAR.

102-103. SOLID ANALYTICAL GEOMETRY. Two credits per quarter. Second and third quarters. Prerequisite, course 8 or 63. WEAR.

111-112-113. MATHEMATICS APPLIED TO CHEMISTRY AND PHYSICS. Two credits per quarter. First, second and third quarters. Prerequisite, course 8 or 63.

Elementary treatment with application of empirical equations, definite integrals, differential equations, probability and least squares.

114-115-116. ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS. Two credits per quarter. First, second and third quarters. Prerequisite, course 8 or 63. NEIKIRK.

With application to problems in physics, chemistry, astronomy and engineering.

117-118-119. PROJECTIVE GEOMETRY. Two credits per quarter. First, second and third quarters. Prerequisite, course 8 or 63.

\*121-122-123. NON-EUCLIDEAN GEOMETRY.

\*124-125-126. REAL VARIABLES.

127. TEACHERS' COURSE. Five credits per quarter. First quarter. Prerequisite, course 9. BELL.

Required of those who make mathematics their major study and who are applicants for the teacher's certificate.

\*130-131-132. VECTOR ANALYSIS.

133-134-135. ANALYTICAL MECHANICS. Two credits per quarter. First, second and third quarters. Prerequisite, course 9. GAVETT.

\*201-202-203. DIFFERENTIAL GEOMETRY.

\*204-205-206. MODERN ALGEBRA.

207-208-209. INFINITE SERIES. Three credits per quarter. First, second and third quarters. Prerequisite, courses 5 and 9. MORITZ.  
Including the theory of summability of divergent series.

211-212-213. FOUNDATIONS OF MATHEMATICS. Two credits per quarter. First, second and third quarters. Prerequisite, course 9. WEAR.

214-215-216. COMPLEX VARIABLES. Two credits per quarter. First, second and third quarters. Prerequisite, course 9. SMALL.  
Theory of functions of a complex variable.

217-218-219. ELLIPTIC AND THETA FUNCTIONS. Two to four credits per quarter. First, second and third quarters. Prerequisite, one year of graduate work in mathematics. BELL.

The theory will be developed in the lectures and amplified in the seminar by a study of the classical memoirs in the subject. The seminar

\* Not offered in 1918-1919.

will aim to develop the applications of the theory to research in the theory of numbers. Credit for seminar to be determined in each case.

251-252-253. **MATHEMATICAL JOURNAL AND RESEARCH CLUB.** No credit. First, second and third quarters. Prerequisite, open to all graduate students in mathematics.

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.

## MILITARY SCIENCE AND TACTICS

### Armory

All students in the University who are American citizens, and not physically disqualified, are required to take military training or naval training during their first two years. The present requirement is eight hours a week. About one-quarter of the work is given by lecture and text book instruction and the remainder is practical work.

For students who have completed the first two years of military training an advanced course is open, leading eventually to commissions in the Officers' Reserve Corps.

There is also a four-year curriculum, similar to that of the United States Military Academy, leading to the degree of Bachelor of Military Science and to a commission in the Officers' Reserve Corps.

The work in this department is given in the College of Naval, Military and Aeronautical Science. Further information may be found in the announcement of that college.

### COURSES

1-2-3. **MILITARY TRAINING.** Two credits per quarter. Required of all freshmen not taking Naval Training. Infantry Drill Regulations through the school of the company; Small Arms Firing Manual; intrenchments; signalling; service of security and information; military organization and policy; map reading; hygiene and sanitation. Practical work in these subjects will be accompanied by lectures and textbook study, the principal textbook being the *Manual for Non-Commissioned Officers and Privates*, edition of 1917 or later.

4-5-6. **MILITARY TRAINING.** Two credits per quarter. Required of all sophomores. A continuation of the work of 1, 2, and 3, with progressive study of all topics; school of the battalion; camp sanitation and expedients; marches; military history. The same text will be used as in the preceding courses, with references to various army manuals.

101-102-103-104-105-106. **MILITARY TRAINING.** Two credits per quarter. For students electing the course in Military Science who have completed courses 1, 2, 3, 4, 5, and 6. Duties of officers and non-commissioned officers, exemplified by practical work with the student corps; military sketching. Various texts and reference books will be used.

181. **MILITARY SCIENCE.** Three credits. Minor tactics, Field Service Regulations, field orders.

182. **MILITARY SCIENCE.** Two credits. Manual of Interior Guard Duty, map maneuvers.

183. **MILITARY SCIENCE.** Three credits. Map maneuvers, company administration, property accountability.

184. **MILITARY SCIENCE.** Three credits. Map maneuvers and tactical problems.

185. **MILITARY SCIENCE.** Two credits. Tactical problems.

186. **MILITARY SCIENCE.** Five credits. Psychology of war, tactical problems, courts-martial.

### NAVAL SCIENCE AND TACTICS

All students in the University who are American citizens, and not physically disqualified, are required to take naval training and military training during their first two years. The present requirement is eight hours a week.

There is also a four-year curriculum, similar to that of the United States Military Academy, leading to the degree of bachelor of naval science and to a commission in the United States Naval Reserve.

The work in this department is given in the College of Naval, Military and Aeronautical Science. Further information may be found in the announcements of that college.

The naval courses will open in the fall quarter of 1918-1919, but they cannot be described in detail, as the detail of a naval officer to take charge of the department has not been made at the time of printing this catalogue.

#### COURSES

*24-25-26*  
~~24-25-26~~ *Summer 21-22-23*  
 1-2-3. **NAVAL TRAINING.** Two credits per quarter. Required of all freshmen not taking Military Training.

*24-25-26*  
~~24-25-26~~ 4-5-6. **NAVAL TRAINING.** Two credits per quarter. Required of all sophomores not taking Military Training.

Advanced courses will be announced later.

121, 122, 123, 124, 125, 124 *Naval Training*  
 151, 152, 153, 154, 155, 156 - *Aeronautical Training*

#### ORIENTAL HISTORY, LITERATURE AND LANGUAGES

Denny Hall

PROFESSOR GOWEN, ASSISTANT PROFESSOR SKINNER, MISS SIMEON

The requirement of one year's work in ancient languages and literature may be satisfied by courses 11, 12 and 13. Courses 1, 2 and 3 count for credits in the Department of History, and 4, 5 and 6 in the Department of Philosophy. Courses 105, 106, 109, 110, 111 and 112 are for juniors, seniors and graduates.

*Nursing*

1 *Nursing as a profession* 2 or *Sp Bartlett*

## COURSES

1. HISTORY OF CHINA I. Three credits per quarter. First quarter. History of China from the earliest time to the Manchu conquest. GOWEN.

2. HISTORY OF CHINA II. Three credits per quarter. Second quarter. History of China from the Manchu conquest to the present. GOWEN.

3. HISTORY OF JAPAN. Three credits per quarter. Third quarter. General history of Japan from the beginning to the present. GOWEN.

8-8-8. <sup>for beginners</sup> RUSSIAN ELEMENTARY. Five credits per quarter. First, second and third quarters. SIMEON.

Elementary Russian, grammar and reading.

9 <sup>Elementary Russian 5 or 6, Simeon</sup>  
10-10-10. CHINESE ELEMENTARY. Two credits per quarter. First, second and third quarters. SKINNER.

The grammar and reading of the Kuan-hua (classical Chinese language).

11. LITERATURE OF INDIA. Five credits per quarter. First, second or third quarter.

12. LITERATURE OF EGYPT. Five credits per quarter. Second or third quarter.

13. LITERATURE OF PERSIA. Five credits per quarter. Third quarter. GOWEN.

Courses 11, 12, and 13, while independent, form one series. May be commenced in any quarter.

14. SEMETIC LITERATURE. One credit per quarter. First quarter. GOWEN.

The course will include the study of the Old Testament scriptures. It is continuous through the three quarters, but each quarter's work is independent and self-contained.

105. SANSKRIT. Five credits per quarter. First, second and third quarters. GOWEN.

Work to be arranged according to registration.

106. HEBREW. Five credits per quarter. First, second and third quarters. GOWEN.

Work to be arranged according to registration.

109-109-109. RUSSIAN ADVANCED. Five credits per quarter. First, second and third quarters. SIMEON.

111-111-111. CHINESE ADVANCED. Five credits per quarter. First, second and third quarters. SKINNER.

Advanced study of the Kuan-hua (classical Chinese language). SKINNER.

114-115-116. HISTORY OF RELIGION. (See Philosophy 114-115-116.) Three credits per quarter. First, second and third quarters. GOWEN.

Primitive conceptions of religion, including animism and fetichism. The religion of Egypt and the Euphrates Valley (first quarter); religions

20, 21 - Oriental Institutions: Japan 2  
F + W. Gowen

of the Far East, Confucianism, Taoism, Shintoism, Brahminism, Buddhism, Hinduism (second quarter); Judaism, Mohammedanism and Christianity (third quarter).

## PHILOSOPHY

Denny Hall

PROFESSOR SAVERY, ASSISTANT PROFESSORS DUCASSE, GUTHRIE.

The Liberal Arts requirements are a total of ten credits in the Departments of Philosophy and of Psychology.

The College of Science requirements are five credits in Philosophy.

The above requirements may be satisfied from the following courses: Philosophy 1, 2, 5.

Philosophy 1, 2A and 5 are suited to Arts-Law students.

Psychology 1 is required of majors in Philosophy and will satisfy a part of the major requirement.

Philosophy 2A, 131, 132, 132 are of immediate application to war or war industries.

### COURSES

1. INTRODUCTION TO PHILOSOPHY. Five credits per quarter. First, second or third quarter. SAVERY, DUCASSE, GUTHRIE.

An elementary study of the main problems of philosophy.

### 2. ETHICS.

A. SOCIAL PROBLEMS AND THE WAR. (War Course.) Five credits per quarter. Second quarter. SAVERY.

A course in social ethics. There will be a short introductory study of the nature of the Social Ideal and "the Social Problem." Succeeding this the following topics will be treated: the meaning and value of autocracy and democracy in government; the tendency toward economic democracy; the nature of socialism, communism, syndicalism, and anarchy; the beliefs of the I. W. W., including sabotage and the universal strike; the reform of the legal machinery; social theories of art (and their connection with Ruskin and Tolstoi); the problem of eugenics (and its connection with the views of Nietzsche and Bernard Shaw); and the relation of education to all the other problems discussed. The course will conclude with an account of social religion (as contrasted with individual religion), and of the religion of democracy and the movement toward it at the present time.

B. ELEMENTS OF ETHICS. Five credits per quarter. Third quarter. GUTHRIE.

Study of value, the good, duty, virtue. Application of ethical principles to problems of economic life, government, law, art and religion.

5. ELEMENTS OF LOGIC. Five credits per quarter. Second and third quarters. DUCASSE.

The aim of the course is to acquaint the student with the conditions that make statements clear, evidence adequate, and reasoning valid; and to establish in the student habits of mind productive of these results in

his own processes. Among the topics considered will be the chief forms of irrelevancy, inconsistency and ambiguity and the means to avoid them; the application of the principles of evidence to questions of scientific and of judicial proof, including the use of testimonial and circumstantial evidence; and the structure and laws of validity of deductive arguments. Practical applications will be emphasized throughout.

101-102-103. HISTORY OF PHILOSOPHY. Three credits per quarter. First, second and third quarters. Students may enter course 102 or 103 if they have taken course 1. 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 briefly touched upon at the end of the course.

\*105. METAPHYSICS. Three credits per quarter. Second quarter. Prerequisite, course 1. 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.

\*107-108-109. PHILOSOPHY OF SCIENCE.

\*118. PHILOSOPHY OF RELIGION.

<sup>F Y Sp</sup> 114-115-116. HISTORY OF RELIGION. (Identical with Oriental Languages and Literature 114-115-116.) Three credits per quarter. First, second and third quarters.

Primitive conceptions of religion, including animism and fetichism. The religion of Egypt and the Euphrates Valley (first quarter); religions of the Far East, Confucianism, Taoism, Shintoism, Brahminism, Buddhism, Hinduism (second quarter); Judaism, Mohammedanism, and Christianity (third quarter).

<sup>Sp</sup> 123. PHILOSOPHY IN ENGLISH LITERATURE OF THE NINETEENTH CENTURY. Five credits per quarter. Third quarter. Alternates with course 124 as requirement for seniors in library training course. Prerequisite, course 1. 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.

\*126. PHILOSOPHY IN THE MODERN DRAMA.

\* Not offered in 1918-1919.

129. <sup>Sp</sup>ESTHETICS. Five credits per quarter. Third quarter. 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; the theories of beauty, and art of Plato, Ruskin, Tolstoi, Schopenhauer, Benedetto Croce; the views of Oscar Wilde and Rodin on the function of the artist and the critic in society; the characteristics of the artist's mind and the views of Plato, Schopenhauer on genius; the esthetic significance of such modern art movements as impressionism, cubism, futurism, imagism, vorticism, etc.

131. <sup>1+Sp</sup>PHILOSOPHY OF THE WAR. (War Course.) Five credits per quarter. First and third quarters. SAVERY.

The course will consist of two parts: first, a sociological and psychological account of war in general, and second, a study of the philosophical ideas underlying the present conflict. The following topics will be considered: the origin and development of war, the increase in its extent and the decrease in its frequency, the causes and possible results of war and of this war, the psychology of war, the history of opinion about war, ideals of world peace and world federation, retension of pacifism, and in the second part, the Kantian view of duty and sacrifice, Fichte's idea of the mission of Germany, Hegel's conception of the state contrasted with the Greek and English conceptions, the ideas of Trietschke and Bernhardt, the relation of Nietzsche's philosophy to the German view of autocracy and "frightfulness," the issue of autocracy versus democracy, the meaning of the two Russian revolutions, German biology and the war, Machiavelli and diplomacy.

132. NIETZSCHE AND THE WAR. (War Course.) Three credits per quarter. Second quarter. Prerequisite, course 1. DUCASSE.

The Philosophy of the Will in Schopenhauer, and Nietzsche. The Will to live and the Will to power. Contrast of Schopenhauer pessimism and philosophy of renunciation, with Nietzsche's affirmation of the value of life and philosophy of self assertion. The Saint and the Superman. Brotherhood and the Superstate.

\*142. ADVANCED LOGIC.

## PHYSICAL EDUCATION AND HYGIENE

DR. HALL,<sup>1</sup> DIRECTOR FOR MEN; ASSISTANT PROFESSOR ARBUTHNOT, ACTING DIRECTOR FOR MEN; DR. VON PHUL, MR. HUNT, MR. VANDERVEER, MISS MERRICK, DIRECTOR FOR WOMEN; MISS BAITT, MISS HARRINGTON, MISS PRAY, DR. IRWIN, MRS. BLOOM.

During the present war emergency, all freshmen and sophomores will not be held for the one hour weekly recreation requirement, on account of drilling eight hours weekly. Juniors and seniors, however, unless enrolled in the advanced military science course, must arrange with the director for two hours weekly of healthful recreation. A wide choice is offered by

\* Not offered in 1918-1919.

<sup>1</sup> Absent on war service.

the department. All freshman and sophomore men excused from military science and transferred to physical education must arrange with the director for three additional hours of recreation. Recreation gymnasium classes are held at 11:00 a. m., 3:00, 4:00, 5:00 p. m. daily.

#### REQUIREMENTS FOR MEN

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 36 hours, exclusive of courses 1-2-3, 51-52-53.

Courses 1-2 and 51-52 are prerequisite for all advanced courses except 103.

Zoology 3-4 and 5-6 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.

#### 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.

1. HYGIENE. First quarter. VON PHUL.
2. HYGIENE. Third quarter. VON PHUL.

#### 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 15. The second period is devoted to out-of-door work.

After a physical examination given to each student 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 to 54, inclusive, 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 all men students must pass a satisfactory physical examination and have practiced at least thirty days.

#### COURSES

1-2-3. CALISTHENICS AND ATHLETICS. One credit per quarter. First, second and third quarters. Introductory course for first year men. ARBUTHNOT.

\* 51-52-53. *sp* GYMNASTICS AND ATHLETICS. One credit per quarter. First, second and third quarters. Prerequisite, course 1-2-3. For second year men. ARBUTHNOT, HEDRICK.

\*104. HYGIENE: EMERGENCIES. One credit per quarter. ARBUTHNOT. Especially accidents that may arise on athletic fields, on public playgrounds or in the gymnasium.

\*118. CORRECTIVE GYMNASTICS AND PRESCRIPTION OF EXERCISE. Two credits per quarter. Prerequisite, majors in Physical Education only. ARBUTHNOT.

\* \* *sp*  
115-116-117. INTRAMURAL ATHLETICS. First, second and third quarters. Two periods per week.

Corrective gymnastics, systematic exercise in class. Required of all junior men. ARBUTHNOT, HUNT, VANDER VEER.

\* 121-122-123. RECREATION. One credit per quarter. First, second and third quarters. Two periods per week. ARBUTHNOT, HEDRICK.

Healthful exercises and games. Required of all junior men.

*134 - advanced gym. practice 3 or sp. Arbutnot*  
\*151-152. KINESIOLOGY AND ORGANIZATION. Two credits per quarter. Prerequisite, Zoology 3-4. ARBUTHNOT.

Mechanics and animal motion. Practical lectures and laboratory practice.

\*153. PHYSICAL EXAMINATIONS AND ANTHROPOMETRY. Three credits per quarter. For majors only. ARBUTHNOT.

Lectures and laboratory practice.

\* 154. GAMES OF SKILL AND SUPERVISION OF ATHLETICS. Two credits per quarter. First, second or third quarter. ARBUTHNOT, HUNT, VANDER VEER.

Theory and practice.

155-156-157. INTRAMURAL ATHLETICS. First, second and third quarters. ARBUTHNOT, HUNT, VANDER VEER.

A continuation of courses 115-116-117. Required of all senior men.

\* 161-162-163. RECREATION. One credit per quarter. First, second and third quarters. Two periods per week.

A continuation of courses 121-122-123. Required of all senior men.

NOTE.—Courses 115-116-117 may be substituted for courses 121-122-123, and courses 155-156-157 for courses 161-162-163 at the discretion of the Director of Physical Education for Men.

#### REQUIREMENTS FOR WOMEN

All women are required to participate in some form of healthful exercise during the first two years of their college course. The kind of exercise is determined by the result of the physical examination. Entering students are required to have a physical and medical examination.

A uniform suit for women is required. The fee, which will depend upon the market price of suits (approximately \$8.00 to \$10.00) is to be paid upon registration. It consists of: 2 white middie blouses; black

serge bloomers; black gymnasium shoes. No part of suit should be purchased before entering college.

#### SPORT FOR SPORT'S SAKE

All students are urged to secure at least two hours of recreative exercise each day, and the facilities of the department are open for this purpose whenever not required for prescribed activities. Advice and direction may be secured by any student at any time.

#### TOURNAMENTS AND CONTESTS

Intramural tournaments and contests are conducted in all sports under the supervision and control of the department. The Women's League and the Women's Athletic Association cooperate with the department in the conduct of women's activities.

Freshmen: Three periods per week, one period hygiene, two periods practice. Courses 1 to 11.

Sophomores: Three periods per week, one period food, two periods practice. Courses 51 to 65.

#### REQUIREMENTS FOR A MAJOR

The completion of 36 hours, exclusive of the 12 hours required of freshmen and sophomores.

#### COURSES

1-2-3. GYMNASTICS AND HYGIENE. Two credits per quarter. First, second and third quarters. First year women. MERRICK, PRAY, IRWIN.

5-6-7. CORRECTIVE GYMNASTICS AND HYGIENE. Two credits per quarter. First, second and third quarters. First year women. BLOOM, IRWIN.

10-11. ATHLETICS AND HYGIENE. Two credits per quarter. Second and third quarters. Prerequisite, courses 1-2-3. First year women. HARRINGTON, PRAY, IRWIN.

51-52-53. GYMNASTICS AND FOOD. Two credits per quarter. First, second and third quarters. Second year women. MERRICK, PRAY, RAITT.

<sup>54 - Food 1 cr</sup>  
55-56-57. CORRECTIVE GYMNASTICS AND FOOD. Two credits per quarter. First, second and third quarters. Second year women. BLOOM, RAITT.

<sup>58 Food 1 cr</sup>  
59-60-61. ATHLETICS AND FOOD. Two credits per quarter. First, second and third quarters. Second year women. PRAY, HARRINGTON, RAITT.

63-64-65. DANCING AND FOOD. Two credits per quarter. First, second and third quarters. Second year women. PRAY, RAITT.

101-102-103. METHODS AND PRACTICE. Four credits per quarter. First, second and third quarters. For majors only. MERRICK, PRAY, HARRINGTON.

107-108-109. **PLAYS AND GAMES.** Three credits per quarter. First, second and third quarters. A normal course for juniors and seniors. HARRINGTON.

117-118-119. **FOLK AND ESTHETIC DANCING.** Three credits per quarter. First, second and third quarters. A normal course for juniors and seniors. HARRINGTON.

123. **ANTHROPOMETRY.** One credit per quarter. First quarter. For majors only. MERRICK.

124. **ADVANCED GYMNASICS WITH APPARATUS.** Three credits per quarter. Second quarter. For majors only. ARBUTHNOT.

125-126. **CORRECTIVE GYMNASICS AND PRESCRIPTION OF EXERCISE.** Three credits per quarter. First and second quarters. For majors only. Lectures. BLOOM.

127 - *Corrective gym. Theory 3 cr Bloom Sp*  
129-180-181. **CORRECTIVE GYMNASICS.** Three credits per quarter. First, second and third quarters. Must be accompanied or preceded by course 125-126. For majors only. Laboratory practice. BLOOM.

185. **KINESIOLOGY.** Two credits per quarter. Third quarter. For majors only.

\*187. **NORMAL DIAGNOSIS.**

✓189. **GAMES OF SKILL AND SUPERVISION OF ATHLETICS.** Three credits per quarter. Third quarter. For majors only. PRAY, HARRINGTON, ARBUTHNOT, SEXSMITH, HUNT, VANDER VEER.

## PHYSICS

Denny Hall

PROFESSOR OSBORN, ASSISTANT PROFESSORS BRAKEL AND ANDERSON,<sup>1</sup> MR. GILBREATH, DR. LESTER,<sup>1</sup> TEACHING FELLOWS

The following order of election of courses for Arts and Science students is suggested: 1, 2, 3, 101, 102, 103, 104, 105.

Courses 1-2, 3, 48-49, 101, 102, 103, 104, 105, 106 and 109 are primarily for students in Arts and Science.

Courses 87, 89-90, 92-98, 97-98-99, and 114 are primarily for students in Applied Science.

Courses 50-51 and 54 are special courses.

Courses 54, 139, 169 are of immediate application to war or war industries.

Courses 1, 2, 3, 97, 98, 99, 116 are prerequisite to these courses.

## COURSES

W+Sp  
✓1-2. **GENERAL PHYSICS.** Five credits per quarter. First and second quarters. Two lectures, two class and one three-hour laboratory periods per week. Prerequisite, high school physics. Course 1-2 will satisfy the

<sup>\*</sup> Not offered in 1918-1919.

<sup>1</sup> Absent on war service.

15. *gen physics (War course)*

physical science requirements in the Colleges of Liberal Arts and Science. OSBORN.

8. GENERAL ELECTRICITY. Five credits per quarter. Third quarter. Two lectures, two class and one three-hour laboratory periods per week. Prerequisite, course 1-2. BRAKEL.

\*48-49. ELEMENTARY PHYSICS. Five credits per quarter. First and second quarters. Four class and one three-hour laboratory periods per week. For students without high school physics these courses will satisfy the physical science requirement in the Colleges of Arts and Science. GILBREATH.

50-51. SOUND AND MUSIC. Five credits per quarter. Second and third quarters. Three class and two three-hour laboratory periods per week. For students in the College of Fine Arts. OSBORN.

\*54. ELEMENTS OF PHOTOGRAPHY. Three credits per quarter. Second and third quarters. Two class and one three-hour laboratory periods per week. Prerequisite, high school physics or chemistry. OSBORN.

\*87. ACCOUSTICS AND ILLUMINATION. Five credits per quarter. First quarter. Prerequisite, college physics. For students in architecture. OSBORN, ANDERSON.

89-90. PHYSICS OF THE HOME. Five credits per quarter. First and second quarter. Four class and one laboratory periods. For students in home economics or women in liberal arts. OSBORN.

\*92-93. GENERAL PHYSICS. Five credits per quarter. First and second quarters. For 1918-1919 this course will be combined with course 1-2 for forestry and pharmacy students, and with courses 1-2, 3 for pre-medical students. Prerequisite, high school physics. OSBORN.

97-98-99. PHYSICS FOR ENGINEERS. Five credits per quarter. First, second and third quarters. Three class and two three-hour laboratory periods per week. Prerequisite, high school physics and fifteen hours of college mathematics. BRAKEL.

†101. MECHANICS. Four or five credits per quarter. First quarter. Four class and one three-hour laboratory periods per week. The laboratory work may be omitted. Prerequisite, courses 1-2 or 48-49, Math. 4. ANDERSON.

\*†102. HEAT. Five credits per quarter. Second quarter. Class and laboratory work. Prerequisite, course 1-2 or 48-49, Math. 4. LESTER.  
An experimental and theoretical treatment of heat.

\*†103. LIGHT. Five credits per quarter. Third quarter. Class and laboratory work. Prerequisite, course 101, Math. 7-8-9. OSBORN.

A discussion of reflection, refraction, interference and spectroscopy with the emphasis upon the physical interpretation and the historical development of the wave theory.

\* Not offered in 1918-1919.

† One of these courses may be given each quarter.

975. War course

985

976 physics for engineers who have had 975 or 15

\*104. VIBRATORY PHENOMENA AND SOUND.. Five credits per quarter. Second quarter. Class and laboratory work. Prerequisite, course 101, Math. 7-8-9. OSBORN.

The course takes up the development of the mathematical treatment of wave motions, and various types of vibrations.

\*105. HIGH TEMPERATURE THERMOMETRY. Three credits per quarter. Third quarter. Class and laboratory work. Prerequisite, course 102. LESTER.

\*106. ILLUMINATION. Three credits per quarter. First quarter. OSBURN.

\*109. PHYSICS OF A. C. AND D. C. CIRCUITS. Five credits per quarter. Four class and one laboratory periods per week. Prerequisite, course 8 or 114. BRAKEL.

A study of the fundamental principles of direct and alternating currents and the development of methods for the solution of practical problems.

116. <sup>Sup</sup> ELECTRICAL MEASUREMENTS. Three credits per quarter. Third quarter. Three three-hour laboratory periods per week. Prerequisite, courses 97-98-99. BRAKEL.

†189. BALLISTICS. (War Course.) Three credits per quarter. First quarter. BRAKEL.

†169. <sup>1165 electricity war course</sup> <sup>1395 Ordnance + Gunnery</sup> SPECIAL PROBLEMS FOR APPLIED PHYSICS. (War Course.) Five credits per quarter. Third quarter. Prerequisite, eight hours of physics. BRAKEL.

240. For 1918-1919, graduate work will be offered each quarter. The particular topic being selected after consultation with those desiring graduate work. OSBORN, BRAKEL.

## POLITICAL SCIENCE

Denny Hall

PROFESSOR J. ALLEN SMITH, MR. LAUBE, MR. JONES

The work in the Department of Political Science is designed to give a scientific account of the activities of the state and of the functioning of the electorate and legislative bodies in determining state action. Some of the courses are planned to give that knowledge of public affairs which ought to be a part of a liberal education, while others lead to the special study and investigation of problems and methods in the different branches of the government. The aim is to train the powers of observation and reasoning, to develop correct methods of research, and to apply the knowledge gained to the solution of practical problems.

### COURSES

1. ELEMENTS OF GOVERNMENT. Five credits per quarter. First, second or third quarter. SMITH.

\* Not offered in 1918-1919.

† One of these courses may be given each quarter.

An introductory course in which special attention is given to the citizen's part in government.

\*10. AMERICAN GOVERNMENT. Three credits per quarter. Second quarter. Prerequisite, course 1. SMITH.

A general study of the American system of national government.

\*11. STATE GOVERNMENT. Three credits per quarter. Third quarter. Prerequisite, course 1. SMITH.

A general study of the American system of state government.

50. COMPARATIVE GOVERNMENT. Three credits per quarter. First quarter. Prerequisite, course 1. LAUBE.

A study of the constitutional organization of the principal governments of Europe; with emphasis on political parties and current questions.

\*51. PRINCIPLES OF POLITICAL SCIENCE. Three credits per quarter. Second quarter. Prerequisite, course 1. LAUBE.

The principles, methods and relations of political science; origin, nature, forms and functions of the state; principles and methods of political organization.

\*52. POLITICAL PARTIES. Three credits per quarter. Third quarter. Prerequisite, course 1. LAUBE.

A study of the organization and methods of modern political parties; growth of the party system, theory of the party system, permanent organization, elements of cohesion, reform movements.

100.<sup>100</sup> MUNICIPAL GOVERNMENT. Three credits per quarter. First quarter. Prerequisite, 8 credits in political science. JONES.

Municipal organization and administration in the United States and Europe with some consideration of functions and problems.

\*102. MUNICIPAL PROBLEMS. Three credits per quarter. Third quarter. Prerequisite, 8 credits in political science. JONES.

This course will take up various problems of city government; special attention will be given to municipal utilities.

110. INTERNATIONAL LAW. Three credits per quarter. First quarter. Prerequisite, 8 credits in political science. LAUBE.

The law of nations; its nature, source and present status; intervention; laws of the war and peace; neutrals; the systematic establishment of positive rules for the governance of nations.

\*111. INTERNATIONAL POLITICS. Three credits per quarter. Second quarter. Prerequisite, 8 credits in political science. LAUBE.

The economic basis of international relationship; nationalism; imperialism; political relationship between advanced and backward peoples; self-determination; cultural interchange; community of policy.

\*112. ORIENTAL POLITICS. Three credits per quarter. Third quarter. Prerequisite, 8 credits in political science. LAUBE.

Relations of the European powers and the United States to China and Japan; the principal factors in the social and political life of the Orient.

\*125. PUBLIC FINANCE AND TAXATION. Three credits per quarter. First quarter. Prerequisite, course 1, Econ. 51. LAUBE.

Public expenditures; financial administration; taxation; public debts.

\*126. PROBLEMS IN TAXATION. Three credits per quarter. Second quarter. Prerequisite, course 125. LAUBE.

Advanced problems in taxation with special reference to the state of Washington.

\*127. MUNICIPAL FINANCE. Three credits per quarter. Third quarter. Prerequisite, course 125. LAUBE.

Revenues; expenditures; the budget; municipal debts; bond issues; sinking funds; financing special improvements.

150-151-152. READING COURSE. Two credits per quarter. First, second and third quarters. Prerequisite, 8 credits in political science. SMITH.

Discussions based on selective readings and political theory.

153-154-155. POLITICAL PROBLEMS. Two credits per quarter. First, second and third quarters. Prerequisite, 8 credits in political science.

200-201-202. SEMINAR. First, second or third quarter. Graduates.

## PSYCHOLOGY

Science Hall Attic

PROFESSOR SMITH, DR. WILTBANK, DR. LORING, MISS WILKINSON

The Liberal Arts requirements are a total of eight credits in the Departments of Philosophy and of Psychology.

The College of Science requirements are four credits in Psychology.

The above requirements may be satisfied from the following courses: Psychology 1, 101, 106, 111-112.

Psychology 1 is suited to Arts-Law students.

For Psychology as prerequisite to Education, see page 81.

Philosophy 1 or 101, 106 is required of majors in psychology and will satisfy a part of the major requirement.

### COURSES

1. GENERAL PSYCHOLOGY. Five credits per quarter. First or third quarter. Required for courses in education. Four lectures, one discussion section and one two-hour laboratory period per week. Laboratory deposit, \$2.00. SMITH, WILTBANK, LORING.

An introductory examination of the science as a whole.

101. <sup>5</sup> ~~PSYCHOLOGICAL~~ <sup>psychology for nurses</sup> PSYCHOLOGY. Five credits per quarter. Second quarter. Three lectures and two three-hour laboratory periods per week. Prerequisite, course 1. Laboratory deposit, \$1.00. LORING.

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.

<sup>SP</sup>  
 106. **EXPERIMENTAL PSYCHOLOGY.** Five credits per quarter. Third quarter. Two lectures and three three-hour laboratory periods per week. Prerequisite, course 1. Laboratory deposit, \$1.00. LORING.

Students taking this course receive training in laboratory methods, are made familiar with the more important kinds of psychological apparatus and perform many of the classical experiments in psychology.

<sup>W</sup>  
 109. **METHODS OF MENTAL AND PHYSICAL TESTS.** Three credits per quarter. Second quarter. Prerequisite, course 1. Laboratory deposit, \$1.00. SMITH, WILTBANK, WILKINSON.

Students will be given extensive training in applying tests for intelligence and for mental analysis. The principles of experimental procedure, methods of measurement, and statistical treatment of results form the major part of this course. The course is essential to work in clinical psychology.

<sup>W</sup> <sup>SP</sup>  
 111-112. **PRINCIPLES OF PSYCHOLOGY.** Five credits per quarter. Second and third quarters. Prerequisite, course 1. WILTBANK.

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.

<sup>114 - Hist of Psychology 3 cr W. Wiltbank</sup>

116. **ANIMAL BEHAVIOR.** Five credits per quarter. First quarter. Prerequisite, course 1. LORING.

This course is an analytic study of the behavior of lower animals. The principles of experimentation in this field will be determined.

<sup>W</sup>  
 121. **APPLIED PSYCHOLOGY.** Three credits per quarter. Second quarter. Prerequisite, course 1. WILTBANK.

The application of the principles of psychology to industry and to problems of personal efficiency in business. The student will select and develop a permanent interest to himself.

<sup>SP</sup>  
 124. **EDUCATIONAL PSYCHOLOGY.** Two credits per quarter. Third quarter. Prerequisite, course 1. WILTBANK.

A study of the psychology of learning, based upon experimental results, and an analysis of the explanations of learning will form the major part of the course.

126. **ABNORMAL PSYCHOLOGY.** Five credits per quarter. Second quarter. Prerequisite, course 1. For pre-medical students, and others by permission of instructor. WILTBANK.

Sleep, dreams, hypnosis, possessions, insanity, motor automatisms, multiple personality, the subconscious, and psycho-analysis.

<sup>7</sup>  
 131. **CHILD PSYCHOLOGY.** Five credits per quarter. First quarter. Prerequisite, course 1. WILTBANK.

A study of mental development from infancy to adult age. 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.

<sup>W</sup>  
 132. **PSYCHOLOGY OF EXCEPTIONAL CHILDREN.** Three credits per quarter. Second quarter. Prerequisite, course 1. SMITH, WILTBANK.

The nature and cause of mental defects and peculiarities of children, with special reference to methods of diagnosis and to physical pathology. Feeble-mindedness, retardation, neurosis, speech defects, delinquency.

<sup>7</sup> ~~151-152-153~~ <sup>SO</sup> UNDERGRADUATE RESEARCH. First, second and third quarters. Prerequisite, courses 1, 106.

Opportunity for original investigation.

<sup>7</sup> ~~201-202-203~~ <sup>SO</sup> GRADUATE RESEARCH. First, second and third quarters. Prerequisite, courses 1, 106.

## PUBLIC SPEAKING AND DEBATE

Denny Hall

PROFESSOR GORSUCH

For a major, 86 credits, 12 of which must be taken in English composition. Not more than 24 credits in this department may be counted toward the degree of bachelor of arts.

### COURSES

1. PRACTICAL PUBLIC SPEAKING. Five credits per quarter. First or second quarter. Prerequisite, English 1. GORSUCH.

An introductory course. Principles of public speaking are studied and short, original talks are prepared and delivered. The aim of the course is to accustom students to think while standing before the audience and to use definite means for definite purposes. Clear statement, sound argument, effective presentation, and development of will and personality are sought.

2. PRACTICAL PUBLIC SPEAKING. Five credits per quarter. Prerequisite, course 1. GORSUCH.

4. ARGUMENTATION. Five credits per quarter. First quarter. Prerequisite, English 1. —

\* 5. DEBATING. Three credits per quarter. Second quarter. Prerequisite, course 4. GORSUCH.

\* 6. DEBATING. Three credits per quarter. Third quarter. Prerequisite, course 4, 5. —

8. DRAMATIC READING. Five credits per quarter. First or third quarter. Prerequisite, English 1. GORSUCH.

⑧ *Dramatic Reading 5 or Gorsuch*  
 9. DEBATING. Three credits per quarter. Third quarter. Prerequisite, course 8. GORSUCH.

105. ADVANCED READING. Two credits per quarter. First, second or third quarter. GORSUCH.

## ROMANIC LANGUAGES

Denny Hall

PROFESSORS FREIN, OBER, ASSOCIATE PROFESSORS UMPHREY, PATZER, ASSISTANT  
PROFESSORS STRONG, RATTI, HELMLINGE<sup>1</sup>, SANTANDER, GOGGIO, A. F. B.  
CLARK, INSTRUCTORS WHITTLESEY, PHILBRICK

Students entering with high school credits in French or Spanish will be admitted to classes upon the basis of one high school semester counting as the equivalent of one University quarter.

Exceptional cases will be determined by the head of the department.

## I. FRENCH

## REQUIREMENTS OF THE DEPARTMENT

Courses 41, 101, 102, 103, 104, 105, 106, 191, 192, 193 are required of majors and of those who wish to be recommended to teach.

## COURSES

1-2-3. **ELEMENTARY.** Five credits per quarter. First, second and third quarters.

As much as possible French will be used in the class room, but one section of the class will be devoted exclusively to those who wish only the ability to translate French. (See Time Schedule.) Each of the courses 1, 2, 3 is repeated each quarter. No credits will be given for course 1 until course 2 has been completed.

4-5-6. **READING OF MODERN TEXTS.** Three credits per quarter. First, second and third quarters. Prerequisite to course 4 is course 3, or equivalent.

One section of the class will be devoted to translation, exclusively, while the other sections will read and be questioned in French.

Each of the courses 4, 5, 6, is repeated each quarter. Courses 7, 8, 9 are so arranged that they may be taken with courses 4, 5, 6, making a five-hour course.

7-8-9. **GRAMMAR, COMPOSITION, CONVERSATION.** Two credits per quarter. First, second and third quarters. Prerequisite to course 7 is course 3, or equivalent. These courses may be taken with courses 4, 5, 6.

41. **PHONETICS.** Three credits per quarter. First, second and third quarter. Prerequisite, course 1. FREIN.

This course is intended to furnish the student an opportunity to acquire a reasonably correct pronunciation, and to bring more order out of what seems a mass of exceptions. Every serious student of French, including the advanced ones who have not had it, should take this course.

101-102-103. **COMPOSITION AND CONVERSATION.** Three credits per quarter. First, second and third quarters. CLARK, HELMLINGE, PATZER, RATTI.

Courses 104-105-106 are so planned that they may be taken at the same hour as courses 101, 102, 103.

<sup>1</sup> Absent on war service.

104-105-106. **ADVANCED READING AND CONVERSATION.** Two credits per quarter. First, second and third quarters. CLARK, HELMLINGE, PATZER, RATTI.

Courses 104-105-106. **ADVANCED READING AND CONVERSATION.** Two credits per quarter. First, second and third quarters. CLARK, HELMLINGE, PATZER, RATTI.

Reading and commenting upon a few of the most important modern texts, and also a few of the best plays of Corneille, Moliere, and Racine. These courses may be taken with courses 101, 102, 103.

\*121-122-123. **THE FRENCH NOVEL.**

\*124-125-126. **THE SHORT STORY.**

\*131-132-134. **LYRIC POETRY.**

141-142-143. **THE FRENCH DRAMA.** Two credits per quarter. First, second and third quarters. Prerequisite, course 101, or equivalent.

Course conducted in French. History of the French drama from its origin. Assignments for outside reading and report to class. The course may be entered at the beginning of the second and third quarters.

<sup>7 W</sup> 151-152-153. **HISTORY OF THE FRENCH LITERATURE OF THE NINETEENTH CENTURY.** Two credits per quarter. First, second and third quarters. Prerequisite, course 101, or equivalent. RATTI.

Lectures in French. Assignments for individual reading, and report to class. Course may be entered at the beginning of second and third quarters.

\*161-162-163. **HISTORY OF THE FRENCH LITERATURE OF THE EIGHTEENTH CENTURY.**

\*171-172-173. **HISTORY OF THE FRENCH LITERATURE OF THE SEVENTEENTH CENTURY.**

~~\*~~ 181-182-183. **FRENCH LIFE.** Two credits per quarter. First, second and third quarters. Prerequisite, course 101. FREIN.

Lectures in French, on the customs, manners and life of the French. Intended for those who would know the French people more intimately.

191-192-193. **TEACHERS' COURSE.** Two credits per quarter. First, second and third quarters. Prerequisite, courses 41, 101, 102, 103. FREIN.

Emphasis on the methods of teaching French pronunciation. Review of grammar, with students conducting the recitations.

\*201-202-203. **MIDDLE AND SIXTEENTH CENTURY FRENCH.**

\*221-222-223. **OLD FRENCH READINGS.**

\*231-232-233. **HISTORY OF OLD FRENCH LITERATURE.**

241-242-243. **SEMINAR.** Two credits per quarter. First, second and third quarters. FREIN.

Open to graduates and seniors who have had at least five years of French.

The subject of study will be determined by the preparation of those who enter the course. A choice of three subjects will be offered the class.

## II. SPANISH

Courses 191, 192 are required of majors and of all who wish to be recommended as teachers.

## COURSES

1-2-3. **ELEMENTARY.** Five credits per quarter. First, second and third quarters.

No credit will be given for course 1 until course 2 has been completed. Each of the courses 1, 2, 3 is repeated each quarter.

4-5-6. **READING OF MODERN AUTHORS.** Three credits per quarter. First, second and third quarters. Prerequisite to 4 is 3, or equivalent. Each of the courses 4, 5, 6 is repeated each quarter. UMPHREY, PHILBRICK.

Reading some of the best works of the nineteenth century. If desired, courses 4, 5, 6 may be combined with courses 7, 8, 9, making a five-hour course each quarter.

7-8-9. **GRAMMAR, COMPOSITION, CONVERSATION.** Two credits per quarter. First, second and third quarters. Prerequisite to course 7 is course 3. Course 7 is prerequisite to course 8. UMPHREY, SANTANDER, PHILBRICK.

These courses may be combined with courses 4, 5, 6, making a five-hour course. Course 7 will be a review of the grammar. Courses 8 and 9, given by Professor Santander, will consist of the reproduction of Spanish lectures, of original compositions, and of conversation.

\*51. **SPANISH-AMERICAN CIVILIZATION.**

\*61. **LITERATURE AND ART OF SPAIN.**

\*111. **CONFERENCIAS.** Three credits per quarter. Third quarter. Prerequisite, ability to understand Spanish. SANTANDER.

Conferencias en espanol acerca de las Republicas Latino-Americanas. Open to auditors.

112-113. **COMMERCIAL SPANISH.** Three credits per quarter. First and second quarters. Prerequisite, course 9. SANTANDER.

Commercial terms and business correspondence.

\*115. **SURVEY OF SPANISH LITERATURE.**

\*121-122. **NOVEL.**

\*131-132. **LYRICS AND BALLADS.**

141-142-143. **DRAMA.** Three credits per quarter. First, second and third quarters. Prerequisite, course 6. UMPHREY.

History of the Spanish drama from its beginning. The early period will be covered in the first quarter, the "Golden Age" in the second, and the modern period in the third. Lectures, selected texts, collateral reading and reports.

\*144-145. **LOPE DE VEGA AND CALDERON.**

\*174. **CERVANTES.**

181-182. **SPANISH-AMERICAN INSTITUTIONS.** Two credits per quarter. First and second quarters. Prerequisite, courses 6, 9. **STRONG.**

Lectures, in Spanish, upon the institutions, history and government of Spanish-American republics. Collateral reading and reports.

184-185-186. **SPANISH-AMERICAN LITERATURE.** Two credits per quarter. First, second and third quarters. Prerequisite, course 6. **UMPHREY.**

The literature of two or more Spanish-American countries will be studied each quarter, with special attention to present day writers.

191-192. **TEACHERS' COURSE.** Two credits per quarter. Second and third quarters. Open to major students. **OBER.**

Methods of teaching Spanish. Practice teaching; observation; review of linguistic difficulties.

\*241-242. **OLD SPANISH.**

### III. ITALIAN

No student will be allowed to begin Italian and French or Spanish the same year. Upper classmen who have had much French or Spanish may elect elementary Italian.

Not enough courses are offered to major in Italian.

#### COURSES

1-2-3. **ELEMENTARY.** Five credits per quarter. First, second and third quarters. No credits given in courses 1, 2 until 3 is complete. **GOGGIO.**

7-115-116-117. **A SURVEY OF ITALIAN LITERATURE.** Two credits per quarter. First, second and third quarters. **GOGGIO.**

Lectures in English, and collateral reading of representative Italian literature in English translations. Open to all. No knowledge of Italian necessary.

### SCANDINAVIAN

Denny Hall

PROFESSOR VICKNER

#### COURSES

1-2. **SWEDISH LANGUAGE.** Five credits per quarter. First and second quarter.

Grammar and reading. Composition and oral exercises.

3-4. **NORWEGIAN-DANISH LANGUAGE.** Five credits per quarter. First and second quarters.

Grammar and reading. Composition and oral exercises.

5-6-7. **NORWEGIAN-DANISH LITERATURE.** Two credits per quarter. First, second and third quarters.

Representative authors are read in connection with a general survey of the Norwegian-Danish literature.

\* Not offered in 1918-1919.

8-9-10. SWEDISH LITERATURE. Two credits per quarter. First, second and third quarters.

Representative authors are read in connection with a general survey of the Swedish literature.

11-12-13. READING COURSE IN NORWEGIAN AND SWEDISH. One credit per quarter. First, second and third quarters.

Especially adapted for students in the Colleges of Science, Education, Business Administration and Library School. Special emphasis is laid on the acquisition of reading knowledge. Knowledge of the Scandinavian languages is not required.

14. SCANDINAVIAN CULTURE AND INSTITUTIONS. One credit per quarter. First, second and third quarters.

A lecture course dealing with the literature and art, political, social and industrial development of Scandinavia. One lecture a week, collateral reading, slides. Knowledge of the Scandinavian languages is not required. This course might profitably be combined with 109.

103-104-105. MODERN SWEDISH LITERATURE. Two credits per quarter. First, second and third quarters.

Representative writers of the nineteenth and twentieth centuries are read, including Selma Lagerlöf, Strindberg, Fröding. Study of the culture and history of Sweden.

106-107-108. MODERN NORWEGIAN-DANISH LITERATURE. Two credits per quarter. First, second and third quarters.

Representative writers of the nineteenth and twentieth centuries are read, including Ibsen, Björnson, Keilland, Jacobsen, Drachmann. Study of the culture and history of Denmark and Norway.

109-110. STUDY OF MODERN SCANDINAVIAN AUTHORS IN ENGLISH TRANSLATION. One credit per quarter. First, second and third quarters.

A study of Ibsen and Strindberg the main feature of the course. Brief survey of Scandinavian culture and history.

201. OLD ICELANDIC. Two credits per quarter. Third quarter.

Grammar, prose selections, poems from the Edda, lectures on Scandinavian mythology and antiquities, Scandinavian philology.

*202. Old Norse (Icelandic) 2 cr W. Vachon*  
 \*203. HISTORY OF THE SWEDISH LANGUAGE. 2 cr Vachon sp

205-206. SCANDINAVIAN LITERATURE IN THE NINETEENTH CENTURY. Two credits per quarter. Second and third quarters.

207. SCANDINAVIAN LYRIC POETRY. One credit per quarter. Third quarter.

209. HISTORY OF SCANDINAVIAN LITERATURE. One credit per quarter. Third quarter.

Lectures in Scandinavian. Some of the masterpieces assigned for outside reading and report.

Other graduate work with the consent of the head of the department.

\* Not offered in 1918-1919.

## SOCIOLOGY

Denny Hall

PROFESSOR OGBURN, ASSOCIATE PROFESSOR WATERMAN, ASSISTANT  
PROFESSOR THOMAS, MRS. MUDGETT

Sociology 160, 161 are of immediate application to war or war industries.

## COURSES

1. **INTRODUCTORY SOCIOLOGY.** Five credits per quarter. First or third quarter. Open to freshmen, sophomores, juniors and seniors. OGBURN.

The topics studied are the industrial revolution, the social effects of industry, poverty, social legislation, social reform, revolution, social justice, international relations, population, the family, race, immigration, crime, public health, the woman's movement, child welfare and welfare work, social ethics, customs and progress.

51. **EVOLUTION OF MATERIAL CULTURE.** Three credits per quarter. First quarter. Open to freshmen, sophomores, juniors and seniors. WATERMAN.

The original and evolution of material culture; inventions, implements, art; stages of industrial evolution.

52. **SOCIAL EVOLUTION.** Three credits per quarter. Second quarter. Open to freshmen, sophomores, juniors and seniors. It is advisable to have taken course 51. WATERMAN.

The origin and development of the state, the family, social organization, language, morals, law and custom.

\* 53. **FOSSIL MAN.** Three credits per quarter. Third quarter. Open to freshmen, sophomores, juniors and seniors. WATERMAN.

The antiquity of man; evolution of physical types; primitive man in Europe; prehistoric cultures.

55. **PROGRAMS OF SOCIAL REFORM.** Three credits per quarter. First quarter. Prerequisite, course 1. Open to sophomores, juniors and seniors.

A critical examination of individualism, conservatism, philanthropy, social justice, liberalism, unionism, the co-operative movement, the single tax, socialism and syndicalism.

56. **CRIMINOLOGY.** Three credits per quarter. Second quarter. Prerequisite, course 1. Open to sophomores, juniors and seniors.

A study of the social, economic and hereditary causes of crime; various theories and plans of prison reform; and the relation of crime and prisons and criminals to society.

\* 57. **MUNICIPAL SOCIOLOGY.** Three credits per quarter. Third quarter. Prerequisite, course 1. Open to sophomores, juniors and seniors.

A study of the social conditions, and problems of modern social life in American cities and a discussion of the various agencies developed to deal with them.

58. **AMERICANIZATION.** Two credits per quarter. Second quarter. Prerequisite, course 1. Open to sophomores, juniors and seniors. WATERMAN.

Racial differences between various elements in our population. Race equality and democratic institutions. Sources of our population. Problems confronting some of the more important European and Asiatic groups. The teaching of English to foreigners. Importance of Americanization in war time. Special methods of Americanization at our disposal.

\* 60. SOCIAL PSYCHOLOGY. Three credits per quarter. Second quarter. Prerequisite, course 1. Open to sophomores, juniors and seniors. OGBURN.

A study of the adjustment between man on his instinctive and psychological side and civilization. The instincts; modification and repression of instincts; the gregarious instinct, social control, custom, conventionality, suggestion, morals, the subconscious, insanity; and human nature in the family, the state, politics and in industry. It is desirable to have had a course in general psychology.

101. SOCIAL EFFECTS OF THE WAR AND RECONSTRUCTION. Three credits per quarter. First quarter. Prerequisite, course 1. Open to advanced under graduates and graduates. OGBURN.

A study of the effects of the war on public health, education, crime, labor, women, religion, the state, trade, industry, democracy, social reform, revolution, vital statistics; also a study of the returning soldier, the land problem, reconstructing industry, raw materials, the food supply, the standard of living, foreign trade, immigration and taxation.

105. CULTURAL HISTORY. Two credits per quarter. First quarter. Primarily for teachers. May be counted for graduate credit. WATERMAN.

The origin and diffusion of certain ideas, concepts and inventions; culture areas and the shiftings of ideas and morals.

106. AMERICAN SOCIAL CONDITIONS. Two credits per quarter. Second quarter. Primarily for teachers. May be counted for graduate credit.

An analytical and descriptive study of certain social conditions in America today and their relation to social progress.

107. RACE PROBLEMS. Two credits per quarter. Third quarter. Primarily for teachers. May be counted for graduate credit. WATERMAN.

The problems of race in society and in the United States today; racial stock and racial ability; race prejudice, the assimilation of races and the effect of race in culture.

129 - Social Statistics 3 cr sp. Thomas

151. THE AMERICAN INDIAN. Three credits per quarter. Third quarter. Prerequisite, course 1. For advanced undergraduates and graduates. WATERMAN.

A study of the culture of the American Indian; his social organization, religion, myths, folk-lore, art and material culture.

152. ETHNOLOGY OF THE OLD WORLD. Three credits per quarter. Second quarter. Prerequisite, course 1. For advanced undergraduates and graduates. WATERMAN.

A study of the life and culture of certain primitive peoples of Asia and Africa for the purpose of throwing light on the evolution of culture, the organization of social life, and the behavior of human nature under varying social conditions.

\* 153. CLIMATE AND CIVILIZATION. Three credits per quarter. First quarter. Prerequisite, course 1. For advanced undergraduates and graduates. WATERMAN.

Study of the correlation of climatic and cultural phenomena.

155. THE SOCIAL SURVEY. Two credits per quarter. First quarter. Prerequisites, course 1. For advanced undergraduates and graduates.

The methods of social investigation as applied particularly to communities, but also to various social conditions in various industries and organizations.

156. THE FAMILY. Three credits per quarter. Second quarter. Prerequisite, course 1. For advanced undergraduates and graduates.

The origin of the family and marriage, status of woman among various peoples, effects of industrial revolution on the family, the educational, recreative, moral, and economic functions of the modern family.

\* 157. CHILD WELFARE. Two credits per quarter. Third quarter. Prerequisite, course 1. For advanced undergraduates and graduates.

A study of the biological, psychological, social and economic factors bearing on the welfare of children of modern society.

\* <sup>159</sup> 160-161. *Social Progress* 3 cr sp Thomas. THEORY AND METHODS OF STATISTICS. Three credits per quarter. Second and third quarters. For advanced undergraduates and graduates. OGBURN.

An application of certain statistical tools to social, economic and educational problems, and their use in social investigations. A study of the frequency, distribution, variability, correlation and the theory of errors. It is desirable to have had a course in higher algebra and an elementary course in statistics.

\* <sup>162</sup> 171, 172, 173. *Influence of Physical Environment* 3 cr W Thomas. METHODS OF SOCIAL SERVICE AND CASE WORK. Four credits per quarter. First, second and third quarters. Hours of field work to be arranged. Open to mature students who have had previous courses in sociology. MUDGETT.

The purpose of this course is to train students to become skilled case workers, to qualify them for paid positions in such work, and particularly to enable them to help during the period of the war and reconstruction in home service in the families of the soldiers and sailors, and to serve in other capacities in social service that may arise during the war. The field work of this course will consist of two afternoons a week and will be arranged in co-operation with the Red Cross, the Associated Charities, the Juvenile Court, the County Welfare Department, and various other social agencies.

\* <sup>181</sup> 201-202-203. SEMINAR. Two credits per quarter. First, second and third quarters. For seniors and graduates. OGBURN, WATERMAN.

A research course in the particular problems the students are interested in.

SPANISH

Denny Hall

(See Romanic Languages)

## ZOOLOGY

## Science Hall

PROFESSOR KINCAID, ASSISTANT PROFESSOR E. VICTOR SMITH, MR. OSTERUD,  
DR. FASTEN, MISS GILLE, ASSISTANTS

## COURSES

1-2. **ELEMENTS OF ZOOLOGY.** Five credits per quarter. First and second quarters, repeated second and third quarters. Laboratory deposit, \$2.00. KINCAID, FASTEN, GILLE, ASSISTANTS.

A general review of zoological science, including a series of lectures on the principles of evolution and eugenics, and accompanied by suitable laboratory exercises.

3. **PRE-MEDICAL ZOOLOGY.** Five credits per quarter. First quarter. For students entering upon a medical course. Laboratory deposit, \$2.00. FASTEN.

4. **VERTEBRATE ZOOLOGY.** Five credits per quarter. Second quarter. Prerequisite, course 3. Laboratory deposit, \$2.00. FASTEN.

The structure of the vertebrates, with emphasis on mammalian organization. For students in medicine and physical education.

5. **GENERAL EMBRYOLOGY.** Five credits per quarter. Third quarter. Prerequisite, course 1-2 or 3-4. Laboratory deposit, \$2.00. WORCESTER.

The comparative, developmental history of animals, with emphasis upon vertebrate forms. For students in medicine and pharmacy, but open to others.

13. **ELEMENTARY ENTOMOLOGY.** Five credits per quarter. Third quarter. Prerequisite, course 1-2. Laboratory deposit, \$2.00. KINCAID.

The structure, classification, and economic relations of insects.

15. **EVOLUTION AND EUGENICS.** Three credits per quarter. First or third quarters. KINCAID.

Lectures upon the principles of evolution and their relation to human welfare.

16. **ETHNOLOGY.** Two credits per quarter. First and third quarters. KINCAID.

The origin, distribution and characteristics of the races of man.

\*101-102. **VERTEBRATE ANATOMY.**

103. **FOREST ENTOMOLOGY.** Three credits per quarter. First quarter. Laboratory deposit, \$2.00. KINCAID.

The classification and economic relations of insects injurious to the forests. For students in forestry, but open to others.

104. **ADVANCED ENTOMOLOGY.** Five credits per quarter. Second quarter. Prerequisite, course 11 or 103. KINCAID.

Studies in the morphology and ecology of insects, with emphasis on forms of economic importance.

\* Absent on leave, 1917-1918.

\* Not offered in 1918-1919.

**\*106. CYTOLOGY.****\*107. PARASITOLOGY.**

**201-202-203. PROBLEMS IN ZOOLOGY AND PHYSIOLOGY.** Credits to be arranged. First, second and third quarters. Prerequisite, twenty hours in zoology. KINCAID, SMITH, FASTEN.

Students with the proper preparation, which should include at least twenty hours work in zoology, will be assigned special topics to be worked upon under the direction of one of the instructors in the department.

**PHYSIOLOGY**

**7. ELEMENTARY PHYSIOLOGY.** Five credits per quarter. First or third quarter. SMITH.

A general survey of the structure and functions of the human body, designed especially for students in home economics, but open to others.

**8-10. GENERAL PHYSIOLOGY.** Lectures. Three credits per quarter. First quarter. SMITH.

Adapted to meet the needs of students expecting to teach the subject in high school. Required of students majoring in physical education and recommended for students majoring in home economics who desire more extended training than is offered in course 7. Adapted to meet the needs of students in the College of Naval, Military and Aeronautical Science.

**9. GENERAL PHYSIOLOGY; Laboratory.** Two credits per quarter. Second quarter. Laboratory deposit, \$8.00.

A set of laboratory exercises to accompany course 8-10, which must be elected with that course except in the case of students in College of Naval, Military and Aeronautical Science.

*d* \*12. HYGIENE. *W 3 on Small*

**109-110-111. ADVANCED PHYSIOLOGY.** Six credits per quarter. First, second and third quarters. Prerequisite, Anatomy 105-106, Physics 1-2-3, Chem. 81-82. Laboratory deposit, \$4.00. SMITH.

**WAR AVOCATION COURSES**

The war avocation courses listed below are classified into groups, as follows:

- (a) courses of immediate application to war or war industries,
- (b) courses prerequisite to courses of class (a),
- (c) courses looking to the rehabilitation of disabled soldiers and sailors, or to amelioration of the social or economic conditions induced by the exigencies of war.

**ASTRONOMY:** (a), 24, 25.

**BACTERIOLOGY:** (a), 4, 5; (b), 4, 5, 103, 104, 108.

**BOTANY:** (a), 107, 26; (b), 11, 12.

**CHEMISTRY:** all courses are in one or other classes (a), (b), (c).

**ECONOMY:** (a), 11, 12, 107; (b), 1.

**ENGINEERING.**

Civil; (a), 4, 5, 6, and all courses in the four-year curriculum;

Chemical; (a), all courses in the four-year curriculum;

Electrical; (a), 31, 81, and all courses in the four-year curriculum;

Mechanical; (a), 82, 83, 188, 200, and all courses in the four-year curriculum.

**FINE ARTS:** (a), Music 22, Painting and Design, (a), 105, (c), 9, 10, 11, 54, 55, 157, 158.

**FORESTRY:** (a), 53, and all courses in the four-year curriculum.

**FRENCH:** (a), 1, 2, 3, 4, 5, 6, 7, 8, 9, 41, 101, 102, 103, 104, 105, 106.

**GEOLOGY:** (a), 141, 142, 143, 144, 11, 22, 130; (b), 1, 2, 5.

**GERMAN:** (a), 1, 2, 3, 5, 6, 7, 10, 11, 110, 111, 180.

**HISTORY:** (a), 65, 66, 121, 122, 123, 130, 147; (b), 1, 2, 3; (c), 105, 106, 107.

**HOME ECONOMICS:** (a), 4, 108, 124; (b), 1, 2; (c), all courses in the five four-year curricula.

**LAW:** (a), 57, 58.

**MATHEMATICS:** (a), 4, 13, 19; (b), 4, 5, 6, 7, 8, 9.

**MEDICINE:** (a), all courses in the pre-medical, pre-clinical, and nurses' curricula.

**MILITARY, NAVAL AND AERONAUTICAL SCIENCE:** (a), all courses in the three four-year curricula.

**MINES AND METALLURGY:** (a), Min. 20, 22, 50, 108, Met. 70, 71, and all courses in the four-year curricula.

**PHARMACY:** (a), (c), all courses in the four-year curricula.

**PHILOSOPHY:** (a), 2A, 31, 132.

**PHYSICS:** (a), 54, 139, 169; (b), 1, 2, 3, 97, 98, 99, 116.

**PSYCHOLOGY:** (a), 101, 106, 109, 126; (b), 1.

**SOCIOLOGY:** (a), 160, 161; (c), 101, 160, 161, 171, 172, 173.

**ZOOLOGY:** (b), 3, 4, 5, 8, 9.

# College of Engineering

## THE FACULTY

- HENRY SUZALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.  
CARL EDWARD MAGNUSSON, PH. D. (Wisconsin), E. E. (Minnesota), Professor of Electrical Engineering; ACTING DEAN.  
EVERETT OWEN EASTWOOD, C. E., M. A. (Virginia), S. B. (Massachusetts Institute of Technology), Professor of Mechanical Engineering.  
<sup>1</sup>CHARLES CHURCH MORE, M. S., C. E. (Lafayette), M. C. E. (Cornell), Professor of Civil Engineering.  
<sup>2</sup>WILLIAM FRANKLIN ALLISON, B. S. (C. E.), Purdue, C. E. (Cornell), Professor of Municipal and Highway Engineering.  
GEORGE SAMUEL WILSON, B. S. (Nebraska), Associate Professor of Mechanical Engineering.  
CHARLES WILLIAM HARRIS, C. E. (Cornell), Associate Professor of Civil Engineering.  
<sup>3</sup>EDGAR ALLEN LOEW, B. S. (E. E.) (Wisconsin), Associate Professor of Electrical Engineering.  
HORACE JAMES MACINTYRE, S. B. (Massachusetts Institute of Technology), M. M. E. (Harvard), Assistant Professor of Mechanical Engineering.  
<sup>4</sup>JOHN WILLIAM MILLER, B. S. (C. E.), (Nebraska), Assistant Professor of Civil Engineering.  
CHARLES EDWARD NEWTON, B. S., E. M. (Michigan College of Mines), Assistant Professor of Civil Engineering.  
FRANK MELVILLE WARNER, B. S. (M. E.), (Wisconsin), Assistant Professor of Engineering Drawing.  
FREDERICK KURT KIRSTEN, B. S., E. E. (Washington), Assistant Professor of Electrical Engineering.  
LESLIE FORREST CURTIS, B. S. (Tufts), M. S. (E. E.) (Washington), Assistant Professor of Electrical Engineering.  
WILLIAM ELMHIRST DUCKERING, A. B., C. E. (Washington), Assistant Professor of Civil Engineering.  
FRANK EDWARD MCKONE, M. S. (Massachusetts Institute of Technology), Assistant Professor of Mechanical Engineering.  
CHAUNCEY WEENECKE, B. S. (C. E.), (Washington), Instructor in Civil Engineering.  
HARRY STANLEY ROGERS, B. S. (C. E.), (Wyoming), Instructor in Civil Engineering.  
EVERETT GEORGE SNELL, B. S., (C. E.), (Clarkston College of Technology), Instructor in Civil Engineering.  
SAMUEL THOMAS BEATTIE, Instructor in Woodwork.  
SANDY MORROW KANE, Instructor in Metal Work.  
FRANK DEMETRIUS HAYDEN, B. S. (Massachusetts Institute of Technology), Instructor in Civil Engineering.  
JAMES BAKER HAMILTON, (Washington), Instructor in Civil Engineering.
- <sup>5</sup>HORACE G. BYERS, PH. D. (Johns Hopkins), Professor of Chemistry.  
FREDERICK MORGAN PABELFORD, PH. D. (Yale), Professor of English.  
FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Professor of Physics and Director of the Physics Laboratories.  
<sup>6</sup>ROBERT EDOUARD MORITS, PH. D. (Nebraska), PH. N. D. (Strassburg), Professor of Mathematics.  
HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.  
<sup>7</sup>JOHN WEINERL, PH. D. (Wisconsin), Professor of Bacteriology.  
WILLIAM TAYLOR PATTEN, Captain, U. S. A., Retired, Professor of Military Science and Tactics.  
LESLIE JAMES AYLE, B. S. (Upper Iowa), J. D. (Chicago), Professor of Law.  
SAMUEL LATIMER BOOTHBOYD, M. S. (Colorado Agricultural College), Associate Professor of Astronomy.  
JOSEPH DANIELS, S. B. (Massachusetts Institute of Technology), M. S. (Lehigh), Associate Professor of Mining Engineering and Metallurgy.  
ABRAHAM BERGLUND, PH. D. (Columbia), Associate Professor of Economics.  
GEORGE IRVING GAVETT, B. S. (C. E.), (Michigan), Assistant Professor of Mathematics.  
LEWIS IRVING NEMIKIRK, PH. D. (Pennsylvania), Assistant Professor of Mathematics.  
<sup>8</sup>HARLAN LEO TRUMBULL, PH. D. (Chicago), Assistant Professor of Chemistry.  
<sup>9</sup>SAMUEL HERBERT ANDERSON, PH. D. (Illinois), Assistant Professor of Physics.  
CHARLES GUSTAVE KUSCHKE, PH. D. (California), Instructor in Mathematics.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1917-18.

<sup>3</sup> Absent on leave, second and third quarters, 1918-19.

## 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 (M. S.) in the respective lines.

In arranging the curricula the aim has been: To keep the work fundamental in character; to introduce the student into an engineering atmosphere as soon as possible; to direct, more than heretofore, the methods of work and study and to provide for a certain amount of flexibility in the selection of subjects.

A distinctive feature is the engineering problems (C. E. 11, 12, 13) given by engineering instructors in three three-hour periods a week and consisting chiefly of problems taken from engineering work, analyzed from an engineering standpoint and solved by using mathematics as a means rather than an end.

The freshman work in the departments of chemical, civil, electrical and mechanical engineering, 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 is repeated each quarter. 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 at the opening of any quarter with the assurance of continuity of work for at least two years. The plan provides a possibility for taking desirable elective courses, or for engaging in practical work for one or more quarters 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 degrees 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 graduates of this college, or other engineering colleges of recognized standing, who complete a year (45 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, chemical engineer (Ch. E.), 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.

#### \*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 (one unit algebra, one unit plane geometry).
- 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.

In addition to the three units of English and the two units of mathematics required for admission to all colleges of the University, all students expecting to enter the College of Engineering should elect their 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

If the student 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.

\* More detailed information concerning admission is furnished on pages 37-41.

† 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.

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 more valuable to him.

## CURRICULUM IN CHEMICAL ENGINEERING

Leading to the degree of Bachelor of Science in Chemical Engineering

### FRESHMAN

<i>First Quarter</i>	<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>	<i>Third Quarter</i>	<i>Credits</i>
Alg. Math. 51.....	3	Trig. Math. 52.....	3	Anal. Geom. Math. 53.....	3
Engr. Prob. C. E. 11.....	3	Engr. Prob. C. E. 12.....	3	Engr. Prob. C. E. 13.....	3
Gen. Chem. 1 or 21.....	5	Gen. Chem. 2 or 22.....	5	Gen. Chem. 3 or 23.....	5
Drawing, C. E. 1.....	3	Drawing, C. E. 2.....	3	Surveying, C. E. 21.....	3
Woodwork, M. E. 1.....	1	Woodwork, M. E. 2.....	1	Woodwork, M. E. 3.....	1
Mil. Sci. 1.....	2	Mil. Sci. 2.....	2	Mil. Sci. 3.....	2
	<hr/> 17		<hr/> 17		<hr/> 17

### SOPHOMORE

Dif. Cal. Math. 61.....	3	Int. Cal. Math. 62.....	3	Dir. Cur. E. E. 101.....	4
Physics 97.....	5	Physics 98.....	5	D. C. Lab. E. E. 102.....	2
Qual. Chem. 48.....	5	Quant. Chem. 101.....	4	Physics 99.....	5
Metalwork, M. E. 53.....	1	St. Engr. M. E. 82.....	3	Quant. Chem. 102.....	4
Mil. Sci. 4.....	2	Metalwork, M. E. 54.....	1	Metalwork, M. E. 55.....	1
	<hr/> 16	Mil. Sci. 5.....	2	Mil. Sci. 6.....	2
			<hr/> 18		<hr/> 18

### JUNIOR

Organic Chem. 81.....	5	Organic Chem. 82.....	5	Organic Chem. 83.....	5
Indust. Chem. 121.....	5	Indust. Chem. 122.....	5	Indust. Chem. 123.....	5
Alt. Cur. E. E. 121.....	4	Mechanics, C. E. 131.....	3	Mach. Des. M. E. 90.....	3
A. C. Lab. E. E. 123.....	2	Mechanism, M. E. 81.....	3	English 3.....	3
	<hr/> 16		<hr/> 16		<hr/> 16

### SENIOR

Phys. Chem. 201.....	5	Phys. Chem. 202.....	5	Elec. Chem. 204.....	5
Metalurgy, Min. 101.....	5	Mach. Des. M. E. 115.....	3	Thesis.....	3
Steam Lab. M. E. 140.....	3	Thesis.....	2	Elective.....	6
Elective.....	3	Elective.....	6		
	<hr/> 16		<hr/> 16		<hr/> 14

Electives must in all cases be approved by the head of the department.

## CURRICULUM IN CIVIL ENGINEERING

Leading to the degree of Bachelor of Science in Civil Engineering

### FRESHMAN

<i>First Quarter</i>	<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>	<i>Third Quarter</i>	<i>Credits</i>
Alg. Math. 51.....	3	Trig. Math. 52.....	3	Anal. Geom. Math. 53.....	3
Engr. Prob. C. E. 11.....	3	Engr. Prob. C. E. 12.....	3	Engr. Prob. C. E. 13.....	3
Gen. Chem. 1 or 21.....	5	Gen. Chem. 2 or 22.....	5	Gen. Chem. 3 or 23.....	5
Drawing, C. E. 1.....	3	Drawing, C. E. 2.....	3	Surveying, C. E. 21.....	3
Woodwork, M. E. 1.....	1	Woodwork, M. E. 2.....	1	Woodwork, M. E. 3.....	1
Mil. Sci. 1.....	2	Mil. Sci. 2.....	2	Mil. Sci. 3.....	2
	<hr/> 17		<hr/> 17		<hr/> 17

### SOPHOMORE

Cal. Math. 61.....	3	Cal. Math. 62.....	3	Hydraulics, C. E. 142.....	5
Railroads, C. E. 22.....	5	Higher Surv. C. E. 23.....	5	Highways, C. E. 122.....	3
Mach. Des. M. E. 90.....	3	Mach. Des. M. E. 91.....	3	Field Eng. C. E. 24.....	3
Hls. Civ. Eng., C. E. 41.....	3	St. Eng., M. E. 82.....	3	Steam Lab. M. E. 140.....	3
Mil. Sci. 4.....	2	Mil. Sci. 5.....	2	Mil. Sci. 6.....	2
	<hr/> 16		<hr/> 16		<hr/> 16

JUNIOR					
Mechanics, C. E. 181.....	3	Mechanics, C. E. 182.....	3	Reinforced Conc. C. E. 188.	3
Physics 97 .....	5	Hydraulic Eng., C. E. 148.	3	Physics 99 .....	5
English 5 .....	3	Physics 98 .....	5	Dir. Cur. E. E. 101.....	4
Geology 5 .....	5	English 6 .....	3	D. C. Lab. E. E. 102.....	2
		Elective .....	3	Str. Matls. C. E. 167.....	3
	16		17		17
SENIOR					
Frame Struc., C. E. 184....	3	Elective .....	11	Elective .....	13
Business Law 54.....	3	Business Law 55.....	3		
Thesis .....	5				
Elective .....	5				
	16		14		13

180 + 12

Electives must in all cases be approved by the head of the department.

CURRICULUM IN ELECTRICAL ENGINEERING

Leading to the degree of Bachelor of Science in Electrical Engineering

FRESHMAN			
First Quarter	Credits	Second Quarter	Credits
Alg. Math. 51.....	3	Trig. Math. 52.....	3
Engr. Prob. C. E. 11.....	3	Engr. Prob., C. E. 12.....	3
Gen. Chem. 1 or 21.....	5	Gen. Chem. 2 or 22.....	5
Drawing, C. E. 1.....	3	Drawing, C. E. 2.....	3
Woodwork, M. E. 1.....	1	Woodwork, M. E. 2.....	1
Mil. Sci. 1.....	2	Mil. Sci. 2.....	2
	17		17
SOPHOMORE			
Dif. Cal. Math. 61.....	3	Int. Cal. Math. 62.....	3
Mechanism, M. E. 81.....	3	St. Engr., M. E. 82.....	3
Physics 97 .....	5	Physics 98 .....	5
Mach. Des., M. E. 90.....	3	Mach. Des., M. E. 91.....	3
Metalwork, M. E. 53.....	1	Metalwork, M. E. 54.....	1
Mil. Sci. 4.....	2	Mil. Sci. 5.....	2
	17		17
JUNIOR			
Dir. Cur. E. E. 103.....	5	Alt. Cur. E. E. 161.....	5
D. C. Lab. E. E. 104.....	4	A. C. Lab. E. E. 162.....	4
Steam Lab. M. E. 140.....	3	English 6 .....	3
Mechanics, C. E. 181.....	3	Mechanics, C. E. 182.....	3
	15		15
SENIOR			
Transients, E. E. 201, 202, or Thesis 195.....	5	El. Des. E. E. 151.....	5
Hydraulics, C. E. 142.....	5	Elective .....	10
Elective .....	5		
	15		15

180 + 12

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

FRESHMAN			
First Quarter	Credits	Second Quarter	Credits
Alg. Math. 51.....	3	Trig. Math. 52.....	3
Engr. Prob. C. E. 11.....	3	Engr. Prob. C. E. 12.....	3
Gen. Chem. 1 or 21.....	5	Gen. Chem. 2 or 22.....	5
Drawing, C. E. 1.....	3	Drawing, C. E. 2.....	3
Woodwork, M. E. 1.....	1	Woodwork, M. E. 2.....	1
Mil. Sci. 1.....	2	Mil. Sci. 2.....	2
	17		17
SOPHOMORE			
Cal. Math. 61.....	3	Cal. Math. 62.....	3
Mechanism, M. E. 81.....	3	English 5 .....	3
Mach. Des. M. E. 90.....	3	Mach. Des. M. E. 91.....	3

Third Quarter	Credits
Anal. Geom. Math. 53.....	3
Engr. Prob. C. E. 13.....	3
Gen. Chem. 3 or 23.....	5
Surveying, C. E. 21.....	3
Woodwork, M. E. 3.....	1
Mil. Sci. 3.....	2

Cal. Math. 63.....	3
St. Eng. M. E. 82.....	3
Steam Eng. Lab. M. E. 140 3	

Physics 97 ..... 5	Physics 98 ..... 5	Physics 99 ..... 5
Metalwork, M. E. 53..... 1	Metalwork; M. E. 54..... 1	Metalwork, M. E. 55..... 1
Mil. Sci. 4..... 2	Mil. Sci. 5..... 2	Mil. Sci. 6..... 2
17	17	17
<b>JUNIOR</b>		
Dir. Cur. E. E. 101..... 4	Alt. Cur. E. E. 121..... 4	Hydraulics, C. E. 142..... 5
D. C. Lab. E. E. 102..... 2	A. C. Lab. E. E. 122..... 2	Str. Matis. C. E. 167..... 3
Exp. Eng. M. E. 151..... 3	Exp. Eng. M. E. 152..... 3	Exp. Engr. M. E. 158..... 3
Eng. & Boll. M. E. 123... 3	Eng. & Boll. M. E. 124... 3	Eng. & Boll. Des. M. E. 125 ..... 3
Mechanics, C. E. 181..... 3	Mechanics, C. E. 182..... 3	Metalwork, M. E. 107..... 1
Metalwork, M. E. 105..... 1	Metalwork, M. E. 106..... 1	
16	16	15
<b>SENIOR</b>		
Business Law 54..... 3	Gas. Eng. M. E. 199..... 3	Power Plants, M. E. 184.. 3
Thermo. M. E. 188..... 3	Heat & Vent. M. E. 182.. 3	Refrigeration, M. E. 180.. 2
Mach. Des. M. E. 101..... 2	Mach. Des. M. E. 102..... 2	Mach. Des. M. E. 103 or 201 ..... 3
Steam Turb. M. E. 179... 3	Thesis ..... 3	Thesis ..... 3
Elective ..... 4	Elective ..... 4	Elective ..... 4
15	15	15 182+2

Electives must in all cases be approved by the head of the department.

### CURRICULUM IN NAVAL ARCHITECTURE AND MARINE ENGINEERING

Freshman year—Same as Mechanical Engineering.

Sophomore year—Same as Mechanical Engineering.

<b>JUNIOR YEAR</b>			
<i>First Quarter</i>	<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>
Dir. Cur. E. E. 101..... 4		Alt. Cur. E. E. 121..... 4	
D. C. Lab. E. E. 102..... 2		A. C. Lab. E. E. 122..... 2	
Exp. Eng. M. E. 151..... 3		Exp. Eng. M. E. 152..... 3	
Nav. Arch. M. E. 185..... 3		Nav. Ar. Draw. M. E. 186. 3	
Mechanics, C. E. 181..... 3		Mechanics, C. E. 182..... 3	
Metalwork, M. E. 105..... 1		Metalwork, M. E. 106... 1	
16		16	
<b>SENIOR YEAR</b>			
Thermo. M. E. 188..... 3		Gas Engines, M. E. 199.. 3	
Ship Design, M. E. 188... 2		Ship Design, M. E. 189... 2	
Steam Turb. M. E. 179... 3		Heat & Vent. M. E. 182.. 3	
Business Law 54..... 3		Elective ..... 7	
15		15	
<b>THIRD QUARTER</b>			
			<i>Credits</i>
		Exp. Eng. M. E. 158..... 3	
		Hydraulics, C. E. 142..... 5	
		Str. Matis. C. E. 167..... 3	
		Nav. Ar. Draw. M. E. 187. 3	
		Metalwork, M. E. 107..... 1	
		15	

#### AERONAUTICS

	<i>Credits</i>
Theory of Aviation, M. E. 60 and 61.....	3
Aeroplane Design, M. E. 193, 194, 195.....	3
Aerial Propulsion, M. E. 198.....	3
Aeroplane Engines, M. E. 199.....	3
Aerodynamical Laboratory, M. E. 210.....	3

### CURRICULUM FOR BACHELOR OF SCIENCE DEGREE

The student must register in one of the Departments of the College of Engineering.

	<i>Credits</i>
Mathematics 51, 52, 53, 61, 62, 63.....	18
Physics 97, 98, 99.....	15
Chemistry 1, 2, 3, or 21, 22, 23.....	15
English 5.....	3
Civil Engineering 1, 2, 11, 12, 18, 21, 181.....	21
Electrical Engineering, 101, 102, 121, 122 or 161, 162.....	12
Mechanical Engineering 1, 2, 3, 81, 82, 90, 140.....	15
Military Science or Physical Education 1, 2, 3, 4, 5, 6.....	12
Technical electives in major department, at least.....	21
General electives.....	60

Electives must in all cases be approved by the head of the department in which the student majors.

## DEPARTMENTS OF INSTRUCTION

## CHEMICAL ENGINEERING

Bagley Hall

PROFESSORS BYERS,<sup>1</sup> BENSON,<sup>1</sup> ASSOCIATE PROFESSORS DEHN, ROSE,<sup>1</sup> ASSISTANT PROFESSORS TRUMBULL,<sup>1</sup> HEATH, TARTAR, DR. LANGDON, DR. STEGEMAN,<sup>2</sup> MISS VINSONHALER, MR. CADY

Chemical Engineering 34 is of immediate application to war or war industries.

## COURSES

1, 2, 3. GENERAL CHEMISTRY. Five credits per quarter, First, second and third quarters. Three lectures and two laboratory periods per week. Open only to students who have had no high school chemistry. Laboratory deposit, \$7.00. LANGDON, ASSISTANTS.

The first two quarters are devoted to general chemistry and the chemistry of the non-metals; the third quarter to the chemistry of metals. The laboratory work of the third quarter is qualitative analysis.

3, 1, 2. GENERAL CHEMISTRY. Five credits per quarter. Third, first and second quarters. A repetition of the course described above. LANGDON, ASSISTANTS.

21, 22, 23. GENERAL CHEMISTRY. Five credits per quarter. First, second and third quarters. Three lectures and two laboratory periods per week. Prerequisite, accredited high school course in chemistry. Laboratory deposit, \$7.00. LANGDON, ASSISTANTS.

A course designed for students who have had a high school course in chemistry, and especially for students of the Colleges of Science and Engineering. The third quarter is devoted to elementary qualitative analysis. This course is repeated beginning the third quarter and continuing for three quarters.

22, 23, 21. GENERAL CHEMISTRY. Five credits per quarter. First, second and third quarters. Laboratory deposit, \$7.00. TARTAR.

A repetition of the course described above.

31, 32, 33. ORGANIC CHEMISTRY. Five credits per quarter. First, second and third quarters. Three lectures and two laboratory periods throughout the year. Prerequisite, course 3 or its equivalent. Laboratory deposit, \$7.00. DEHN.

A course covering the fundamentals of organic chemistry as thoroughly as the time limit permits. Designed particularly for majors in chemistry and for students preparing for medicine.

34. ORGANIC CHEMISTRY. (War Course). Five credits per quarter.

Organic chemistry of munitions, explosives and war gases, etc.

43. QUALITATIVE ANALYSIS. Five credits per quarter. Second quarter. Three lectures and two laboratory periods per week. Prerequisite, course 23 or its equivalent. Laboratory deposit, \$7.00. LANGDON.

A course in advanced qualitative analysis designed for chemists and

<sup>1</sup> Absent on war service.

<sup>2</sup> Resigned March 1, 1918.

engineers. The detection and identification of rare elements is an essential part of the course. The theory of analytical operations forms an important part of the class work.

\* 51. ENGINEERING CHEMISTRY.

101, 102. QUANTITATIVE ANALYSIS. Four credits per quarter. Second and third quarters. One lecture and three laboratory periods per week. Prerequisite, course 48. Laboratory deposit, \$7.00. HEATH.

A course in the elements of quantitative methods, gravimetric analysis and volumetric methods.

103. ADVANCED QUANTITATIVE ANALYSIS. Four credits per quarter. First and third quarter. Four laboratory periods per week. Prerequisite, course 102. Laboratory deposit, \$7.00. HEATH.

A course dealing with the complete analysis of minerals and the commercial and analytical methods.

\* 121, 122, 123. INDUSTRIAL CHEMISTRY.

133. SANITARY CHEMISTRY. Three credits per quarter. First quarter. Two lectures and one laboratory period per week. Prerequisite, course 101. Laboratory deposit, \$7.00. BENSON.

A study of materials and processes used in the purification of water and sewage, and in sanitation.

\* 135. FOREST PRODUCTS.

\* 136. ROAD MATERIALS.

141, 142, 143. PHYSIOLOGICAL CHEMISTRY. Five credits per quarter. First, second and third quarters. Three lectures and two laboratory periods per week. Prerequisite, course 33 or 102. Laboratory deposit, \$7.00. DEHN.

201, 202. PHYSICAL CHEMISTRY. Five credits per quarter. First and second quarters. Prerequisite, Physics 1-2. Laboratory deposit, \$7.00. TARTAR.

An elementary course dealing with the fundamental theories of chemistry based upon physical measurements.

203. ADVANCED PHYSICAL CHEMISTRY. Five credits per quarter. Third quarter. Three lectures and two laboratory periods per week. Prerequisite, course 201. Laboratory deposit, \$7.00. TARTAR.

A course on chemical statics and dynamics.

204. ELECTRO CHEMISTRY. Five credits per quarter. Third quarter. Prerequisite, course 201. Laboratory deposit, \$7.00. TARTAR.

A course dealing with the historical development of electro chemistry, the theories of voltaic and electrolytic cells and methods of electro analysis and electro synthesis.

212. ORGANIC PREPARATIONS. Five credits per quarter. First, second or third quarters. Prerequisite, course 33. Laboratory deposit, \$7.00. DEHN.

An advanced course in the methods used in organic synthesis.

250. RESEARCH. Credit to be arranged. First, second and third quarters.

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 nine 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, nine hours. Third, research work for the doctor's degree. Maximum credit, forty-five 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 Hall

PROFESSORS MORE,<sup>1</sup> ALLISON,<sup>1</sup> ASSOCIATE PROFESSOR HARRIS, ASSISTANT  
PROFESSORS MILLER,<sup>1</sup> WARNER, DUCKERING, ROGERS, HAYDEN,  
MR. WERNECKE, MR. SNELL, MR. HAMILTON

Civil Engineering 4, 5, 6 are of immediate application to war or war industries.

### COURSES

1. ENGINEERING DRAWING. Three credits per quarter. First, second or third quarter. Prerequisite, plane geometry. Laboratory deposit, \$1.00. WARNER, ROGERS, SNELL.

The use of instruments, free-hand lettering, drawing from machine parts, tracing, platting of traverse from field notes.

2. ENGINEERING DRAWING. Three credits per quarter. First, second or third quarter. Prerequisite, course 1. WARNER, ROGERS, SNELL.

Fundamental principles of making views of objects occupying three dimensions of space. Drafting-room methods of solving problems requiring two or more views.

\* 4. TOPOGRAPHY. (War Course). Three credits per quarter. First quarter. HAYDEN.

Field and office collection of information and platting of field notes for topographic surveys.

\* 5. CARTOGRAPHY. (War Course). Three credits per quarter. Second quarter. WERNECKE.

Drafting, making of maps and charts, including lettering and use of instruments.

\* 6. COMPUTATIONS. (War Course). Three credits per quarter. Third quarter. Engineering and industrial calculations. DUCKERING.

11. ENGINEERING PROBLEMS. Three credits per quarter. First, second or third quarter. DUCKERING, ROGERS, WARNER, HAMILTON.

The investigation of simple structures as to loadings, weights and stresses in members by algebraic and graphic methods.

12. ENGINEERING PROBLEMS. Three credits per quarter. First, second or third quarter. Prerequisite, course 11. DUCKERING, ROGERS, WARNER, HAMILTON.

Elementary problems dealing with the movement of bodies. Investigation of the effect of bending and direct stress upon the materials of construction. Introduction of the ideas of calculus and analytics.

18. ENGINEERING PROBLEMS. Three credits per quarter. First, second or third quarter. Prerequisite, course 1. DUCKERING, ROGERS, WARNER.

<sup>1</sup> Absent on war service.

115 Surveying  
Drawing  
Eng Prof 4 cr Fall

The problems of dimensioned objects, graphic solution.

21. PLANE SURVEYING. Three credits per quarter. First, second, or third quarter. Prerequisite, course 1, Math. 51. All freshman engineers. Laboratory deposit, \$3.00. HAYDEN, HAMILTON.

Adjustment of instruments, trigonometric computations, mapping of simple surveys, and a brief introduction to the U. S. system of public land surveying.

22. RAILROADS. Five credits per quarter. First quarter. Prerequisite, course 21. Laboratory deposit, \$3.00. HAYDEN.

Elementary railroad engineering, including curves, earth work, costs estimates and location of light traffic lines such as logging railways.

23. HIGHER SURVEYING. Five credits per quarter. Second quarter. Prerequisite, course 21. HAYDEN, HAMILTON.

Triangulation, base line measurement, plane table with computations and adjustment of engineering measurements.

24. FIELD ENGINEERING. Three credits per quarter. Third quarter. Prerequisite, course 22. HAYDEN, HAMILTON.

Staking out of engineering work such as slopes, vertical curves, railroad spirals, etc.

27. MINE SURVEYING. Three credits per quarter. Second quarter. Prerequisite, course 21. Sophomore mining engineers. Laboratory deposit, \$3.00. HAYDEN, HAMILTON.

Surface and underground practice. Observation for meridian. Topography. Mining claim survey. Plane triangulation. Tunnels and vertical shaft work and connections. Mapping.

30. SURVEYING. (Short session in Forestry). Five credits. Laboratory deposit, \$3.00. HAMILTON.

38. SURVEYING. (Short session in Mining). Five credits. Laboratory deposit. HAYDEN.

41. HISTORY OF CIVIL ENGINEERING. Three credits per quarter. First quarter. WERNECKE.

A brief survey of engineering art from the earliest times to the present, with special reference to the development of engineering in design, manufacture and construction. Also a survey of the beginning, and present degree of specialization, the correlation, of the several branches of civil engineering, structural, railway, highway, hydraulic, sanitary and geodetic engineering.

55-56. FOREST SURVEYING. Five credits per quarter. Second and third quarters. Sophomore and junior foresters. Prerequisite, course 3, Math. 51. Laboratory deposit, \$3.00. HAMILTON.

Engineering lettering and map drawing. Chain, compass, transit and level surveying, with reference to work in forest. U. S. subdivision of public lands.

112. RAILWAY CONSTRUCTION. Five credits per quarter. Second quarter. Prerequisite, course 24. HAYDEN.

A detailed study of track, tunnels and terminals.

115. RAILWAY ECONOMICS. Five credits per quarter. Third quarter. Prerequisite, course 24. HAYDEN.

Standard practice in location, operation, transportation and maintenance of way.

122. HIGHWAYS. Three credits per quarter. Third quarter. Prerequisite, course 22. ROGERS.

Principles of economic location with methods and types of construction. Study of local application.

126. ROADS AND PAVEMENTS. Five credits per quarter. First quarter. Prerequisite, course 22. ROGERS.

Surface metals and maintenance, including comparative laboratory study of properties of local materials.

131. MECHANICS. Three credits per quarter. First quarter. Prerequisite, course 18, Math. 62. DUCKERING, WERNECKE.

Statics, stresses in structures, beams, columns, flexible cords. Influence lines. Theorem of Least work. Theorem of Three Moments. Combined stresses. Centroids and Second Moments.

132. MECHANICS. Three credits per quarter. Second quarter. Prerequisite, course 131. DUCKERING, WERNECKE, ROGERS.

Dynamics; translation and rotation; work, energy and power; friction; torsion; inertia of rigid bodies.

133. REINFORCED CONCRETE. Three credits per quarter. Third quarter. Prerequisite, course 131. DUCKERING, WERNECKE.

The mechanics of reinforced concrete beams, girders, columns and retaining walls and the introduction to reinforced arch bridges.

134. FRAME STRUCTURES. Three credits per quarter. First quarter. Prerequisite, course 131. DUCKERING, WERNECKE.

Complete problems presenting structural engineering, cranes, roof trusses, highway bridges and simple railroad spans.

142. HYDRAULICS. Five credits per quarter. Third quarter. Prerequisite, course 18. Laboratory deposit, \$8.00. HARRIS, ROGERS.

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. HYDRAULIC ENGINEERING. Three credits per quarter. Second quarter. Prerequisite, course 142. HARRIS, ROGERS.

Complete problems presenting hydraulic engineering.

144. HYDRAULIC MINING. Two credits per quarter. Second quarter. HARRIS.

A course of two lectures per week on theory and practice of hydraulic mining.

145. HYDRAULIC MACHINERY. <sup>5</sup>Three credits per quarter. Second quarter. Prerequisite, course 12. Senior and graduate E. E. and M. E. HARRIS.

Development and theory of water wheels and turbine pumps; design of a reaction turbine. Reference to hydrostatic machinery and dredging equipment.

147. HYDRAULIC POWER. Three credits per quarter. First quarter. Prerequisite, course 142. Senior and graduate C. E. HARRIS.

Generation of power. Development and theory of turbines, design of penstock and turbines. Types of installations.

153. WATER SUPPLY. Three credits per quarter. Second quarter. Prerequisite, course 143. Senior and graduate C. E. ROGERS.

A study of the principal engineering operations necessary to secure suitable water supplies for cities and towns; purification of water.

154. **SANITARY ENGINEERING.** Three credits per quarter. Senior and graduate C. E. Prerequisite, 153. **ROGERS.**

A study of the design and construction of sewerage systems, both combined and separate; sewage treatment, and disposal; garbage collection and destruction.

161. **BRIDGES.** Five credits per quarter. Second quarter. Prerequisite, course 184. Senior and graduate C. E. **DUCKERING.**

Stresses, design and deflection of simple trusses; detail drawings; estimates.

164. **HIGHER STRUCTURES.** Five credits per quarter. Third quarter. Prerequisite, course 161. Senior and graduate C. E. **DUCKERING.**

Primary and secondary stresses. Design.

167. **STRUCTURAL MATERIALS.** Three credits per quarter. Third quarter. Prerequisite, course 132. Senior and graduate C. E. and M. E., and graduate E. E. Laboratory deposit, \$8.00. **SNELL.**

An experimental study of the physical properties of materials of construction.

## ELECTRICAL ENGINEERING

### Engineering Hall

PROFESSOR MAGNUSSON, ASSOCIATE PROFESSOR LOEW, ASSISTANT PROFESSORS  
KIRSTEN, CURTIS, MR. KONGSTAD, MR. GUPTIL

Electrical Engineering 11, 31, 81, 181-182 are of immediate application to war or war industries.

15. Radio-electricity (War Course) 2 cr 7th  
COURSES

11. **ELECTRICIANS COURSE. (War Course).** Five credits per quarter. Second quarter. **KIRSTEN.**

Commercial wiring. Application of Ohm's Law. Heat Losses. Switchboards, meters, protective devices. Underwriters rules. Practical construction of underground and overhead transmission lines. Primary and secondary batteries. D. C. and A. C. lighting circuits. Two-phase and three-phase systems.

20. **NAVAL ENSIGNS.** Twelve credits. Length of course four months. **KIRSTEN.**

The course deals with the principles of electrical engineering with special application to electric machinery used by United States Navy, as outlined in text books supplied by the Navy Department.

25. **NAVAL AVIATION.** Three credits. **KIRSTEN.**

The course deals with the laws of electric energy with special application to electric ignition appliances.

31. **TELEPHONES AND TELEGRAPHS. (War Course).** Five credits per quarter. First and third quarters. **CURTIS.**

The electric circuit. Sources of power. Transmitters and receivers. Magneto and common battery systems. Signaling. Phantom, simplex and composite lines. Repairs. Location of faults.

\* 81. **RADIO ELEMENTARY. (War Course).** Five credits per quarter. First, second or third quarter. **CURTIS.**

International code. Sources of power. A. C. circuits. Oscillatory circuits. Radiation of energy. Commercial radio equipments. Vacuum tubes. Application for special service.

313 Telephones (War Course) 2 cr 7th

101S direct current machinery (war course) Fall-Spring  
120S alternat " " " "

W Sp

101. DIRECT CURRENTS. Four credits per quarter. First, second or third quarter. To be taken in connection with course 102. Soph: Ch. E., C. E., E. E., M. E., Min. E. Prerequisite, Physics 98. LOEW, CURTIS.

Theory of the electric and magnetic circuits; construction, operation and characteristics of direct current generators and motors.

102. DIRECT CURRENTS LABORATORY. Two credits per quarter. First, second or third quarter. Soph: Ch. E., C. E., E. E., M. E., Min. E. Prerequisite, Physics 98. Laboratory deposit, \$3.00. KIRSTEN, KONGSTED.

Laboratory work on direct current machinery.

103. DIRECT CURRENTS. Five credits per quarter. Second quarter. To be taken in connection with course 104. Junior E. E. Prerequisite, course 101. CURTIS, KIRSTEN.

Continuation of 101 in direct current machinery. Storage batteries. Regulation and control of direct current systems.

104. DIRECT CURRENTS LABORATORY. Four credits per quarter. Second quarter. Junior E. E. Prerequisite, course 102. Laboratory deposit \$4.00. CURTIS, KONGSTED.

Experimental work on direct current dynamo machinery and on storage batteries.

\* † 115. ELEMENTARY DIRECT CURRENTS. (Night Class). Four credits per quarter. First quarter. Specials. Laboratory deposit, \$4.00. GUPTIL.

The laws of the electric and magnetic circuits with application to direct current machinery without the aid of advanced mathematics. For electricians having at least two years of practical experience with electrical machinery.

\* † 120. ELEMENTARY ALTERNATING CURRENTS. (Night Class). Four credits per quarter. Second quarter. Specials, Prerequisite, course 115. Laboratory deposit, \$4.00. GUPTIL.

An introduction to alternating current theory with experimental work on alternating current machinery.

121. ALTERNATING CURRENTS. Four credits per quarter. Second quarter. Junior: M. E., Ch. E., C. E., Min. E. To be taken in connection with course 122. Prerequisite, course 101. LOEW, KIRSTEN.

A short course in alternating currents for non-electrical students.

122. ALTERNATING CURRENTS LABORATORY. Two credits per quarter. Second quarter. Junior: Ch. E., C. E., M. E., Min. E. Prerequisite, course 102. Laboratory deposit, \$3.00. LOEW, KIRSTEN.

Experimental work on alternating current machinery.

\* † † 131. TELEPHONES. Three credits per quarter. Junior or senior elective. Prerequisite, courses 101, 102. CURTIS.

Theory, construction and operation of telephone systems. Central telephone station practice.

\* † † 132. TELEPHONES AND TELEGRAPHS. Three credits per quarter. Junior or senior elective. Prerequisite, course 131. Laboratory deposit, \$2.00. CURTIS.

Details of automatic and manual switchboards. Testing and locating faults. Multiplex telegraphy. Railway signal systems.

† † 141. ELECTRIC LIGHTING. Four credits per quarter. Junior or

‡ Will be offered, providing at least ten students apply for the course.

†† Will be offered, providing six students apply for course.

senior elective. Prerequisite, courses 101, 102. Laboratory deposit, \$2.00. **KIRSTEN.**

Electric lamps. Commercial photometry. Adaptation of electric lighting to commercial requirements.

151. **DYNAMO DESIGN.** Five credits per quarter. First and third quarters. Senior E. E.. Prerequisite, courses 103, 104. **LOEW.**

Complete design of one direct current generator or motor.

152. **DESIGN OF ELECTRICAL APPARATUS.** Four credits per quarter. Senior E. E. Prerequisite, course 151. **LOEW.**

Design of switchboards, transformers, alternators or alternating current motors.

161. **ALTERNATING CURRENTS.** Five credits per quarter. First and third quarters. Junior E. E. Prerequisite, course 103. **MAGNUSSON.**

The theory of singlephase and polyphase systems. Energy storage in magnetic and dielectric fields. Vector diagrams and the symbolic method of analysis. Power factor and power measurements. Hysteresis and eddy currents. Theory of the transformer, singlephase and polyphase induction motors and alternators.

162. **ALTERNATING CURRENTS LABORATORY.** Four credits per quarter. First and third quarters. Junior E. E. To be taken in connection with course 161. Prerequisite, course 104. Laboratory deposit, \$4.00. **CURTIS.**

Experimental work with alternating current machinery.

168. **ALTERNATING CURRENTS.** Five credits per quarter. Second quarter. Junior E. E. Prerequisite, course 161. **MAGNUSSON.**

The theory of rotary converters, synchronous and commutator motors and transmission lines. High tension phenomena. Corona. Commercial wave forms. Unbalance and interlinked systems.

164. **ALTERNATING CURRENTS LABORATORY.** Four credits per quarter. Second quarter. Junior E. E. Prerequisite, course 162. Laboratory deposit, \$4.00. **KIRSTEN.**

Experimental work on rotary converters; synchronous and commutator motors, dielectrics and transmission lines.

\* 170. **ELECTRIC RAILWAYS.** Four credits per quarter. Junior or senior elective. Prerequisite, courses 101, 102. **CURTIS.**

Electrical equipment and rolling stock; roadbed; construction and operation of direct current, single phase, and polyphase systems.

\* 174. **CENTRAL STATIONS.** Three credits per quarter. Senior elective. Prerequisite, courses 161, 162. **CURTIS.**

Location, design and operation of electric central stations.

\* 176. **POWER TRANSMISSION.** Four credits per quarter. Senior elective. **KIRSTEN.**

Theory, design and operation of electric power transmission lines.

181-182. **RADIO COMMUNICATION.** (War Course). Ten credits per quarter. First quarter. Prerequisite, calculus, physics, and direct and alternating currents. **CURTIS.**

This course is given at the request of the United States Signal Corps, and the content is largely prescribed by government regulations. Radio systems. Lineal, open and complex oscillations. Coupled circuits. Re-

†† Will be offered, providing six students apply for course.

7 w *Aeronautics*  
60 61 *aviation* 3  
60 61 )

sonance. Transmitters. Receivers. Vacuum tubes in radio work. Quenched and undamped oscillations.

\* 195. THESIS. Five credits. Second quarter. Senior and graduate E. E. MAGNUSSON.

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 work is typewritten and bound and a copy deposited in the University library.

\* 201. ELECTRIC TRANSIENTS. Three credits per quarter. First and third quarters. Senior and graduate E. E. Prerequisite, courses 161, 162. MAGNUSSON.

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. Lighting phenomena.

W 202. ELECTRIC TRANSIENTS LABORATORY. Two credits per quarter. First and third quarters. To be taken in connection with course 201. Senior and graduate E. E. Prerequisite, courses 161, 162. Laboratory deposit, \$2.00. MAGNUSSON.

W 211-212 RESEARCH. Five credits per quarter. Time to be arranged. Senior and graduate E. E. MAGNUSSON.

## MECHANICAL ENGINEERING

### Engineering Hall

PROFESSOR EASTWOOD, ASSOCIATE PROFESSORS WILSON, MACINTIRE, ASSISTANT PROFESSOR MCKONE, MR. BEATTIE, MR. KANE

Mechanical Engineering 82, 83, 200 are of immediate application to war or war industries.

*15. elements of Steam Engine (War course)*  
COURSES

1, 2, 8. WOODWORK. One credit per quarter. First, second or third quarter. Bench work; cabinet work; pattern making. Laboratory deposit, \$2.00. BEATTIE.

4. WOODWORK. One credit per quarter. Third quarter. Prerequisite, Mining 50. Mine timber framing. Laboratory deposit, \$2.00. DANIELS, BEATTIE.

53, 54, 55. METALWORK. One credit per quarter. First, second or third quarter. Foundry; forge; machine work. Laboratory deposit, \$2.00. KANE.

60-61. AVIATION. Three credits per quarter. First and second, second and third quarters. MCKONE.

A lecture course involving the fundamental principles of aerodynamics and the theory of airplane design.

81. MECHANISM. Three credits per quarter. First, second or third quarter. Prerequisite, C. E. 2, Math. 52. WILSON.

A study of the operation of machines involving the transmission of forces and the production of determinate motions.

82. STEAM ENGINEERING. (War Course). Three credits per quarter.

ter. First, second or third quarter. Not open to freshmen. Prerequisite, C. E. 2. EASTWOOD.

The various forms of steam apparatus used in modern steam plants, considering the construction, use and reason for installing such apparatus.

\*88. STEAM ENGINE LABORATORY. (War Course). Two credits per quarter.

Arranged to be taken with course 82 to qualify students to operate as stationary engineers.

90, 91. MACHINE DESIGN. Three credits per quarter. First, second or third quarter. Preceded or accompanied by course 81. Prerequisite, C. E. 2. MACINTIRE, McKONE.

A study of the design of machine details, giving practice in the application of modern formulae and manufacturers' standards; also in the design of gearing, cone pulleys and belt transmission. Practice in tracing, blue-printing and reading of drawings.

101-102-103. MACHINE DESIGN. Three credits per quarter. First, second and third quarters. Prerequisite, course 90, C. E. 181, 182. MACINTIRE.

Problems in the design of hoisting and pumping machinery. Special machines.

105-106-107. METALWORK. One credit per quarter. First, second and third quarter. Prerequisite, course 55. Laboratory deposit, \$2.00. KANE.

Advanced machine shop practice; nutting machine.

\*108. METALWORK. One credit per quarter. First, second or third quarter. Prerequisite, course 107. KANE.

Manual arts for teachers.

\*109. WOODWORK. One credit per quarter. First quarter. Prerequisite, course 3. BEATTIE.

Manual arts for teachers.

\*115. MACHINE DESIGN. Three credits per quarter. First quarter. Prerequisite, course 90, C. E. 181. MACINTIRE.

Special problems in the design of chemical machinery.

123-124-125. ENGINES AND BOILERS. Three credits per quarter. First, second and third quarters. Three lectures per week first quarter, one lecture and six laboratory periods per week second and third quarter. Prerequisite, courses 82, 91, C. E. 181. MACINTIRE.

The generation and use of steam in various types of boilers and engines; valve gears; governors; the use of steam tables; the influence of economizers, feed-water heaters, etc., upon the engine and boiler performance.

140. STEAM ENGINEERING LABORATORY. Three credits per quarter. First, second or third quarter. Preceded or accompanied by course 82. Laboratory deposit, \$2.00. 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.

†151-152-153. EXPERIMENTAL ENGINEERING. Three credits per quarter. First, second and third quarters. Prerequisite, course 140. Laboratory deposit, \$2.00. WILSON.

A continuation of M. E. 140, involving more extended and complete

investigations. Special attention is given to the theory involved. Gas and fuel analysis. Advanced and commercial testing, compressed air, refrigeration.

\*179. STEAM TURBINES. Three credits per quarter. First quarter. Prerequisite, course 82. EASTWOOD.

The theory, construction and design of steam turbines.

\*180. REFRIGERATION. Two credits per quarter. Third quarter. Prerequisite, Physics 96, 98. MACINTIRE.

The theory and application of mechanical refrigeration.

<sup>w</sup>182. HEATING AND VENTILATION. Three credits per quarter. Second quarter. Prerequisite, course 82. EASTWOOD.

The various systems of heating and ventilating, methods of design and tests.

\*183. THERMODYNAMICS. Three credits per quarter. First quarter. Prerequisite, course 82. EASTWOOD.

The fundamental principles underlying the transformation of heat into work, with special application to engineering.

<sup>sp</sup>184. POWER PLANTS. Three credits per quarter. Third quarter. Prerequisite, courses 123, 140. EASTWOOD.

The design of steam power plants, involving their location, buildings, prime movers, power transmission, etc.

\*185-186-187. NAVAL ARCHITECTURE. Three credits per quarter. First, second and third quarters. Not open to freshmen. EASTWOOD.

The theory of naval architecture, as pertains to displacement, stability and strength, and the usual calculations involved in construction. Application of Lloyds and American Bureau of Shipping rules to the structural features of the ship.

\*188, 189. SHIP DESIGN. Two credits per quarter. First and second quarter. Prerequisite, course 186. EASTWOOD.

Application of the principles of naval architecture to the design of a ship for a definite purpose.

\*190. MARINE ENGINEERING. Three credits per quarter. Third quarter. Prerequisite, course 82. EASTWOOD.

The consideration of the power plant equipment of ships, including boilers, engines, auxiliaries and propellers. Attention is given to materials, construction and maintenance.

193-194. AIRPLANE DESIGN. Three credits per quarter. First and second quarter. Prerequisite, course 60. McKONE.

Application of the principles of aviation to the design of a given type of airplane involving strength and stability.

195. AERIAL PROPULSION. Three credits per quarter. Third quarter. Prerequisite, course 60. McKONE.

The theory of propulsion together with a design of a propeller.

199. GAS ENGINEERING. Three credits per quarter. Second quarter. Prerequisite, course 82. WILSON.

The development of gas engineering, including stationary, marine, automobile and airplane motors, and gas producer plants.

200. GAS ENGINE LABORATORY. (War Course). Two credits per quarter. Second quarter.

\* Not offered in 1918-19.

Arranged to be taken with course 199 to qualify students to operate as gas engineers.

201. GAS ENGINE DESIGN. Three credits per quarter. Third quarter. Prerequisite, course 199. WILSON.

Calculations and plans for the design of a given type of motor.

210. AERODYNAMIC LABORATORY. Three credits per quarter. Third quarter. Open to advanced students of the Colleges of Engineering and Science on approval. McKONE.

Experimental work in the wind tunnel relating to the forces involved in aviation, and investigations of a research nature.

## ENGINEERING EXPERIMENT STATION

### THE STAFF

HENRY SUREALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.

JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.

CARL EDWARD MAGNUSSON, PH. D. (Wisconsin), E. E. (Minnesota), ACTING DIRECTOR.

HUGO WINKENWERDER, M. F. (Yale), Forest Products.

MILNOR ROBERTS, A. B. (Stanford), Mining and Metallurgy.

HENRY KRITZER BENSON, PH. D. (Columbia), Chemical Engineering and Industrial Chemistry.

CHARLES WILLIAM HARRIS, B. S. (C. E.) (Washington), C. E. (Cornell), Civil Engineering.

EVERETT OWEN EASTWOOD, C. E., A. M. (Virginia), S. B. (Massachusetts Institute of Technology), Mechanical Engineering.

FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Physics Standards and Tests.

The Engineering Experiment Station was formally organized in December, 1917, in order to coördinate the engineering investigations in progress and to facilitate the development of industrial research in the University.

A large number of investigations in the industrial field have been in progress for many years in the University, either by the efforts of individual faculty members and students or through organized groups, such as the Timber Testing Laboratory, the Bureau of Testing, Radio Experiment Station, and especially the Bureau of Industrial Research. As an indication of the research already accomplished, reference is made to the important papers already published.

The Engineering Experiment Station includes all the bureaus and departmental groups previously active in engineering and industrial research, as well as the field occupied by individual investigators.

The scope of the work is twofold:

(a) To investigate and to publish information concerning engineering problems of a more or less general nature that would be helpful in municipal, rural and industrial affairs;

(b) To undertake extended research and to publish reports on engineering and scientific problems.

The purpose of the station is to aid in the industrial development of the state and nation by scientific research and by furnishing information for the solution of engineering problems. Every effort will be made to cooperate effectively with professional engineers and the industrial organizations in the state. Investigations of primary interest to the individual or corporation proposing them, as well as those of general interest, will be undertaken through the establishment of fellowships.

The control of the Engineering Experiment Station is vested in an administrative staff consisting of the president of the University, the dean

of the College of Engineering, as ex-officio director, and seven members of the faculty. For administrative purposes, the work of the station is organized into seven divisions:

#### 1. FOREST PRODUCTS

This division covers the field of the College of Forestry, and includes wood distillation, wood preservation and coöperative work with the Seattle Station of the United States Timber Testing Laboratory.

#### 2. MINING AND METALLURGY

This division represents the field of the College of Mines, and includes coöperative work of the Pacific Northwest Station of the United States Bureau of Mines.

#### 3. CHEMICAL ENGINEERING AND INDUSTRIAL CHEMISTRY

This division is a continuation of the Bureau of Industrial Research and represents the application of chemistry to industrial problems.

#### 4. CIVIL ENGINEERING

This division covers the field of the Department of Civil Engineering, with emphasis on hydraulic and sanitary engineering and the testing of road and structural materials.

#### 5. ELECTRICAL ENGINEERING

This division includes the several branches of electrical engineering: electric railways, telephones, telegraphs, radio, illumination and electric power.

#### 6. MECHANICAL ENGINEERING

This division includes mechanical engineering, marine engineering, aëronautics and aviation.

#### 7. PHYSICS STANDARDS AND TESTS

This division is equipped with reliable physical standards, and the work is a continuation of what has been done for the past eleven years by the Bureau of Testing.

Inquiries in regard to the work of the Engineering Experiment Station should be addressed to the Director.

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### SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER COLLEGES OF THE UNIVERSITY

#### ASTRONOMY

The Observatory

21. **ENGINEERING ASTRONOMY.** Two credits per quarter. Second quarter. Prerequisite, Math. 52 and C. E. Four laboratory periods per week. Laboratory deposit, \$1.00. **BOOTHROYD.**

An elementary course designed to give the student the ability to determine time, latitude and azimuth from observations on the sun and stars with the surveyor's transit.

22. **GEODETIC SURVEYING.** Two credits per quarter. First quarter. Prerequisite Math. 52 and C. E. Four laboratory periods per week. Laboratory deposit, \$1.00. BOOTHROYD.

Precise surveying methods and elements of geodesy, mapping and map projection. A course especially for engineers who desire a knowledge of precise surveying methods such as are used in city surveying work and in geodetic surveys.

23. **NAUTICAL ASTRONOMY.** Three credits per quarter. First quarter. Prerequisite, Mathematics 52. One recitation and four laboratory periods per week. Laboratory deposit, \$1.00. BOOTHROYD.

An elementary course emphasizing the elements of nautical astronomy. Designed for navigators to give reasonable facility in the use of the sextant and in making astronomical observations and reductions necessary in navigating a ship.

## BACTERIOLOGY

Science Hall

103. **GENERAL BACTERIOLOGY.** Four credits per quarter. First quarter. For chemical engineers. Prerequisite, junior standing; a general knowledge of chemistry, botany or zoology. Laboratory deposit, \$5.00.

Methods of growing and examining bacteria and studying their morphology, physiology and distribution.

104. **SANITARY AND INDUSTRIAL BACTERIOLOGY.** Four credits per quarter. Second quarter. For chemical engineers. Prerequisite, course 103. Laboratory deposit, \$5.00.

A brief survey of disease bacteria. Most of the time is given to sanitation and industry. Inspection trips.

\*111. **BACTERIOLOGICAL ANALYSIS.** Two credits per quarter. Third quarter. Two three-hour laboratory periods per week. Laboratory deposit, \$5.00.

\*113. **SANITARY PROBLEMS.** Three credits per quarter. Third quarter. Three recitations per week.

## ECONOMICS

Commerce Hall

81. **INTRODUCTORY ACCOUNTING.** Three credits per quarter. First and third quarters. Prerequisite, sophomore standing.

## ENGLISH

Denny Hall

5-6. **COMPOSITION FOR ENGINEERS.** Three credits per quarter. First, second or third quarter. For students in the College of Engineering, Mines and Forestry.

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\* May not be given in 1918-1919.

**GEOLOGY**

Science Hall

1. **GENERAL GEOLOGY: Dynamical.** Five credits per quarter. First or second quarter. Lectures and laboratory work, with occasional half-day field trips. (Laboratory work, two credits, also open to those who are taking course 101, and others who have had adequate preparation.) Laboratory deposit, \$1.00. LEIGHTON.

The geological agencies and processes affecting the earth, their results, and how to identify them.

5. **ENGINEERING GEOLOGY.** Five credits per quarter. Three class and laboratory periods per week. Laboratory deposit, \$1.00. CULVER. A survey of the field of general geology. Occasional field trips.

11. **METEOROLOGY AND ELEMENTARY CLIMATOLOGY.** Three or five credits per quarter, with or without laboratory. First and second quarters. Laboratory deposit, \$1.00. SAUNDERS.

A study of the weather elements and controls; the causes and effects of atmospheric conditions. The principles and methods of weather forecasting and use of instruments.

**HISTORY**

Denny Hall

For description of courses in history, see bulletin of the College of Liberal Arts.

**LAW**

Commerce Hall

54-55-56. **BUSINESS LAW.** Three credits per quarter. First, second and third quarters. AYER.

This course covers the fundamental principles of law. The more general and practical principles are developed from problems and selected cases, particularly as related to the law of contracts, property, agency, negotiable paper, insurance, partnership and corporation, with special lectures as to statutory regulations.

**MATHEMATICS**

Science Hall

51. **ALGEBRA.** Three credits per quarter. First, second or third quarter. Prerequisite, one and one-half years' algebra, one year plane geometry. Primarily for students in the Colleges of Engineering and Mines.

52. **PLANE TRIGONOMETRY.** Three credits per quarter. First, second or third quarter. Primarily for students in the Colleges of Engineering and Mines.

58. **ANALYTICAL GEOMETRY.** Three credits per quarter. First, second or third quarter. Primarily for students in the Colleges of Engineering and Mines.

61, 62, 63. CALCULUS I, II, III. Three credits per quarter. Primarily for students in the Colleges of Engineering and Mines.

### MILITARY SCIENCE

#### Armory

A course of two years in military training is required. All able-bodied male students except those from foreign countries, not intending to become naturalized, must take the course which by regulation of the University is required during the first and second years. Furthermore, every male undergraduate student is required to take physical exercise or athletics during each week of his attendance at the University, unless excused by his dean and the physical director.

### MINING ENGINEERING

#### Mines Hall

160. MINING AND DEMELITION. Three credits per quarter. Second quarter. Prerequisite, senior standing.

Lectures on methods of tunneling in rock and unconsolidated ground with relation to military operations.

161. EXPLOSIVES. Three credits per quarter. Third quarter. Prerequisite, senior standing.

The manufacture, use, handling, and storage of explosives used in mining, tunneling and ordnance work.

### MODERN LANGUAGE

#### Denny Hall

For description of courses in modern language, see bulletin of the College of Liberal Arts.

### PHYSICS

#### Denny Hall

54. ELEMENTS OF PHOTOGRAPHY. Three credits per quarter. Third quarter. Two class and one three-hour laboratory period per week. Prerequisite, high school physics or chemistry. Laboratory deposit, \$2.50. OSBORN.

97, 98, 99. PHYSICS FOR ENGINEERS. Five credits per quarter. First, second and third quarters. Three class and two laboratory periods per week. Prerequisite, high school physics and fifteen hours of college mathematics. Laboratory deposit, \$2.50. BRAKEL.

114. ELECTRICAL MEASUREMENTS. Three credits per quarter. Third quarter. Three three-hour laboratory periods per week. Prerequisite courses 97, 98, 99. Laboratory deposit, \$2.50. BRAKEL.

188, 189. BALLISTICS. Three credits per quarter. Third and first quarters.

### ZOOLOGY

#### Science Hall

8-10. GENERAL PHYSIOLOGY. Three credits per quarter. First quarter. Lectures. SMITH.

# College of Fine Arts

## THE FACULTY

- HENRY SUZZALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.  
IRVING MACKAY GLEN, A. M. (Oregon), Professor of Music, DEAN.  
WALTER EDMUND SQUIRE, Graduate in Music (Northwestern), A. A. G. O. Assistant Professor of Music.  
MORITZ ROSEN, Graduate (Warsaw Conservatory), Assistant Professor of Music.  
ALBERT FRANK VENINO (New York College, Stuttgart Conservatory, Leschetzky), Assistant Professor of Music.  
FRANCIS DICKEY, A. M. (Columbia), Assistant Professor of Music.  
CARL FREILINGHUYSEN GOULD, A. B. (Harvard), Assistant Professor of Architecture.  
HAMILTON ACHILLE WOLF (National Academy of Design), Assistant Professor of Fine Arts.  
DAVID JOHN MYERS (Massachusetts Institute of Technology), Assistant Professor of Architecture.  
ROBERT FULTON MCCLELLAND (Massachusetts Institute of Technology), Assistant Professor of Architecture.  
HELEN BALOE CULVER (Columbia, Pratt Institute), Instructor in Design.  
LIDA SCHIRMER, Instructor in Music.  
MRS. LOUISE VAN OGLE, Instructor in Music.  
HAROLD OGDEN SEKSMITH (Armour Institute), Instructor in Architecture.  
ALBERT PORTER ADAMS, Instructor in Music.  
ANNE VOELKER (Oberlin, Michigan), Assistant in Music.  
ANNETTE EDENS (New York School of Fine and Applied Arts, Columbia), Instructor in Drawing.
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- EVERETT OWEN EASTWOOD, C. E., A. M. (Virginia), S. B. (Massachusetts Institute of Technology), Professor of Mechanical Engineering.  
DAVID CONNOLLY HALL, M. D. (Chicago), University Health Officer and Director of Physical Education for Men.  
WILLIAM TAYLOR PATTEN, Captain U. S. A., Retired, Professor of Military Science and Tactics.  
WILLIAM FIELDING OGBURN, PH. D. (Columbia), Professor of Sociology.  
CHARLES CHUBOK MORE, C. E., M. S. (Lafayette), M. C. E. (Cornell), Professor of Civil Engineering.  
THOMAS KAY SIDNEY, PH. D. (Chicago), Associate Professor of Latin and Greek.  
GEORGE EARL FRIELAND, A. M. (Clark), Assistant Professor of Education.  
HARVEY BRUCE DENSMORE, A. B. (Oxford), Assistant Professor of Greek.  
GINO ARTURO RATTI, PH. D. (Grenoble) Assistant Professor of French.  
JOEL MARCUS JOHANSON, A. B. (Washington), Assistant Professor of English.  
ERNEST OTTO BOEKLIN, PH. D. (Heidelberg), Assistant Professor of German.  
SAMUEL HERBERT ANDERSON, PH. D. (Illinois), Assistant Professor of Physics.  
JESSIE B. MERRICK, B. S. (Columbia), Director of Physical Education for Women.  
ERIC TEMPLE BELL, PH. D. (Columbia), Assistant Professor of Mathematics.  
OVERT JOHN DUCASSE, PH. D. (Harvard), Assistant Professor of Philosophy.

<sup>1</sup> Absent on war service.

**\*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:

8 units of English.

2 units of mathematics (one unit algebra, one unit plane geometry).

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, zoölogy, 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.

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:

2 units in *one* foreign language.

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

1 unit in a history (or United States history and civics).

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. It is also advisable that students intending to enter the course in architecture present credits for preparatory work in trigonometry and freehand drawing.

Students intending to enter any of the music courses leading to a degree must satisfy the head of the department that they have completed in addition to the usual high school preparation the equivalent of four years' work in piano, showing that they are familiar with the rudiments and can play well scales and chords in all positions, the smaller sonatas of Haydn, Mozart and Beethoven, and easier compositions representative of the best literature for the piano.

\* More detailed information concerning admission is furnished in a separate section of the University Bulletin, known as Entrance Information. (Pages 7-11)

† 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.

## 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 192 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, elementary harmony, public school music, ear training and melody writing, school music and music education, vocal music, education and drawing or some other approved elective. Only students of advanced standing can complete this course in less than two years.

## CURRICULA OF THE COLLEGE OF FINE ARTS

## CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN VOCAL MUSIC

## FRESHMAN YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Music 1 (fundamentals).....	2	Music 2 (fundamentals)....	2	Music 8 (fundamentals)....	2
Music 4 (history).....	2	Music 5 (history).....	2	Music 6 (history).....	2
Music 7 (sight sing.).....	2	Music 8 (sight. sing.)....	2	Music 9 (sight sing.).....	2
Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Modern Language.....	5	Modern Language.....	5	Modern Language.....	5
English Composition.....	3	English Composition.....	3	English Composition.....	3
Phy. Ed. or Mil. Sci.....	2	Phy. Ed. or Mil. Sci.....	2	Phy. Ed. or Mil. Sci.....	2
	<u>19</u>		<u>19</u>		<u>19</u>

## SOPHOMORE YEAR

Music 10 (choral study)....	1	Music 10 (choral study)....	1	Music 10 (choral study)....	1
Music 18 (ap. music).....	2	Music 18 (ap. music).....	2	Music 18 (ap. music).....	2
Music 31 (harmony).....	2	Music 32 (harmony).....	2	Music 33 (harmony).....	2
Political Science.....	5	Physics 51-52.....	5	Physics 51-52.....	5
Modern Language.....	5	Modern Language.....	5	Modern Language.....	5
Phy. Ed. or Mil. Sci.....	2	Phy. Ed. or Mil. Sci.....	2	Phy. Ed. or Mil. Sci.....	2
	<u>17</u>		<u>17</u>		<u>17</u>

## JUNIOR YEAR

Music 10 (choral study)....	1	Music 10 (choral study)....	1	Music 18 (ap. music).....	2
Music 18 (ap. music).....	2	Music 18 (ap. music).....	2	Music 103 (adv. har.).....	2
Music 101 (adv. har.).....	2	Music 102 (adv. har.).....	2	Music 112 (form and anal.)	2
Music 110 (form and anal.)	2	Music 111 (form and anal.)	2	Music 106 (adv. hist.)....	2
Music 104 (adv. hist.)....	2	Music 105 (adv. hist.)....	2	Music 109 (counterpoint)...	2
Music 107 (counterpoint)...	2	Music 108 (counterpoint)...	2	Modern Language.....	5
Modern Language.....	5	Modern Language.....	5		
	<u>16</u>		<u>16</u>		<u>16</u>

## SENIOR YEAR

Music 10 (choral study)....	1	Music 10 (choral study)....	1	Music 18 (ap. music).....	2
Music 18 (ap. music).....	2	Music 18 (ap. music).....	2	Music 121 (appreciation)...	2
Music 119 (music ap.).....	2	Music 120 (mus. ap.).....	2	Music 118 (composition)...	2
Music 116 (composition)...	2	Music 117 (composition)...	2	Philosophy 115-6 (aes.)...	5
Elective.....	8	Elective.....	8	Elective.....	2
	<u>15</u>		<u>15</u>		<u>15</u>

\* As a substitute for the senior program, the student may have the option of offering an approved original composition or work in an elective course approved by the advisor and the dean.

### CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH MAJOR IN INSTRUMENTAL MUSIC

FRESHMAN YEAR					
<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Music 1 (fundamentals).....	2	Music 2 (fundamentals).....	2	Music 3 (fundamentals).....	2
Music 7 (sight sing.).....	2	Music 3 (sight sing.).....	2	Music 9 (sight sing.).....	2
Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Modern Language.....	5	Modern Language.....	5	Modern Language.....	5
English Composition.....	3	English Composition.....	3	English Composition.....	3
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	17		17		17
SOPHOMORE YEAR					
Music 4 (history).....	2	Music 5 (history).....	2	Music 6 (history).....	2
Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Music 31 (harmony).....	2	Music 32 (harmony).....	2	Music 33 (harmony).....	2
Modern Language.....	3	Modern Language.....	3	Modern Language.....	3
Political Science.....	5	Physics 51-52.....	5	Physics 51-52.....	5
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	17		17		17
JUNIOR YEAR					
Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Music 101 (adv. har.).....	2	Music 102 (adv. har.).....	2	Music 103 (adv. har.).....	2
Music 104 (adv. hist.).....	2	Music 105 (adv. hist.).....	2	Music 106 (adv. hist.).....	2
Music 107 (counterpoint).....	2	Music 108 (counterpoint).....	2	Music 109 (counterpoint).....	2
Music 110 (form and anal.).....	2	Music 111 (form and anal.).....	2	Music 112 (form and anal.).....	2
Modern Language.....	5	Modern Language.....	5	Modern Language.....	5
	16		16		16
SENIOR YEAR					
Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Music 119 (appreciation).....	2	Music 120 (appreciation).....	2	Music 121 (appreciation).....	2
Music 116 (composition).....	2	Music 117 (composition).....	2	Music 118 (composition).....	2
Elective.....	8	Elective.....	8	*Music-program.....	2
	15		15	Philosophy 115-6 (aes.).....	5
	15		15		14

### CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN MUSICAL THEORY

FRESHMAN YEAR					
Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Music 4 (history).....	2	Music 5 (history).....	2	Music 6 (history).....	2
Music 7 (sight sing.).....	2	Music 32 (harmony).....	2	Music 33 (harmony).....	2
Music 31 (harmony).....	2	English Composition.....	3	English Composition.....	3
English Composition.....	3	Modern Language.....	5	Modern Language.....	5
Modern Language.....	5	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
Phys. Ed. or Mil. Sci.....	2		17		17
	19		17		17
SOPHOMORE YEAR					
Music 10 (or elective).....	1	Music 10 (or elective).....	1	Music 10 (or elective).....	1
Music 18 (ap. music).....	3	Music 102 (adv. har.).....	2	Music 18 (ap. music).....	3
Music 101 (adv. har.).....	2	Music 111 (form and anal.).....	2	Music 103 (adv. har.).....	2
Music 110 (form and anal.).....	2	Physics 51.....	5	Music 112 (form and anal.).....	2
Political Science.....	5	Elective.....	3	Physics 51-53.....	5
Modern Language.....	3	Phys. Ed. or Mil. Sci.....	2	Elective.....	3
Phys. Ed. or Mil. Sci.....	2		15	Phys. Ed. or Mil. Sci.....	2
	18		15		18
JUNIOR YEAR					
Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Music 107 (counterpoint).....	2	Music 108 (counterpoint).....	2	Music 109 (counterpoint).....	2
Music 116 (composition).....	2	Music 117 (composition).....	2	Music 118 (composition).....	2
Modern Language.....	5	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Elective.....	4	Elective.....	4	Elective.....	4
	16		16		16

\* As a substitute for the senior program, the student may have the option of offering an approved original composition or work in an elective course approved by the advisor and the dean.

SENIOR YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	2
Music 10 (or elective).....	1	Music 10 (or elective).....	1	Music (vocal composition)..	2
Music (vocal composition)..	2	Music (vocal composition)..	2	Music (instrumental comp.)	2
Music (instrumental comp.)	2	Music (instrumental comp.)	2	Music (cannon and fugue)..	2
Music (cannon and fugue)..	2	Music (cannon and fugue)..	2	Music 106 (adv. hist.).....	2
Music 104 (adv. hist.).....	2	Music 105 (adv. hist.).....	2	Philosophy 129 (aes.).....	5
Elective .....	3	Elective .....	3		
	<hr/>		<hr/>		<hr/>
	15		15		16

CURRICULUM LEADING TO THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN PUBLIC SCHOOL MUSIC

FRESHMAN YEAR

Music 1 (fundamentals)....	2	Music 2 (fundamentals)....	2	Music 3 (fundamentals)....	2
Music 7 (sight sing.).....	2	Music 8 (sight sing.).....	2	Music 9 (sight.sing.).....	2
Music 10 (choral study)....	1	Music 10 (choral study)....	1	Music 16 (ear train.).....	2
Music 14 (ear train.).....	2	Music 15 (ear train.).....	2	Music 18 (ap. music).....	1
Music 18 (ap. music).....	1	Music 18 (ap. music).....	1	English Composition .....	3
English Composition .....	3	English Composition .....	3	Modern Language .....	5
Modern Language .....	5	Modern Language .....	5	Phys. Ed. or Mil. Sci.....	2
Phys. Ed. and Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2		
	<hr/>		<hr/>		<hr/>
	18		18		17

SOPHOMORE YEAR

Music 4 (history).....	2	Music 5 (history).....	2	Music 6 (history).....	2
Music 31 (harmony).....	2	Music 32 (harmony).....	2	Music 33 (harmony).....	2
Music 34 (school music)....	2	Music 35 (school music)....	2	Music 36 (school music)....	2
Modern Language .....	5	Modern Language .....	5	Modern Language .....	5
Psychology .....	5	Physics 51 .....	5	Physics 52 .....	5
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	<hr/>		<hr/>		<hr/>
	19		19		19

JUNIOR YEAR

Music 18 (ap. music).....	3	Music 18 (ap. music).....	3	Music 18 (ap. music).....	3
Music 101 (adv. har.).....	2	Music 102 (adv. har.).....	2	Music 103 (adv. har.).....	2
Music 113 (mus. edu.).....	2	Music 114 (mus. edu.).....	2	Music 115 (mus. edu.).....	2
Modern Language .....	5	Modern Language .....	5	Modern Language .....	5
Political Science .....	5	Education .....	5	Education .....	5
	<hr/>		<hr/>		<hr/>
	17		17		17

SENIOR YEAR

Music 107 (counterpoint)...	2	Music 1 (ap. of music)....	3	Music 109 (counterpoint)...	2
Music 110 (form and anal.)	2	Music 108 (counterpoint)...	2	Music 112 (form and anal.)	2
Music 119 (mus. appre.)....	2	Music 111 (form and anal.)	2	Music 121 (mus. appre.)....	2
Music 122 (mus. ed. & sup.)	2	Music 120 (mus. appre.)....	2	Music 124 (mus. ed. & sup.)	2
Education .....	5	Music 123 (mus. ed. & sup.)	2	Elective .....	2
Elective .....	3	Elective .....	6	Philosophy .....	5
	<hr/>		<hr/>		<hr/>
	16		17		15

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF ARTS IN MUSIC

FRESHMAN YEAR

Music, elective .....	3	Music, elective .....	3	Music, elective .....	3
English Composition .....	3	English Composition .....	3	English Composition .....	3
Modern Language .....	5	Modern Language .....	5	Modern Language .....	5
Chem., Botany or Zoology..	5	Chem., Botany or Zoology..	5	Elective .....	3
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	<hr/>		<hr/>		<hr/>
	18		18		16

SOPHOMORE YEAR

Music, elective .....	5	Music, elective .....	5	Music, elective .....	5
Political Science .....	5	Physics 51-52 .....	5	Physics 51-52 .....	5
Foreign Lang. or elective... 5	5	Foreign Lang. or elective... 5	5	Foreign Lang. or elective... 5	5
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	<hr/>		<hr/>		<hr/>
	17		17		17

NOTE.—(1) Among the music courses indicated above the following are required: 1-2-3, 4-5-6, 7-8-9, 31-32-33, 101-102-103.

(2) Liberal Arts electives for junior and senior years must be chosen from courses in the senior college, except with the consent of the dean.

JUNIOR YEAR					
First quarter	Credits	Second quarter	Credits	Third quarter	Credits
Music, elective .....	6	Music, elective .....	6	Music, elective .....	6
Psychology .....	5	Liberal Arts, elective.....	10	Philosophy .....	5
Liberal Arts, elective.....	5			Liberal Arts, elective.....	5
	<u>16</u>		<u>16</u>		<u>16</u>
SENIOR YEAR					
Music, elective .....	5	Music, elective .....	5	Music, elective .....	5
Liberal Arts, elective.....	10	Liberal Arts, elective.....	10	Liberal Arts, elective.....	10
	<u>15</u>		<u>15</u>		<u>15</u>

A total of twenty-one hours of German and twenty-one hours 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 dean.

Students of the public school music course are required to take Education 165 in the senior year. This practice teaching substitutes for the senior thesis.

CURRICULUM IN ARCHITECTURE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE 185 + 12

FRESHMAN YEAR					
First quarter	Credits	Second quarter	Credits	Third quarter	Credits
French or German .....	5	French or German .....	5	Arch. (freehand) 11.....	2
Civil Engineering 11.....	5 <sup>3</sup>	Civil Engineering <del>11</del> 12.....	5 <sup>3</sup>	Civil Engineering <del>11</del> 13.....	5 <sup>3</sup>
Arch. (history) 1.....	2	Arch. (history) 2.....	2	Arch. (history) 3.....	2
Arch. (design) 4.....	3	Arch. (design) 5.....	3	Arch. (design) 6.....	3
Arch. (des. geom.) 7.....	1	Arch. (des. geom.) 8.....	1	Arch. (des. geom.) 9.....	1
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Arch. (shades & shad.) 10.....	2
	<u>18</u> <sup>14</sup>		<u>18</u> <sup>14</sup>	Phys. Ed. or Mil. Sci.....	2
SOPHOMORE YEAR					
French or German .....	3	French or German .....	3	*Arch. (freehand) 74.....	2
*Arch. (freehand) 73.....	2	†Mathematics 64.....	5	†Mathematics 65.....	5
Arch. (history) 51.....	2	Arch. (history) 52.....	2	Arch. (history) 53.....	2
Arch. (design) 54.....	5	Arch. (design) 55.....	5	Arch. (design) 56.....	5
Arch. (bldg. cons.) 59.....	2	Arch. (bldg. cons.) 60.....	2	Arch. (bldg. cons.) 61.....	2
Arch. (perspective) 57.....	3	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
Phys. Ed. or Mil. Sci.....	2				
	<u>18</u> <sup>12</sup>		<u>18</u> <sup>17</sup>		<u>18</u>
JUNIOR YEAR					
Physics 1 .....	5	Physics 2 .....	5	Water Color 111 .....	2
Arch. (history) 101.....	1	Arch. (history) 102.....	1	Arch. (history) 103.....	1
Arch. (design) 104.....	3	Arch. (design) 105.....	3	Arch. (design) 106.....	3
Water Color 109.....	2	Arch. (life class) 112.....	2	Arch. (life class) 113.....	2
†Mathematics 66.....	5	Water Color 110 .....	2	Mechanical Eng. 82.....	3
English .....	3	English .....	3	Elective .....	2
				English .....	3
	<u>19</u>		<u>16</u>		<u>16</u>
SENIOR YEAR					
Arch. (history) 151.....	2	Arch. (history) 152.....	2	Arch. (history) 153.....	2
Arch. (design) 154.....	3	Arch. (design) 155.....	3	Arch. (design) 156.....	3
Arch. (freehand) .....	1	Arch. (freehand) .....	1	Arch. (freehand) .....	1
Art Appreciation 166.....	1	Art Appreciation 167 .....	1	Art Appreciation 168.....	1
Physics .....	5	Physics .....	5	Thesis .....	4
Forestry 319 .....	3	Elective .....	3	Elective .....	5
	<u>15</u>		<u>15</u>		<u>16</u>

\* Not offered in 1918-1919.

† Architecture students for year 1918-1919 will substitute Math. 57-58-59 for Math. 64-65-66.

not in catalog

SENIOR YEAR

Engineering Option

First quarter	Credits	Second quarter	Credits	Third quarter	Credits
Arch. (struc. details) 161... 3		Civil Eng. (mech.) 182.... 3		Civil Eng. (survey) 20.... 3	
Civil Eng. (mech.) 181.... 3		Physics ..... 5		Law (contract) 130. 5. 3	
Physics ..... 5		Civil Eng. (mas. con.) 183. 3		Civil Eng. (mas. con.) 184. 3	
Business Law ..... 3		Business Law . 5. 5. .... 3		Thesis ..... 5	
Elective ..... 2		Elective ..... 2			
	16		16		14

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF FINE ARTS WITH A MAJOR IN PAINTING AND DESIGN 1867-12

FRESHMAN YEAR

P. D. (freehand) 5..... 4	P. D. (freehand) 6..... 4	P. D. (freehand cast) 7.... 4
†P. D. (art struc.) 9..... 4	P. D. (art struc.) 10..... 4	P. D. (art struc.) 11..... 4
Art Appreciation 16..... 1	Art Appreciation 17..... 1	Art Appreciation 18..... 1
English Composition ..... 3	English Composition ..... 3	English Composition ..... 3
Modern Language ..... 5	Modern Language ..... 5	Modern Language ..... 5
Phys. Ed. or Mil. Sci. .... 2	Phys. Ed. or Mil. Sci. .... 2	Phys. Ed. or Mil. Sci. .... 2
	19	19

SOPHOMORE YEAR

*†P. D. (art struc.) 53.... 4	P. D. (art struc.) 54..... 4	P. D. (art struc.) 55..... 4
P. D. (illus.) 56..... 3	P. D. (illus.) 57..... 3	P. D. (illus.) 58..... 3
Modern Language ..... 5	Modern Language ..... 5	Modern Language ..... 5
Greek Art 8..... 1	Greek Art 9..... 1	Greek Art 10..... 10
Elective ..... 4	Elective ..... 4	Elective ..... 4
Phys. Ed. or Mil. Sci. .... 2	Phys. Ed. or Mil. Sci. .... 2	Phys. Ed. or Mil. Sci. .... 2
	17-16	17-16

JUNIOR YEAR

Arch. (arch. dr.) 8..... 1-2	Arch. (arch. dr.) 8. 7. .... 1-2	Arch. (arch. dr.) 8..... 2
†P. D. (art struc.) 103.... 3	P. D. (art struc.) 104.... 3	P. D. (art struc.) 105.... 3
P. D. (portrait) 107.... 3	P. D. (portrait) 108.... 3	P. D. (portrait) 109.... 3
Roman Art (lat.) 14.... 1	Roman Art (lat.) 15.... 1	Roman Art (lat.) 16.... 1
Political Science ..... 5	Chemistry (color) ..... 5	Chemistry (color) ..... 5
Elective ..... 2	Elective ..... 2	Elective ..... 2
	15-16	15-16

SENIOR YEAR

†P. D. (art struc.) 157.... 3	P. D. (art struc.) 158.... 3	P. D. (art struc.) 159.... 3
P. D. (por. and life 160, or mural dec. 163)..... 4	P. D. (por. and life 161, or mural dec. 164)..... 4	P. D. (por. and life 162, or mural dec. 165)..... 4
†Arch. (art apprec. and int. dec.) 166 ..... 1	Arch. (art apprec. and int. dec.) 167 ..... 1	Arch. (art apprec. and int. dec.) 168 ..... 1
Elective ..... 7	Elective ..... 7	Elective ..... 7
	15	15

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF FINE ARTS WITH A MAJOR IN PUBLIC SCHOOL DRAWING 1877-12

FRESHMAN YEAR

P. D. (freehand draw.) 5... 4	P. D. (freehand draw.) 6... 4	P. D. (freehand draw.) 7... 4
P. D. (art struc.) 9..... 4	P. D. (art struc.) 10..... 4	P. D. (art struc.) 11..... 4
Art Appreciation 16..... 1	Art Appreciation 17..... 1	Art Appreciation 18..... 1
English Composition ..... 3	English Composition ..... 3	English Composition ..... 3
Modern Language ..... 5	Modern Language ..... 5	Modern Language ..... 5
Phys. Ed. or Mil. Sci. .... 2	Phys. Ed. or Mil. Sci. .... 2	Phys. Ed. or Mil. Sci. .... 2
	19-17	19-17

\* Not offered in 1918-1919.

† The courses in art structure comprise the following: Freshman, Principles of design; Sophomore, Needle designing, wood block printing, design; Junior, Pottery, interior decorating, posters; Senior, Jewelry, landscape composition, design.

SOPHOMORE YEAR

First quarter	Credits	Second quarter	Credits	Third quarter	Credits
P. D. (art struc.) 53.....	4	P. D. (art struc.) 54.....	4	P. D. (art struc.) 55.....	4
P. D. (illus.) 56.....	3	P. D. (illus.) 57.....	3	P. D. (illus.) 58.....	3
Political Science.....	5	<del>Chemistry (color)</del> .....	5	<del>Chemistry (color)</del> .....	5
Modern Language.....	3	Modern Language.....	3	Modern Language.....	3
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	<u>17</u>		<u>17</u>		<u>17</u>

JUNIOR YEAR

P. D. (art struc.) 103.....	3	P. D. (art struc.) 104.....	3	P. D. (art struc.) 105.....	3
P. D. (illus.) 107.....	3	P. D. (illus.) 108.....	3	P. D. (illus.) 109.....	3
Greek Art 8.....	1	Greek Art 9.....	1	Greek Art 10.....	1
Education.....	5	Education.....	3	Education.....	3
Elective.....	3	Elective.....	5	Elective.....	5
	<u>15</u>		<u>15</u>		<u>15</u>

SENIOR YEAR

P. D. (art struc.) 157.....	3	P. D. (art struc.) 158.....	3	P. D. (art struc.) 159.....	3
P. D. (meth. tech. art) 172.....	3	P. D. (art appr. arch.) 167.....	1	P. D. (art appr. arch.) 168.....	1
P. D. (art appr. arch.) 166.....	1	Education.....	3	Philosophy.....	5
Education.....	5	Phys. Ed. 109 (folk danc.).....	2	Elective.....	7
Elective.....	3	Elective.....	6		
	<u>15</u>		<u>15</u>		<u>16</u>

CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF FINE ARTS WITH A MAJOR IN MUSIC AND DRAWING

FRESHMAN YEAR

Music 4 (hist. of music)...	2	Music 5 (hist. of music)...	2	Music 6 (hist. of music)...	2
Music 7 (sight singing)...	2	Music 8 (sight singing)...	2	Music 9 (sight singing)...	2
P. D. 5 (drawing).....	4	P. D. 6 (drawing).....	4	P. D. 7 (drawing).....	4
Modern Language.....	5	Modern Language.....	5	Modern Language.....	5
English Composition.....	3	English Composition.....	3	English Composition.....	3
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	<u>18</u>		<u>18</u>		<u>18</u>

SOPHOMORE YEAR

Music 14 (ear tr. or elec.)..	2	Music 15 (ear tr. or elec.)..	2	Music 16 (ear tr. or elec.)..	2
Music 34 (school music)....	2	Music 35 (school music)....	2	Music 36 (school music)....	2
Modern Language.....	5	Modern Language.....	5	Modern Language.....	5
Political Science.....	5	Chemistry (color).....	5	Chemistry (color).....	5
P. D. 9 (art struc.).....	3	P. D. 10 (art struc.).....	3	P. D. 11 (art struc.).....	3
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	<u>19</u>		<u>19</u>		<u>19</u>

JUNIOR YEAR

Music 18 (ap. music).....	1	Music 18 (ap. music).....	1	Music 18 (ap. music).....	1
Music 31 (harmony).....	2	Music 32 (harmony).....	2	Music 33 (harmony).....	2
Music 113 (music ed.).....	2	Music 114 (music ed.).....	2	Music 115 (music ed.).....	2
P. D. 53 (art struc.).....	3	P. D. 54 (art struc.).....	3	P. D. 55 (art struc.).....	3
P. D. 145 (art appr.).....	2	P. D. 146 (art appr.).....	2	P. D. 147 (art appr.).....	2
P. D. 107 (water color)....	2	P. D. 108 (water color)....	2	P. D. 109 (water color)....	2
Education.....	5	Education.....	3	Education.....	3
	<u>17</u>	Elective.....	2	Elective.....	2
			<u>17</u>		<u>17</u>

SENIOR YEAR

Music 18 (ap. music).....	2	Music 18 (ap. music).....	2	Music 18 (ap. music).....	2
Music 119 (music ap.).....	2	Music 120 (music ap.).....	2	Music 121 (music ap.).....	2
Music 155-6 (music super.)..	2	Music 155-6 (music super.)..	2	Music 155-6 (music super.)..	2
P. D. 172 (pub. school drawing methods).....	2	P. D. 173 (pub. school drawing methods).....	2	P. D. 174 (pub. school drawing methods).....	2
P. D. 175 (illus. and life)...	2	P. D. 176 (illus. and life)...	2	P. D. 177 (illus. and life)...	2
Education.....	5	Education.....	3	Education.....	3
	<u>15</u>	Elective.....	2	Elective.....	5
			<u>15</u>		<u>15</u>

\* Among the courses in education, Practice Teaching must be included in the senior year.

**CURRICULUM IN ART LEADING TO CERTIFICATES OF PROFICIENCY FOR  
SUPERVISORS OF ART**

**FIRST YEAR**

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
P. D. (art struc.) 9.....	4	P. D. (art struc.) 10.....	4	P. D. (art struc.) 11.....	4
P. D. (freehand) 5.....	4	P. D. (freehand) 6.....	4	P. D. (freehand cast) 7....	4
English Composition .....	3	English Composition .....	3	English Composition .....	3
Modern Language .....	5	Modern Language .....	5	Modern Language .....	5
Art Appreciation 16.....	1	Art Appreciation 17.....	1	Art Appreciation 18.....	1
Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2	Phys. Ed. or Mil. Sci.....	2
	19		19		19

**SECOND YEAR**

P. D. (art struc.) 53.....	4	P. D. (art struc.) 54.....	4	P. D. (art struc.) 55.....	4
P. D. (freehand illus.) 56..	3	P. D. (freehand illus.) 57..	3	P. D. (freehand) 58.....	3
Psychology .....	5	Education .....	5	Education .....	5
Methods of Teach. Art....	3	Elective .....	5	Public School Draw. 101... 2	
Elective .....	2	Phys. Ed. or Mil. Sci.....	2	Elective .....	3
Phys. Ed. or Mil. Sci.....	2			Phys. Ed. or Mil. Sci.....	2
	19		19		19

**DEPARTMENTS OF INSTRUCTION**

The University reserves the right to withdraw temporarily any course which is not justified by the demand.

**MUSIC**

Meany Hall

PROFESSOR GLEN, ASSISTANT PROFESSORS ROSEN, VENINO, DICKEY, MRS. VAN OGLE,  
MISS VOELKER, MISS FERRYMAN, MR. ADAMS

Music 22 is of immediate application to war or war industries.

**COURSES**

1-2-3. **MUSIC APPRECIATION: Fundamentals of Music.** Two credits per quarter. First, second and third quarters. 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.

4-5-6. **HISTORY OF MUSIC.** Two credits per quarter. First, second and third quarters. GLEN.

A survey course, covering the progress of musical development from the primitive period to the modern.

7-8-9. **SIGHT SINGING.** Two credits per quarter. First, second and third quarter. DICKEY.

A course for prospective grade supervisors and for music students. This course will be conducted in two sections—one for beginners and the other for students who have had some experience in sight singing.

10 CHORAL STUDY. One credit per quarter. First or second quarters. 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.

14-15-16. EAR TRAINING AND MELODY WRITING. Two credits per quarter. First, second and third quarters. DICKEY.

The purpose of this course is to familiarize students with the simplest principles of melodic invention and to train them to hear accurately. Study in notation will precede and supplement the melody writing.

17. CHORAL STUDY. Two credits per quarter. First quarter. GLEN.

This course provides the opportunity for the study of part songs for men's voices. Candidates admitted only upon examination.

18. APPLIED MUSIC. One to three credits per quarter.

(a) Piano—VENINO, VAN OGLE, VOELKER.

(b) Violin—ROSEN.

(c) Voice—GLEN.

Students of other colleges and schools may earn one or two credits per quarter. Students of the College of Fine Arts carry a larger number of credits—one and one-half to three—as indicated in the set courses. Students enrolled in these courses will be given opportunity, upon demonstration of the required ability, to participate in the public recitals of the department.

Unless excused by reason of advanced standing upon entrance, students who major in courses in applied music will require two lessons a week, ordinarily, in order to cover the work necessary for a degree.

19-20-21. UNIVERSITY ORCHESTRA. One credit per quarter. First, second and third quarters. GLEN.

The University orchestra affords to the qualified students an unusual opportunity for the study of the better grades of orchestral composition. None may be eligible to enter the course unless the director is satisfied of the ability of the applicant.

22-23-24. UNIVERSITY BAND (War Course.) Two credits per quarter. First, second or third quarter. ADAMS.

Competent players of band instruments are admitted to the band upon consent of the bandmaster.

25-26-27. CHAMBER MUSIC. One credit per quarter. First, second and third quarters. ROSEN.

Advanced students in the study of stringed instruments may have the opportunity of studying the musical literature for string trios, quartets and quintets.

28-29-30. ENSEMBLE SINGING. One credit per quarter. First, second and third quarters. DICKEY.

A choral course for women. Only advanced students will be admitted to this course.

**81-82-83. HARMONY.** Two credits per quarter. First, second and third quarters. Prerequisite, courses 1-2-3. ———

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, and the writing of original chord progressions and chants. Tones foreign to the harmony. Organpoint.

**84-85-86. SCHOOL MUSIC.** Two credits per quarters. First, second and third quarters. DICKEY.

A course for supervisors. The first quarter will include the study of material for the primary grades especially for second and third quarters. Some time will be devoted to the study of the child voice in singing. Also a study of material for the upper grammar grades, the high school and glee clubs. Students will have practice in chorus conducting.

**101-102-103. ADVANCED HARMONY.** Two credits per quarter. First, second and third quarters. Prerequisite, courses 81-82-83. ———

Figured and unfigured basses, harmonization of melodies and chorals, original progressions, unprepared, delayed, and unresolved dissonances, remote modulations, three and four voiced writing in dispersed harmony. Text: Foote and Spaulding's "Modern Harmony" or Chadwick's Harmony.

**104-105-106. HISTORY OF MUSIC: Advanced.** Two credits per quarter. First, second and third quarters. VAN OGLE.

A detailed study of important periods and composers of modern music.

**107-108-109. COUNTERPOINT.** Two credits per quarter. First, second and third quarters. ———

Simple counterpoint in two, three and four parts. Canon in various intervals 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.

**110-111-112. FORM AND ANALYSIS.** Two credits per quarter. First, second and third quarters. ———

Chord reading from standard chants, hymns and chorals. The study of primary forms as found in the classic and romantic schools, Bach inventions, song or aria forms, dance forms, variations, rondos, the suite, the sonata, the prelude and fugue.

**113-114-115. MUSIC EDUCATION.** Two credits per quarter. First, second and third quarters. 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.

**116-117-118. COMPOSITION.** Two credits per quarter. First, second and third quarters. ———

Unaccompanied settings of poems for three, four, and five voices. Chants, hymns and chorals—simple and figured. Songs and instrumental compositions in primary forms. Songs with more elaborate accompaniment. Dance and romantic forms with trio. The rondo. Courses 31-32-33, 101-102-103, 107-108-109, or their equivalents, are prerequisite for this course.

119-120-121. **MUSICAL APPRECIATION.** Two credits per quarter. First, second and third quarters. VAN OGLE, GLEN.

A course planned to make music contribute to liberal culture. Actual presentation of musical masterpieces of different periods, by mechanical devices and lectures.

122-123-124. **MUSIC EDUCATION AND SUPERVISION.** Two credits per quarter. First, second and third quarters. 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 school 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.

Students not wishing to offer work in applied music as a major, may receive credit for applied music work done under the supervision of others than the instructional staff of the department, upon satisfying departmental and University requirements by examination. Approved equivalents of applied music courses in piano, voice, and violin may also be credited.

#### PIANO

**FRESHMAN AND SOPHOMORE YEARS:** Major and minor scales and arpeggios; studies selected from Czerny, Cramer, Loeschorn, Kullak, Hiller and Krause; sonatas by Scarlatti, Haydn, Clementi, Mozart and Beethoven; shorter compositions and inventions by Bach; and works from the classic and romantic schools.

**JUNIOR AND SENIOR YEARS:** Scales in thirds, sixths and tenths; studies by Czerny, Clementi, Chopin, Brahms, MacDowell and Moszkowski; Well-tempered Clavichord and suites by Bach; sonatas, pieces including at least one concerto, taken from the classic, romantic or modern composers. At least one recital program must be played from memory from the repertoire studied.

#### VOCAL MUSIC

The course in vocal music is even more flexible than that outlined for piano study. The purpose is to develop the voice and musical understanding so that the best in vocal music may be faithfully interpreted. The fact of having studied vocal music for four years will not necessarily entitle a student to graduation.

**FRESHMAN:** Practical work in voice placing, breathing studies, from

among the following: Concone, Op. 9; Marchesi, Op. 1; Panofki, 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 Method, Book I, Rosen; Exercises Op. 45, Book I, Wohlfahrt; Book I, De Beriot; Exercises, Op. 68.

**SOPHOMORE:** Scales, Hrimaly; Studies, Blumenstengel Op. 33, Mazas, Books I and II; Concerto, Accoly; Scene de Ballet, De Beriot.

**JUNIOR:** Scales, Book II, Baillot; Exercises, Books I and II, Schraedieck; Etudes, Kreutzer, Fiorillo, Rode, Rovelli; Concerto, 9 and 7, De Beriot; Concerta, 2 and 8, Spohr, also one sonata by Handel.

**SENIOR:** Scales, Rosen; Etudes, Dancla; Op. 73, Gavini; Op. 35, Dont; Sonata for violin alone, Bach; Concerto, Bruch, Mendelssohn, D-Minor, Wieniaski and No. 4 Vieuxtemps.

**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 individual instruction, the student will be required to pay tuition fees for this work in addition to the general University tuition fee.

All fees are payable in advance to the Comptroller of the University. The following quotations of regular fees are based on one lesson per week. More than one lesson per week will be charged for at the same rate. All lessons are one-half hour in length.

**PIANO:** Mr. Venino, \$17.00 per quarter; Mrs. Van Ogle, \$17.00 per quarter; Miss Voelker, \$12.00 per quarter; Miss Ferryman, \$12.00 per quarter.

**VOCAL MUSIC:** \$17.00 per quarter.

Dean Glen will give individual instruction in singing and repertoire to a maximum number of ten students. The fee will be at the rate of \$27.00 per quarter for one lesson weekly.

**VIOLIN:** Mr. Rosen, \$17.00 per quarter.

**BAND AND ORCHESTRA INSTRUMENTS:** Mr. Adams, \$12.00 per quarter.

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, \$3.00 per quarter.

Two hours daily, \$5.00 per quarter.

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.

### Architecture Building

ASSISTANT PROFESSORS GOULD, MYERS, MR. SEXSMITH,<sup>1</sup> MR. McCLELLAND<sup>1</sup> AND ASSISTANT PROFESSOR WOLF

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. 42 hours of modern language will be required before graduation. Provision for 21 hours' work is made in the curriculum. A student offering his entire 42 hours on entrance may elect 21 credits on approval of his advisor. Students offering no modern language on entrance will be obliged to do 42 hours' work, or 21 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.

It must be recognized, however, that knowledge of design is the most essential subject in a course preparing students for the profession of architecture.

#### 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.

<sup>1</sup> Absent on war service.

## COURSES

1-2-3. HISTORY AND ELEMENTS OF ARCHITECTURE. Two credits per quarter. First, second and third quarters. Required of majors. Two lectures per week. Juniors in department of Home Economics take first and second quarters, receiving three credits first quarter in which they have a laboratory period, and two credits second quarter. GOULD, McCLELLAND.

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. In second and third quarters a general course in the history of architecture, including all periods from ancient to modern. Lectures and selected readings.

4-5-6. ARCHITECTURAL DESIGN. Three credits per quarter. First, second and third quarters. GOULD, McCLELLAND.

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 of the College of Engineering.

7-8-9. DESCRIPTIVE GEOMETRY. One credit per quarter. First, second and third quarters. One three-hour laboratory period per week. McCLELLAND.

This course is intended to provide training, in mechanical drafting, ability to read working drawings and power to visualize geometrical relations as applied to architecture.

10 SHADES AND SHADOWS. Two credits per quarter. Third quarter. One three-hour laboratory period per week. McCLELLAND.

Construction by descriptive geometry of all shadows commonly found in the presentation of architectural renderings. Frequent examinations will be given.

11. FREEHAND DRAWING. One credit per quarter. Third quarter. WOLF, McCLELLAND.

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.

\*47-48-49. MECHANICS.

51-52-53. HISTORY AND ELEMENTS OF ARCHITECTURE. Two credits per quarter. First, second and third quarters. Required of all students in

the department and open to all students in the University. Regular sophomore course, but may be taken as a part course the first quarter. GOULD.

By means of illustrated lectures Egyptian, Greek and Roman architecture will be studied the first quarter—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 quarter Byzantine, Romanesque, and Gothic architecture will be studied and analyzed in the same manner.

54-55-56. ARCHITECTURAL DESIGN. Five credits per quarter. First, second and third quarters. GOULD, MYERS.

Problems in design and simple problems in planning will be given. Society in Beaux Arts Architects program will be used and work sent to New York City for judgment in competition with work from leading architectural schools of this country.

\* 57. PERSPECTIVE DRAWING. Three credits per quarter. First quarter. McCLELLAND.

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.

59-60-61. BUILDING CONSTRUCTION AND INSPECTION. Two credits per quarter. First, second and third quarters. McCLELLAND.

Lectures on methods employed in building construction, supplemented by detail drawing of various parts of buildings of all types. 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.

101-102-103. HISTORY OF ARCHITECTURE. One credit per quarter. First, second and third quarters. MYERS.

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.

104-105-106. ARCHITECTURAL DESIGN. Three credits per quarter. First, second and third quarters. GOULD, MYERS.

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.

109-110-111. WATER COLOR. Two credits per quarter. First, second and third quarters. WOLF.

Studies from still life and nature. Architectural rendering.

\*112-113. FREEHAND DRAWING.

\*114. SANITATION AND PLUMBING.

\*115-116-117. MECHANICS OF MATERIALS.

\*151-152-153. HISTORY OF MODERN ARCHITECTURE.

\*154-155-156. ARCHITECTURAL DESIGN.

\*161. STRUCTURAL DETAILS.

*166, 167, 168 Art App for arch. 1 cr*

\*205-206. FREEHAND DRAWING.

#### ELECTIVES

Electives may be chosen from among the following named subjects:

Analytical geometry  
 Calculus  
 Architectural rendering  
 Language  
 Music  
 Labor problems  
 Engines and boilers  
 Bridges  
 Higher structures  
 Naval architecture  
 Stone masonry  
 Economics  
 Psychology  
 Public speaking

### III. PAINTING AND DESIGN

Architecture Building

ASSISTANT PROFESSOR WOLF, MRS. CULVER, MISS EDENS

Advanced students applying for credit must present work done to head of the department.

Painting and Design 9, 10, 11, 54, 55, 105, 157, 158 are of immediate application to war or war industries.

#### COURSES

3. PRINCIPLES OF DESIGN. Three credits per quarter. Second quarter. CULVER.

A study of the principles of design in line, dark and light, and color. To develop power of appreciation and creation of good design. For students in home economics.

5-6-7. FREEHAND: Still Life and Cast. Four credits per quarter. First, second and third quarters. WOLF.

Study of the technique of drawing from elementary forms. The use of all mediums — water color, oil, pen, etc. Prerequisite for any subse-

quent course in drawing and painting. Also a course in cast drawing from the models of the antique and modern sculpture, preparatory to drawing from living model.

9-10-11. **ART STRUCTURE: Design.** (War Course.) Four credits per quarter. First, second and third quarters. Laboratory deposit, \$1.00. **CULVER.**

A study of the principles of design in line, dark and light, and color. To develop power of appreciation and creation of good design.

16-17-18. **ART APPRECIATION.** One credit per quarter. First, second and third quarters. **WOLF.**

A survey course covering the historical development, from the art of primitive man to the present day, including the study of the anatomical structure and function of the human body as related to artistic construction. Also the principles that enter into the composition of any pictorial arrangement, whether it be elementary or advanced in character. The study of the elements of perspective necessary to such pictorial arrangement.

\*53. **ART STRUCTURE: Needle Designing.**

54. **ART STRUCTURE: Bookbinding and Woodblock Printing.** (War Course.) Four credits per quarter. Second quarter. **CULVER.**

A course in the designing of books and woodblocks, followed by application in bookbinding and woodblock printing.

55. **ART STRUCTURE: Woodblock Printing and Furniture Decoration.** (War Course.) Four credits per quarter. Third quarter. **CULVER.**

Designing of woodblocks and printing on textiles.

56-57-58. **ILLUSTRATION AND LIFE STUDY.** Two credits per quarter. First, second and third quarters. Prerequisite, freshman freehand. Laboratory deposit, \$3.00. **WOLF.**

Drawing and painting from the model in various mediums, including charcoal, pen and ink, wash, water-color, oil and pastel for reproductive processes such as magazines, newspapers and commercial work, including a study of the anatomy of the human figure.

101. **PUBLIC SCHOOL DRAWING.** Three credits per quarter. Third quarter. **EDENS.**

A course intended for drawing supervisors. It includes the working out of such drawings as would be used in the public schools, viz., line drawing, elementary design, painting and illustration in water colors and crayon, printing, woodblock and printing and simple bookbinding.

103-104. **ART STRUCTURE: Pottery.** Three credits per quarter. First and second quarters. Advanced students will be allowed to work for advanced credits. Laboratory deposit, \$2.00. **EDENS.**

The first quarter devoted to the designing and building of simple forms; the second to the development of skill in the building, molding, glazing, etc., of more elaborate forms.

\*105. ART STRUCTURE: Posters. (War Course). Three credits per quarter. First quarter. EDENS.

Designs as applied to advertising and cartooning.

\*106. ART STRUCTURE: Advanced.

107-108-109. PORTRAIT. Three credits per quarter. First, second and third quarters. Prerequisite, freshman freehand. Laboratory deposit, \$8.00. WOLF.

Artistic and compositional elements in portraiture using all mediums, oil, water-color, pastel, charcoal, etc.

107-108-109. PORTRAITS Advanced. Three credits per quarter. First, second and third quarters. Prerequisite, freshman freehand. Laboratory deposit, \$8.00. WOLF.

111-112. ART STRUCTURE: Interior Decoration. Three credits per quarter. Second and third quarters. EDENS.

\*151-152. LANDSCAPE: Design.

\*153. METHODS OF TEACHING ART. Five credits per quarter. First quarter. CULVER.

A study of the methods of teaching art, including the making of courses of study, the different methods of teaching art, and the collection of useful material for teaching.

*see Practice T. Ed 145*  
154. PRACTICE TEACHING. Five credits per quarter. Second quarter. EDENS, CULVER.

Teaching under supervision in city schools.

157. ART STRUCTURE: Metal Work. (War Course.) Three credits per quarter. First quarter. Laboratory deposit, \$2.00. EDENS.

A course in simple metal work — etching, sawing and hammering of copper and brass.

158. ART STRUCTURE: Jewelry. Three credits per quarter. Second quarters. EDENS.

Design as applied to jewelry; work in silver.

*159 - Landscape Composition 3 or 800*  
160-161-162. PORTRAIT AND LIFE. Four credits per quarter. First, second and third quarters. WOLF.

163-164-165. MURAL DECORATION. Four credits per quarter. First, second and third quarters. Prerequisite, junior standing. WOLF.

Decorative compositions done in oil, applied to the beautifying of the wall spaces, in harmony with the scheme of architecture.

\*166. LANDSCAPE.

*169, 170, 171*  
167, 168. TEXTILE AND COSTUME DRAWING. Two credits per quarter. First and second, third and fourth quarters. EDENS.

Representation of textiles in pencil, color, pen and ink, followed by a study of the relation of costuming to the figure.

**SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER  
COLLEGES OF THE UNIVERSITY**

**CIVIL ENGINEERING**

Engineering Hall

**11. ENGINEERING PROBLEMS.** Three credits per quarter. First, second or third quarter. DUCKERING, WARNER, ROGERS, HAMILTON.

The investigation of simple structures as to loadings, weights and stresses in members by algebraic and graphic methods.

**21. PLANE SURVEYING.** Three credits per quarter. First, second or third quarter. Laboratory deposit, \$3.00. HAYDEN, HAMILTON.

Adjustment of instruments, trigonometric computations, mapping of simple surveys, and a brief introduction to the United States system of public land surveying.

**131. MECHANICS.** Three credits per quarter. First quarter. Prerequisite, course 13, Math. 62. DUCKERING, WERNECKE.

Statics; stresses in structures, beams, columns, flexible cords, influence lines; theorem of Least Work; theorem of Three Moments; combined stresses; centroids and Second Moments.

**132. MECHANICS.** Three credits per quarter. Second quarter. Prerequisite, course 131. DUCKERING, WERNECKE.

Dynamics; translation and rotation, work, energy and power friction; torsion; inertia of rigid bodies.

**133. REINFORCED CONCRETE.** Three credits per quarter. Third quarter. Prerequisite, course 131. DUCKERING, WERNECKE.

The mechanics of reinforced concrete beams, girders, columns and retaining walls and the introduction to reinforced arch bridges.

**134. FRAME STRUCTURES.** Three credits per quarter. First quarter. Prerequisite, course 131. DUCKERING, WERNECKE.

Complete problems presenting structural engineering cranes, roof trusses, highway bridges and simple railroad spans.

**CLASSICAL LANGUAGES AND LITERATURE**

Denny Hall

**\*9. GREEK ART.** (See course in Roman Art.)

**14-15-16. ROMAN ART.** One credit per quarter. First, second and third quarters. SIDEX.

This course alternates with that in Greek Art, which will consequently not be offered until 1919-1920. A study of Roman architecture and Pompeii will occupy most of the time of two quarters, followed by sculpture, numismatics and minor arts. Illustrated by photographs and slides.

## EDUCATION

## Home Economics Hall

For description of courses in education, see bulletin of the College of Liberal Arts.

## ENGLISH

## Denny Hall

3-4. ENGLISH COMPOSITION. Three credits per quarter. First, second or third quarter. PARRINGTON, HARRISON.

## FORESTRY.

## Forestry Hall

103. WOOD ANALYSIS. Two credits per quarter. For juniors in architecture. GRÖNDAL.

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.

## LAW

## Commerce Hall

54-55-56. BUSINESS LAW. Three credits per quarter. First, second and third quarters. —

This course covers the fundamental principles of law. The more general and practical principles are developed from problems and selected cases, particularly as related to the law of contracts, property, agency, negotiable paper, insurance, partnership and corporation, with special lectures as to the statutory regulations and matters pertaining peculiarly to pharmacy.

## MATHEMATICS

## Science Hall

57-58-59. MATHEMATICS FOR ARCHITECTS. Five credits per quarter. First, second and third quarters. Prerequisite, one year algebra, one year plane geometry. GANETT.

Algebra through quadratic equations and plane trigonometry through solution of triangles.

## MECHANICAL ENGINEERING

## Engineering Hall

82. STEAM ENGINEERING. Three credits per quarter. First, second or third quarter. Not open to freshmen. EASTWOOD.

The various forms of steam apparatus used in modern power plants, considering the construction use and reason for installing such apparatus.

## MILITARY SCIENCE

## Armory

A course of two years in military training is required. All able-bodied male students except those from foreign countries, not intending to become naturalized, must take the course which by regulation of the University is required during the first and second years. Furthermore, every male undergraduate student is required to take physical exercise or athletics during each week of his attendance at the University, unless excused by his dean and the physical director.

## MODERN LANGUAGE

## Denny Hall

For description of courses in modern languages, see bulletin of the College of Liberal Arts.

## PHILOSOPHY

## Denny Hall

129. ESTHETICS. Five credits per quarter. Third quarter. Required for seniors in music. DUCASSE.

The origin and motive 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.

## PHYSICAL EDUCATION

## Gymnasium

All women students are required to take three hours of gymnasium work per week throughout the first and second years, twelve credits in physical culture being required of women for a degree, except that women in the two-year course are required to take gymnasium in the first year only.

## PHYSICS

## Denny Hall

1-2. GENERAL PHYSICS. Five credits per quarter. Two lectures, two class and one laboratory period. Laboratory deposit, \$2.50. OSBORN.

51-52. MECHANICS, SOUND AND MUSIC. Five credits per quarter. Second and third quarters. Three recitations and two laboratory periods. Laboratory deposit, \$2.50. OSBORN.

87. ACOUSTICS AND ILLUMINATION. Five credits per quarter. First quarter. OSBORN, ANDERSON.

For students in architecture.

**PSYCHOLOGY**

Science Hall

1. **GENERAL PSYCHOLOGY.** Five credits per quarter. First quarter. Four recitations, one discussion section and one laboratory period per week. Laboratory deposit, \$2.00. SMITH, WILCOX, WILTBANK.

**POLITICAL SCIENCE**

Denny Hall

For description of courses in political science, see bulletin of the College of Liberal Arts.

# College of Forestry

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## THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.  
HUGO WINKENWERDER, M. F. (Yale), Professor of Forestry, DEAN.  
BURT PERSONS KIRKLAND, A. B. (Cornell), Associate Professor of Forestry.  
ELIAS TREAT CLARK, M. F. (Yale), Assistant Professor of Forestry.  
BROR LEONARD GRONDAL, M. S. F. (Washington), Assistant Professor of Forestry.  
L. A. NELSON, Lecturer in Scalling.  
CONRAD W. ZIMMERMAN, A. B. (Washington), Lecturer in Timber Physics.

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TREVOR KINGAID, A. M. (Washington), Professor of Zoology.  
HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.  
GEORGE SAMUEL WILSON, B. S. (Nebraska), Associate Professor of Mechanical Engineering.  
GEORGE IRVING GAVETT, B. S. (C. E.), (Michigan), Assistant Professor of Mathematics.  
ABRAHAM BERGLUND, PH. D. (Columbia), Associate Professor of Economics.  
JOHN WILLIAM HOTSON, PH. D. (Harvard), Assistant Professor of Botany.  
HAROLD EUGENE CULVER, PH. M. (Wisconsin), Assistant Professor of Geology.  
DAVID CONNOLLY HALL, M. D. (Chicago), University Health Officer and Director of Physical Education for Men.  
WALTER EDWARD ROLOFF, PH. D. (Wisconsin), Assistant Professor of German.  
HORACE HARDY LESTER, PH. D. (Princeton), Instructor in Physics.  
JAMES BAKER HAMILTON (Washington), Instructor in Civil Engineering.

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## ADVISORY BOARD

J. J. DONOVAN, Bloedel-Donovan Lumber Mills, Bellingham.  
GEORGE S. LONG, Weyerhaeuser Timber Company, Tacoma.  
LEWIS SCHWAGER, Schwager-Nettleton Mills, Inc., Seattle.  
THORPE BABCOCK, Northwest Lumber Company, Hoquiam.  
JAMES O'HEARN, English Logging Company, Mount Vernon.  
STANTON G. SMITH, U. S. Forest Service, Seattle.  
LAURENCE J. COLMAN, Colman Creosoting Company, Seattle.  
W. E. CROSBY, Editor, West Coast Lumberman, Seattle.

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## PACIFIC LOGGING CONGRESS REPRESENTATIVE

R. W. VINNEDGE, North Bend Lumber Company, Edgewick.

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## PURPOSE AND LOCATION

The College of Forestry was established in 1907. It has a twofold 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 unrivaled opportunities for studying wood utilization.

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<sup>1</sup> Absent on war service.

## SPECIAL WAR WORK IN FORESTRY

In order to speed up technical work for war purposes the Faculty of the College of Forestry has made provision for the following substitutions in the courses of study. The object will be to prepare sophomores for special work in timber inspection and kiln drying and the juniors in logging engineering. The country is urgently in need of men with a technical foundation in these fields.

## FRESHMEN

Course 53, CONSTRUCTION, in place of English 1, second quarter.

Course 54, PROTECTION, in place of Geology 5, third quarter.

## SOPHOMORES

Courses 51, 52, 115, MENSURATION, required as 4-hour course for the year.

Course 101, WOOD TECHNOLOGY, in place of Chemistry 1, first quarter.

Course 104, TIMBER TESTING, in place of Chemistry 2, second quarter.

Course 158, UTILIZATION, in place of 58, second quarter.

## JUNIORS

Courses 153, GENERAL LUMBERING, and 205, 206 and 207, LOGGING ENGINEERING will be open to juniors

Courses 53 and 54 will be open to students in any of the other departments of the University, other courses only on consultation with the instructor in charge.

## \*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 (one unit algebra, one unit plane geometry).

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 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.

\* More detailed information concerning admission is furnished in a separate section of the University Bulletin, known as Entrance Information. (Pages 7-11.)

† 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.

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 .....	1/2 unit
Solid geometry .....	1/2 unit
Physics .....	1 unit
Botany .....	1/2 or 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.

#### ADVANCED STANDING

Credit will be given for subjects pursued at other colleges of recognized rank upon presentation to the Registrar of certificates that such subjects have been satisfactorily completed. Graduates of this institution and others of similar rank are admitted to graduate standing. (See Entrance Information, page 11.)

#### 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 10.)

#### SPECIAL SHORT COURSES FOR FOREST RANGERS AND LUMBERMEN

These courses will be given during 1920, providing there are sufficient number of applicants. 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 sawmills 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 wood saws, logging equipment such as wire rope, axes, hooks, blocks, special appliances for donkey engines, sawmill belts, a model of "high lead" logging 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 coöperation 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.

**FOREST PRODUCTS LABORATORIES.** A movement is now on foot for the establishment of a completely equipped forest products laboratory to cost approximately \$60,000. The laboratories for work in forest products now ready on the campus consist of four distinct units, as follows:

1. **GENERAL LABORATORY.** This is equipped with microtome, water baths, drying ovens, microscopes, chemical and pulp balances, all apparatus necessary for the technical examination of wood preservatives, standardized thermometers, cameras and other apparatus required for photomicrography, dark room, and all incidental apparatus required for the detailed study of wood tissues.

2. **WOOD PRESERVATION LABORATORY.** This consists of both an open tank and a pressure plant. The former is of commercial size for treating ties. It is composed of two treating tanks and two storage tanks, one of steel for creosote, the other a wooden tank for salt solutions and other preservatives. The pressure plant consists of a twelve-foot retort, air compressor and vacuum pumps and a duplex pressure pump, and is so constructed that it may be used for any of the different pressure processes.

3. **WOOD DISTILLATION PLANT.** This plant consists of a retort of one-half cord capacity per charge, gas tank, and refining apparatus. The retort has been installed by the U. S. Forest Service for coöperative work with the University.

4. **THE DRY KILN.** This is a plant of about one carload capacity and is thoroughly equipped with all apparatus necessary for scientific experimentation in kiln drying.

**COMMERCIAL PLANTS.** 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 very near

Seattle and are available for study. Four large creosoting plants and several smaller preservation plants are also available. As such of these industries as are not in Seattle are conveniently situated on Puget Sound, transportation costs to them are very low.

**DEMONSTRATION FOREST AND EXPERIMENT STATION.** Arrangements are now completed whereby the University will acquire title to a 60,000 acre tract of forest land to be used by the College of Forestry as a demonstration forest and forest experiment station. This tract, which consists of the Pilchuck-Sultan watersheds of the Snoqualmie forest, is very conveniently reached from Seattle and offers almost ideal conditions for a school forest. It has a total stand of timber of over a billion and a half feet, representing nearly all species of the Pacific Northwest, but more than three-fourths is composed of Douglas fir, cedar and hemlock, the most important commercial species. As there is an excellent representation of age classes it will lend itself readily to scientific forest management. It is estimated that the tract will yield 30,000,000 feet on an annually sustained yield basis.

**ASSEMBLY ROOM.** Equipped with aluminum screen and Lietz lantern for episcopic, diasopic and microscopic projection and a complete set of the maps of the world.

#### EXPENSES

(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 fee of \$6.67 per quarter, to be paid by each student of the University.

(c) **LABORATORY DEPOSITS.** Forestry 1, 5, 53, 104, 107, 108, \$1.00; Forestry 101, 102, 105, 207, \$2.00; Forestry 51, 213, 214, 222, \$3.00; Botany, \$2.00; Chemistry, \$7.00; Geology, \$1.00; Physics, \$2.50; Zoology, \$4.00.

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 deposit as is not used.

#### ASSOCIATED STUDENT FEE

The Associated Student Fee of \$5.00 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 music concert and discounts in the coöperative bookstore.

#### 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 never exceed \$10.00 for the freshman year, \$15.00 for the sophomore year, \$20.00 for the junior year, \$50.00 for the senior year, and usually are much less.

## SUMMER WORK

Students of forestry are urged to spend their summer vacation 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 1917-1918 are: President, George O'Brien; vice-president, William Durland; secretary-treasurer, Will Morgan.

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. A special College of Forestry page is also published each month 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 work the student will be awarded the degree of bachelor of science.* It should be emphasized that this arrangement will allow the student to receive practically as broad a training in four years as heretofore, but that if he desires to specialize he should pursue the work for five years.

## REQUIREMENTS FOR GRADUATION

### UNDERGRADUATE WORK

For the degree of bachelor of science (B. S.) 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 195

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 requirement does not apply to grades given before the year 1913-1914.)

#### GRADUATE WORK

For the degree of master of science in forestry (M. S. F.), 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 249 credits, of which at least 78 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 equipment and to the special advanced courses for graduate students. The physical equipment of the College of Forestry (see pages 222-224) and the exceptional advantages of its location should prove particularly attractive to graduate students. The advanced courses include dendrology, silviculture, wood technology, timber physics, wood preservation, advanced forest products, the business of lumbering, and research. Special facilities and apparatus are provided for this advanced work. 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 ELECTIVES

*For specialization in Forest Management*, the following electives are recommended: Economics 11-12, 163, Law 54-55-56, and Forestry 119, 120.

*For specialization in Logging Engineering*: C. E. 22, Law 54-55-56, Electrical Engineering 101, 102, Mechanical Engineering 82, and Forestry 205, 206, 207, 159.

*For specialization in Forest Products*: Chemistry 31, 32, 33, Botany 141, Electrical Engineering, Mechanical Engineering 82, and Forestry 222, 224, 159.

*For specialization in the Business of Lumbering*: Economics 11-12-163, 139, Journalism 107, 109, and Forestry 222, 224, 159.

JUNIOR COLLEGE

NOTE.—It will be the aim to prepare students who cannot go farther than the end of the Junior College for Forest Ranger Service. Upon approval of the dean they will be allowed to substitute certain of the subjects of the junior year for physics and chemistry.

FRESHMAN YEAR

First Quar.	Credits	Second Quar.	Credits	Thrd Quar.	Credits	Fourth Quar.	Credits
For. 1 (Dendrol.)... 5		Bot. 11 (For.)..... 5		Bot. 12 (For.)..... 5		For. 51 (Mensurat.) 6	
For. 2 (Gen. For.).. 5		C. E. 55 (Survey).. 5		C. E. 56 (Survey).. 5		C. E. 57 (Survey).. 9	
Math. 54 (Trig).... 5		Eng. 1 (Comp.).... 5		Geology 5 (For.)... 5			
Mil. Sci. .... 2		Mil. Sci. .... 2		Mil. Sci. .... 2			
Elec. M. E. 1 (Shop) 1		Elec. M. E. 2 (Shop) 1		Elec. M. E. (Shop). 1			
Required.....15+2		Required.....15+2		Required.....15+2			

SOPHOMORE YEAR

First Quarter	Credits	Second Quarter	Credits	Third Quarter	Credits
For. 52 (Mensur.)..... 2		For. 55 (First Aid)..... 2		For. 54 (Protect.)..... 3	
Chem. 1 (Gen.)..... 5		For. 53 (Construction)..... 5		Bot. 142 (Fungi)..... 5	
Phys. 92 (For.)..... 5		Phys. 93 (For.)..... 5		Econ. 1 (Intro.)..... 5	
Zool. 108 (Entom.)..... 3		Chem. 2 (Gen.)..... 5		Mil. Sci. .... 2-3	
Mil. Sci. .... 2		Mil. Sci. .... 2		Electives ..... 2-3	
Required.....15+2		Required.....17+2		Required.....15+2	

SENIOR COLLEGE

NOTE.—Beginning with the Senior College, the student should carefully study over the electives with reference to the specialty he intends to make his life work.

JUNIOR YEAR

First Quarter	Credits	Second Quarter	Credits	Third Quarter	Credits
For. 101 (Technol.)..... 5		For. 104 (Tim. Tests)..... 5		For. 108 (Silvics)..... 5	
For. 106 (Econ.)..... 2		For. 115 (Mensurat.)..... 4		Phys. Ed. (Recreation)..... 1	
For. 107 (Silvics)..... 3		Phys. Ed. (Recreation)..... 1		Electives ..... 10	
Math. 55 (Forest)..... 5		Electives ..... 5			
Phys. Ed. (Recreation).... 1					
Electives ..... 5					
Required.....15+1		Required.....15+1		Required.....15+1	

*no such course*

Suggested Electives

Chem. 31 (Organic)..... 5	Chem. 32 (Organic)..... 5	Chem. 38 (Organic)..... 5
Econ. .... 3	Bot. 141 (Fungi)..... 5	M. E. 82 (Steam Eng.).... 3
C. E. 22 (Log. R. R.)..... 5	Econ. 168 (Account.).... 3	Econ. 189 (Salesman).... 3
Bot. 140 (Fungi)..... 3	Law 55 ..... 3	Econ. 81 (Account)..... 3
Law 54 (Bus. Law)..... 3		

SENIOR YEAR

For. 151 (Manage.)..... 5	For. 152 (Manage.)..... 3	For. 105 (Preserv.)..... 5
For. 153 (Gen. Lumber).... 5	For. 158 (Utiliz.)..... 5	Electives ..... 10
Electives ..... 5	Electives ..... 7	
Required.....15	Required .....15	Required.....15

Suggested Electives

For. 119 (For. Adm.).... 3	For. 120 (Nat. For. Adm.) 3	Jour. 109 (Adver.)..... 3
For. 159 (Sci. Manage.).... 2	H. E. 150 (Food Prob.)... 3	
Jour. 107 (Gen. Adver.)... 3	Jour. 108 (Adver.)..... 3	

GRADUATE YEAR

NOTE.—The following subjects are primarily for graduate students. Seniors will be allowed to elect them only upon recommendation of the dean and the instructor concerned. With the exception of the thesis none of the subjects are, strictly speaking, required, but the student will elect all those belonging to one specialty as determined upon consultation with his class advisor. A sufficient number will have to be taken to fulfill the requirements for the masters degree.

For. 202 (Thesis)..... 3	For. 202 (Thesis)..... 3	For. 202 (Thesis)..... 3
For. 201 (Adv. Dend.).... 3	For. 206 (Log. Eng.)..... 5	For. 222 (Adv. Prod.).... 5
For. 205 (Log. Eng.)..... 5	For. 209 (Seminar)..... 2	For. 207 (Log. Eng.).... 15
For. 208 (Seminar)..... 2	For. 224 (Milling)..... 3	For. 228 (Adv. Manage.)... 8

## DEPARTMENT OF INSTRUCTION

## FORESTRY

## Forestry Hall

PROFESSOR WINKENWERDER, ASSOCIATE PROFESSOR KIRKLAND, ASSISTANT  
PROFESSORS CLARK, GRONDAL, MR. NELSON, MR. ZIMMERMAN

## COURSES

1. **ELEMENTARY DENDROLOGY.** Five credits per quarter. First or third quarter. Prerequisite, high school botany. Required of freshmen. Two recitations, four laboratory periods per week, field trips additional. Laboratory deposit, \$1.00.

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 the Trees of Oregon and Washington*. WINKENWERDER, GRÖNDAL.

2-3. **GENERAL FORESTRY.** Five credits first credits, two credits third quarter. Required of freshmen. Five lecture or recitation periods per week.

A course intended to familiarize the student with the general nature of the field work he is about to enter. WINKENWERDER.

5. **WOODCRAFT.** Two credits per quarter. Required of freshmen. Two lectures per week. Demonstrations and practice work additional. Laboratory deposit, \$1.00.

Food lists, camp cooking, woods clothing, camp equipment, camp sanitation, packing a horse, general woodcraft. A special section in this course will be arranged for students not regularly enrolled in forestry, providing at least six students apply for the course. CLARK.

51. **FOREST MENSURATION.** Six credits per quarter. Fourth quarter. Required of freshmen. This course will be given in the field at the college demonstration forest, and will consist principally of field work. Laboratory deposit, \$3.00.

Principles and uses of hypsometers, timber measures and log rules; collection of data for the construction of volume tables; computation of volumes of logs, trees and stands; practice in log scaling, timber estimating, topographical mapping; the growth of trees in diameter, height and volume; sample plot methods; construction and use of growth and yield tables. Texts: Grave's *Forest Mensuration*; Winkenwerder & Clark's *Exercises in Forest Mensuration*. WINKENWERDER, CLARK.

52. **FOREST MENSURATION.** Two credits per quarter. Prerequisite, course 51. Required of sophomores. Lectures and office computation supplementing field work of course 51. CLARK.

X 53. **CONSTRUCTION.** (War Course.) Five credits per quarter. Second quarter. Required of sophomores. Three lectures or recitations and two three-hour laboratory periods per week. Laboratory deposit, \$1.00.

Principles and methods of trails, highways, logging railroads, telephone lines, simple wooden bridges, ranger cabins, barns and fences; clearings from the standpoint of the United States Forest Service improvement work, and logging construction work. CLARK.

\*54. FOREST PROTECTION. Three credits per quarter. Third quarter. Required of sophomores. Three lectures or recitations and occasional field trips. (During the war 2 hours, second quarter.)

Economic importance of the question. History of forest fires and fire protection. Factors that influence forest fires. Methods of prevention and control. Education, patrol, permanent system of fire control. Organization and management of crews. Tool caches, trail and telephone facilities, lookout stations, the heliograph and the Osborne fire finder. WINKENWERDER.

\*55. FIRST AID. Second quarter.

Lectures and demonstrations. Instructor to be assigned.

101. WOOD TECHNOLOGY. Five credits per quarter. First quarter. Prerequisite; college botany, 8 hours. Required of juniors. Three lectures and two three-hour laboratory periods per week. Laboratory deposit, \$2.00.

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*. GRÖNDAL.

102. WOOD IDENTIFICATION. Two credits per quarter. First quarter. Prerequisite; college botany, 8 hours. Two three-hour laboratory periods per week. Laboratory deposit, \$2.00.

Open to students in other departments of the University who upon consultation can show ability to carry the work. This course includes only the laboratory work of course 101. Text: Record's *Economic Woods*. GRÖNDAL.

\*103. WOOD ANALYSIS. Two credits per quarter. For juniors in architecture. Two lectures and occasional demonstrations.

A study of the identification, physical properties and characteristics of woods used in building construction and finishing. The finishing and preserving of woods will be discussed. GRÖNDAL.

104. TIMBER TESTING. Five credits per quarter. Second quarter. Prerequisite, Math. 55-56. Required of juniors. Three lectures or recitations and two three-hour laboratory periods per week. Laboratory deposit, \$1.00.

Various stresses which wood must resist; methods of making tests; theory of flexure; relation between moisture and strength; mechanical properties of wood. ZIMMERMAN.

105. WOOD PRESERVATION. Five credits per quarter. Third quarter. Prerequisites, course 101 and one year of chemistry. Required to seniors and graduates. Laboratory deposit, \$2.00.

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. GRÖNDAL.

106. FOREST ECONOMICS. Two credits per quarter. First quarter. Prerequisite, Economics 51. Required of juniors. Two lectures or recitations per week.

The forests of the United States compared with those of other countries of the world 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 problems; how to determine the best use of land. Open to students in other departments. KIRKLAND.

\* 107-108. SILVICULTURE. Three credits first quarter; five credits third quarter. First and third quarters. Prerequisite, course 1. Required of juniors. Lectures and field practice. Laboratory deposit, \$1.00.

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: *Grave's Principles of Handling Woodlands*. KIRKLAND.

\* 109. GENERAL FORESTRY. Two credits per quarter. First quarter. 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. Two lectures and occasional field trips.

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. WINKENWERDER.

\* 110. CHARACTERISTICS OF TREES. Two credits per quarter. Third quarter. 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. Two lectures and occasional field trips.

The identification, distribution, life-habits and uses of the trees of the Pacific Northwest. WINKENWERDER.

\* 111. TEACHER'S COURSE. One credit per quarter. First, second or third quarter. Offered only as a correspondence course. Must be accompanied or preceded by course 109. WINKENWERDER.

\* 112. PROPERTIES AND USES OF WOODS. First, second or third quarter. Offered only as a correspondence course.

The physical and mechanical properties of woods; identification of woods, and the proper uses of woods; wood preservation. GRÖNDAL.

115. ADVANCED FOREST MENSURATION. Four credits per quarter. Second quarter. Prerequisites, courses 51 and 52. Four recitations per week. Advanced studies in growth and yield. WINKENWERDER.

\* 119. GENERAL FOREST ADMINISTRATION. Three credits per quarter. First quarter. Prerequisite, course 106. Lectures and assigned readings.

Objects of forest administration. Principles and methods of administering private or public forests to attain the objects of management in each case. KIRKLAND.

\*120. NATIONAL FOREST ADMINISTRATION. Three credits per quarter. Second quarter. Lectures and demonstrations.

National Forest regulations and instructions governing 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. KIRKLAND.

151-152. FOREST MANAGEMENT. Five credits first quarter; three credits second quarter. First and second quarters. Prerequisites, courses 51, 52, 107-108. Required of students in senior or graduate year. Five lectures or recitations first quarter; three, second quarter.

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; 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*; Recknagel, *Working Plans*. KIRKLAND.

\*153. GENERAL LUMBERING. Five credits per quarter. First quarter. Prerequisites, courses 51 and 52. Required of seniors and graduates.

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*. CLARK.

158. FOREST UTILIZATION. Five credits per quarter. Second quarter. Prerequisite, course 101 and one year in chemistry. Required of seniors and graduates. Four lectures, one afternoon laboratory per week.

Paper making, wood distillation, tanbark, naval stores and other secondary forest products. Lumber and its economic uses in the construction of buildings, wood pipes, silos, veneers, wood blocks, shingles, cooperage, and similar products; trade customs; substitutes. GRÖNDAL.

\*159. SCIENTIFIC MANAGEMENT. Two credits per quarter. First quarter. Two lectures and occasional demonstrations at the mills. Given only in alternate years. Not in 1918-1919.

Fundamental principles of scientific management, with special reference to the lumber industry. KIRKLAND.

\* 160. **CAMP SANITATION.** One credit per quarter. Second quarter. A course of twelve to fifteen lectures. Offered primarily for students in commerce, specializing in employment management. CLARK.

\* 201. **ADVANCED DENDROLOGY.** Three credits per quarter. First quarter. Prerequisite, course 1. Three recitations. Elective. Given only in alternate years. Not in 1918-1919.

An extension of course 1 covering the identification and distribution of all important commercial tree species of the United States. Text: *Sargent's Manual of the Trees of North America.* WINKENWERDER.

205-206-207. **LOGGING ENGINEERING.** Five credits first and second quarters; fifteen credits third quarter. First, second and third quarters. Prerequisites, courses 51, 52, 53, 153. Primarily for graduates. Laboratory deposit for 207, \$2.00.

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 third quarter the work is transferred to the field, where extensive work in logging engineering is carried on. CLARK.

\* 208-209. **SEMINAR.** Two credits per quarter. First and second quarters. Prerequisite, senior or graduate standing.

Reviews, assigned readings, reports, and discussions on current periodical literature and the more recent Forest Service publications. WINKENWERDER, KIRKLAND, GRÖNDAL.

\* 213-214. **RESEARCH.** Two credits per quarter. First, second or third quarter. Prerequisite, senior or graduate standing. Laboratory deposit, \$3.00.

Instructor to be assigned according to nature of research.

\* 221. **FOREST HISTORY AND POLICY.** Two credits per quarter. Prerequisite, course 107-108. Lectures and recitations.

Forest policy of the United States. Forestry in the states and our island possessions; the rise of forestry abroad. Text: Fernow, *History of Forestry.* KIRKLAND.

\* 222. **ADVANCED FOREST PRODUCTS.** Five credits per quarter. Third quarter. Prerequisite, course 101-158. A laboratory course. Laboratory deposit, \$3.00.

Advanced studies in wood technology and utilization. Special problems with reference to the needs of the individual student. GRÖNDAL.

\* 223. **ADVANCED FOREST MANAGEMENT.** Eight credits per quarter. Third quarter. Prerequisite, courses 151, 152.

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. KIRKLAND.

224. **MILLING.** Three credits per quarter. Second quarter. Primarily for graduates. Lectures and field demonstrations.

The sawmill; yard arrangements; practical operation. GRÖNDAL.

226. **MILLING.** Eight credits per quarter. Third quarter. Primarily for graduates. Lectures, supplemented with practical work at local sawmills.

Design of sawmills. Machinery used in milling. Methods of handling lumber. Kiln drying. Planing mills. GRÖNDAL.

NOTE.—During the period of the war, electives in the College of Forestry will not be given unless at least five students apply for a course.

## SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER COLLEGES OF THE UNIVERSITY

### BOTANY

Science Hall

11-12. **FORESTERS' BOTANY.** Five credits per quarter. Second and third quarters. For forestry students. Prerequisite, Botany 1. Laboratory deposit, \$2.00. HOTSON, Assistants.

A study of types of plants to illustrate the advance in complexity.

140, 141, 142. **GENERAL FUNGI.** Five credits per quarter. First, second and third quarters. Prerequisite, course 11 or 105, junior standing. Laboratory deposit, \$2.00. HOTSON.

Morphology and classification of fungi; designed as a basis for plant pathology.

143, 144, 145. **PLANT PHYSIOLOGY.** Five credits per quarter. First, second and third quarters. Prerequisite, two quarters of botany, Chemistry 21, junior standing. RIGG.

### CHEMISTRY

Bagley Hall

1, 2, 3. **GENERAL CHEMISTRY.** Five credits per quarter. First, second or third quarter. Three lectures and two laboratory periods per week. LANGDON.

The first two quarters are devoted to general chemistry and the chemistry of non-metals; the third quarter to the chemistry of metals. Laboratory work of the third quarter is qualitative analysis.

31, 32, 33. **ORGANIC CHEMISTRY.** Five credits per quarter. First, second or third quarter. Three lectures and two laboratory periods per week. Prerequisite, course 3, or its equivalent. DEHN.

A course covering the fundamentals of organic chemistry as thoroughly as the time limit permits.

## CIVIL ENGINEERING

## Engineering Hall

22. RAILROADS. Five credits per quarter. First quarter. Prerequisite, course 21. Laboratory deposit, \$3.00. HAYDEN.

Elementary railroading engineering, including curves, earth work, costs, estimates and location of light traffic lines such as logging railways.

55-56. FOREST SURVEYING. Five credits per quarter. Sophomore and junior foresters. Prerequisite, course 3, Math. 51. Laboratory deposit, \$3.00. HAMILTON.

Engineering lettering and map drawing. Chain, compass, transit and level surveying, with reference to work in forest. U. S. subdivision of public lands.

## ECONOMICS

## Commerce Hall

1. GENERAL ECONOMICS. Five credits per quarter. First and third quarters. Prerequisite, sophomore standing.

11-12. INTRODUCTORY ACCOUNTING. Three credits per quarter. Second and third quarters.

163. ADVANCED ACCOUNTING. Three credits per quarter. First and second quarters. Prerequisite, course 11-12.

189. SALESMANSHIP. Three credits per quarter. Third quarter. Prerequisite, junior standing.

## ENGLISH

## Denny Hall

1. COMPOSITION. Five credits per quarter. First, second or third quarter.

## GEOLOGY

## Science Hall

5. ENGINEERING GEOLOGY. Five credits per quarter. Three class and laboratory periods per week. Laboratory deposit, \$1.00. CULVER. A survey of the field of general geology. Occasional field trips.

## HOME ECONOMICS

## Home Economics Hall

150. FOODS—PROBLEMS IN FEEDING NAVAL, MILITARY AND INDUSTRIAL GROUPS. Three credits per quarter. Laboratory deposit, \$4.00. CLARKE.

## JOURNALISM

## Commerce Hall

107-108-109. GENERAL ADVERTISING. Three credits per quarter. First, second and third quarters. Laboratory deposit, \$2.00 for courses 108-109. RUSSELL.

History, purpose and place of advertising in the business world; psychological factors; principles of copy construction; advertising display. The second quarter's work deals with the problems of the small advertiser; local media and conditions; current campaigns; characteristics of various types of small advertisers; practice in preparation of simple copy. The third quarter takes up study of the problems of the large advertiser, the advertising agency, the advertising manager.

## LAW

### Commerce Hall

54-55-56. **BUSINESS LAW.** Three credits per quarter. First, second and third quarters. —

This course covers the fundamental principles of law. The more general and practical principles are developed from problems and selected cases, particularly as related to the law of contracts, property, agency, negotiable paper, insurance, partnership and corporation.

## MATHEMATICS

### Science Hall

54. **MATHEMATICS FOR FORESTERS.** Five credits per quarter. Prerequisite, one and one-half years algebra, one year plane geometry. **GAVETT.**

A study of advanced numerical and graphical methods, and solution of plane triangles by trigonometrical methods.

## MECHANICAL ENGINEERING

### Engineering Hall

1, 2. **WOODWORK.** One credit per quarter. Bench work; cabinet work; pattern making. **BEATTIE.**

82. **STEAM ENGINEERING.** Three credits per quarter. Not open to freshman. **EASTWOOD.**

The various forms of steam apparatus used in modern power plants, considering the construction, use and reason for installing such apparatus.

## MILITARY SCIENCE

### Armory

A course of two years in military training is required. All able-bodied male students except those from foreign countries not intending to become naturalized must take the course which by regulation of the University is required during the first and second years. Furthermore, every male undergraduate student is required to take physical exercise or athletics during each week of his attendance at the University, unless excused by his dean and the physical director.

## MODERN LANGUAGE

Denny Hall

For description of courses in modern languages, see bulletin of the College of Liberal Arts.

## PHYSICS

Denny Hall

92-93. GENERAL PHYSICS. Five credits per quarter. For 1918-1919 this course will be combined with course 1-2 for forestry students. Prerequisite, high school physics. OSBORN.

## ZOOLOGY

Science Hall

103. FOREST ENTOMOLOGY. Three credits per quarter. First quarter. KINCAID.

The classification and economic relations of insects injurious to the forests. For students in forestry, but open to others.

# School of Law

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## THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia, LL. D. (California), 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.  
LESLIE JAMES AYER, B. S., J. D. (Chicago), Professor of Law.  
FRED WAYNE CATLETT, A. M., LL. B. (Harvard), Assistant Professor of Law.  
JOSEPH GRATTAN O'BRYAN, A. B. (Jesuit College), Lecturer on Law.

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## ORGANIZATION AND EQUIPMENT

### GENERAL STATEMENT

The Law School of the University of Washington was established in 1899. The case system is generally used and is designed to give an effective knowledge of legal principles and to develop the power of independent legal reasoning. A thorough legal training is offered to students of maturity and with previous preliminary education, and the courses offered are adapted to train and fit the student for practice in any state or jurisdiction. Special attention and emphasis is given to the law of the State of Washington, and in the illustrations and development of legal principles, cases and statutes are largely cited from the State of Washington and other Northwestern and Pacific states.

### THE LAW BUILDING

The Law School occupies the entire upper floor of the new Commerce building. This building, which is one of the largest of the University buildings and is in the center of the campus, in the Liberal Arts Quadrangle, represents the best in modern construction and equipment. The law library occupies the entire end, and an idea of its roominess may be gained from its dimensions, which are, exclusive of stacks, forty by seventy feet. In addition to this general reading room, there is a large consultation room, twenty-five feet square, adjoining. There are three large lecture or recitation rooms, and a large room fitted and used exclusively for the trial court. These are all readily accessible to each other, and every convenience and improvement tending to add to the efficiency of the student, from an equipment standpoint, is present.

### THE LIBRARIES

The University Law Library consists of about 20,000 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.

The library is catalogued and indexed by the Library of Congress cards.

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\* Absent on leave, 1918-1919.

The University General Library contains 82,401 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.

### GENERAL INFORMATION

The four quarter system is adopted in the Law School. Each quarter is approximately for twelve weeks, and credit for work is usually on the basis of one credit representing a recitation or lecture course one hour per week for one quarter. In adopting this system the total hour values of courses prevailing in the schools of the Association of American Law Schools have been retained — *e. g.*, courses formerly given two hours per week per semester are under the quarter system given three hours per week per quarter. This makes possible a better sequence of courses in the first year and permits students to enter, even the beginning students, at the opening of any quarter, except students beginning the study of law cannot enter advantageously at the opening of the third or spring quarter.

### FEEs, EXPENSES, ETC.

A fee of ten dollars (\$10.00) 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 fifteen dollars (\$15.00) per quarter is charged in the Law School, payable at the beginning of each quarter.

A diploma fee of five dollars (\$5.00) is charged all students to whom diplomas are issued.

Expenses are very reasonable. Seattle, because of its location, makes possible a relatively low cost of living. A special bulletin is issued by the University, which gives the information in detail and may be obtained upon application.

### SELF-HELP FOR STUDENTS

The needs of a large city and particularly the demand for labor created by war conditions afford ample opportunity to the student for employment. The law courses are offered almost entirely in the forenoons, leaving the afternoons or evenings for employment. The University also offers employment for a smaller number of students. Many students earn a portion of their expenses while in the University, and a number earn their entire way. An employment bureau makes systematic efforts to obtain positions for students desiring work.

### ADMISSION TO THE BAR

The Law School of the University of Washington is by law made the standard of approved law schools for the purpose of admission to the bar of this state. Graduates of the Law School of the University of Washington are, in the discretion of the State Board of Law Examiners, admitted without examination. Students intending to practice in the State of Washington and desiring to take advantage of the foregoing should consult the dean of the Law School upon entering the Law School, and register in accordance with the rules of the State Board of Law Examiners.

## \*ADMISSION TO THE LAW SCHOOL

To be admitted to regular standing in the Law School students must present acceptable credits or pass examination entitling them to admission to this University and in addition thereto present a junior certificate from the College of Liberal Arts or the College of Science of this University, or present acceptable credits or pass examinations equivalent to the junior certificates.

### 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 the Law 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 page 39) 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 requirements for the degrees of bachelor of arts and bachelor

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\* More detailed information concerning admission is furnished on pages 37-41.

of laws 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 135 or more credits, including all the required work, 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 144, and earn in the Law School at least 36 credits in the first year law work, to apply on his bachelor of arts degree, thus making his 180 credits required for the degree of bachelor of arts. The degree of bachelor of arts 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 144 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 45 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 the Law School), offers an annual prize of \$25.00 for the best thesis submitted by members of the senior class, candidates for the degree of bachelor of laws, upon a subject of Washington law, or upon a subject of peculiar interest to Washington lawyers, the subject to be selected by the dean of the Law School.

### THE JAGGARD PRIZE

Miss Anne Wright Jaggard, daughter of the late Edwin Ames Jaggard, LL. D., Justice of the Supreme Court of Minnesota, offers an annual prize of \$50.00 for the best thesis submitted by members of the senior class,

candidates for the degree of bachelor of laws, upon a subject in the courses of History of the Law or Jurisprudence.

### SUMMER SESSION OF THE LAW SCHOOL

Courses are offered each summer by the Law School for both beginning and advanced students. Different courses are offered successive summers. This work counts toward a degree as a part of the regular instruction of the Law School. By increasing the number of periods per week, the equivalent of a quarter's work in the regular session is completed in each of the offered courses.

### 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.

### 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 Law School for three school years, successfully complete all the required law work provided in the Law School and in addition such electives as will with the required work aggregate (29 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 toward 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 quarter the members of each class are subject to written examination 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*.

## DEPARTMENT OF INSTRUCTION

## LAW

Commerce Hall

PROFESSORS CONDON, LANTZ, GOODNER, BISSETT, MR. O'BRYAN

## COURSES

## FIRST YEAR

All first year courses required

100-101. AGENCY. Three credits per quarter. Second and third quarters. Wambaugh's Cases. BISSETT.

103-104-105. CONTRACTS. Four, two and three credits respectively for first, second and third quarters. Williston's Cases. LANTZ.

106-107. CRIMINAL LAW AND PROCEDURE. Three credits per quarter. Second and third quarters. Mikell's Cases, supplemented by Washington Criminal Code and Cases. O'BRYAN.

108-109. PLEADING. Two and four credits respectively for second and third quarters. Sunderland's Cases. GOODNER.

111. PROCEDURE I. Three credits. First quarter. Lectures on Legal Bibliography followed by study of system of legal classification employed in leading digests, etc., used by lawyers, and a series of selected practical problems in finding and keeping a record of the law. CONDON.

112-113. PROCEDURE II. One and two credits respectively for second and third quarters. This course is a laboratory study in aid of the course in pleading. GOODNER.

115-116. PROPERTY I. Four and two credits respectively for first and second quarters. Warren's Cases, Volumes I and II. BISSETT.

117-118. TORTS. Four and two credits respectively for first and second quarters. Ames' and Smith's Cases. —

## SECOND YEAR

125-126. EQUITY. Four and two credits respectively for first and second quarters. Ames' Cases in Equity Jurisdiction, Volumes I and II. GOODNER.

129-130-131. EVIDENCE. Three credits per quarter. First, second and third quarters. Wigmore's Cases. CONDON.

133. INSURANCE. Three credits. Third quarter. Vance's Cases. LANTZ.

137. NEGOTIABLE INSTRUMENTS. Three credits. First quarter. Huffcut's Cases. LANTZ.

139-140. PROPERTY II. Four and two credits respectively for first and second quarters. Gray's Cases, Volumes III and V. BISSETT.

142-143. PUBLIC UTILITIES. Four and two credits respectively for second and third quarters. Green's Cases on Carriers and Wyman's Cases on Public Service Companies. LANTZ.

146-147. SALES. Three credits each quarter for second and third quarters. Woodward's Cases. —

151. WILLS. Three credits. Third quarter. Warren's Cases. GOODNER.

NOTE.—Courses in Damages, Irrigation Law, Mining Law, Persons, Quasi-Contracts, and Statute Law heretofore offered will not be offered until further notice, except upon petition of students for same and subject to action of the law faculty. Such courses will be in substitution of the foregoing.

## THIRD YEAR

161. PROCEDURE IV. Three credits. First quarter. This course relates to procedure in civil actions in the Superior Court and is prerequisite to Procedure V. GOODNER.

162. PROCEDURE V. Three credits. Second quarter. A continuation of Procedure IV with jury in attendance. Course also includes the taking of appeals to the Supreme Court and practice in the extraordinary legal remedies of habeas corpus, mandamus, quo warranto, and prohibition. Procedure IV is a prerequisite. GOODNER.

163. PROCEDURE VI. Three credits. Third quarter. A course in probate proceedings, covering administration of estates, probate of wills, appointment of guardians, etc. GOODNER.

165. ADMIRALTY. Four credits. First quarter. Ames' Cases. LANTZ.

168-169. CONFLICT OF LAWS. Four and two credits respectively for second and third quarters. Lorenzen's Cases. LANTZ.

170-171. CONSTITUTIONAL LAW. Two and four credits respectively for second and third quarters. Hall's Cases. BISSETT.

187-188. PRIVATE CORPORATIONS. Four and two credits respectively for first and second quarters. Canfield and Wormser's Cases. BISSETT.

191. PROPERTY: COMMUNITY. Five credits. Third quarter. Washington Statutes and selected cases on community property. BISSETT.

195-196. TRUSTS. Three credits each quarter for first and second quarters. Case book to be selected. GOODNER.

NOTE.—Courses in Bankruptcy, History of the Law, Jurisprudence, Mortgages, Municipal Corporations, Office Practice, Partnership, Property III and Suretyship heretofore offered will not be offered until further notice, except upon petition of the students, and then in substitution of the foregoing courses and subject to action of the law faculty.

Fifteen hours or credits in each quarter of the first year and fourteen hours or credits in each quarter of the second and third years are required, making a minimum total of 129 hours or credits for completion of the law course.

First-year students are limited to fifteen hours per quarter and second- and third-year students to fourteen hours per quarter, except upon special permission of the law faculty.

### COURSES OFFERED STUDENTS IN OTHER COLLEGES AND SCHOOLS

(This course not counted toward the degree of LL. B.)

54-55-56. BUSINESS LAW. Three credits per quarter. First, second and third quarters. Bay's Cases on Commercial Law. —

### 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.

# College of Mines

## THE FACULTY

HENRY SUZZALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.  
MILNOR ROBERTS, A. B. (Stanford), Professor of Mining Engineering and Metallurgy; DEAN.  
JOSEPH DANIELS, S. B. (Massachusetts Institute of Technology), M. S. (Lehigh), Associate Professor of Mining Engineering and Metallurgy.  
CLARENCE RAYMOND COREY, E. M. (Montana State School of Mines), A. M. (Columbia), Assistant Professor of Mining Engineering and Metallurgy.  
\_\_\_\_\_, Instructor in Ceramics.  
HARVEY L. GLENN, B. S. (Iowa State College), Lecturer on Assaying of Bullion.  
GUY M. KERR, PH. D. (Goettingen), Lecturer on Copper Smelting.  
FREDERICK POWELL, E. M. (Columbia), Lecturer on Gold Dredging.  
K. H. CHISHOLM, Foreman in charge of Mines Rescue Training, U. S. Bureau of Mines, Northwest Station.  
BYRON M. BIRD, Assistant in Metallurgy.  
JOHN H. THOMPSON, Assistant in Mining.  
ALBERT E. SLACK, Assistant in Stock Room.  
RAY HOLBROOK, Mechanic in charge of Equipment.

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. (Nebraska), PH. N. D. (Strassburg), Professor of Mathematics.  
CARL EDWARD MAGNUSSON, E. E. (Minnesota), PH. D. (Wisconsin), Professor of Electrical Engineering.  
EVERETT OWEN EASTWOOD, C. E., A. M. (Virginia), S. B. (Massachusetts Institute of Technology), Professor of Mechanical Engineering.  
DAVID CONNOLLY HALL, SO. M., M. D. (Chicago), Director of Physical Education for Men.  
CHARLES CHURCH MORE, M. S., C. E. (Lafayette), M. C. E. (Cornell), Professor of Civil Engineering.  
HENRY KRETZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.  
WILLIAM FRANKLIN ALLISON, C. E. (Cornell), Professor of Municipal and Highway Engineering.  
WILLIAM TAYLOR PATTEN, Captain U. S. A., Retired, Professor of Military Science and Tactics.  
LOREN DOUGLAS MILLIMAN, A. B. (Michigan), Associate Professor of English.  
CHARLES WILLIAM HARRIS, C. E. (Cornell), Associate Professor of Civil Engineering.  
VANDEVEREER CUSTIS, PH. D. (Harvard), Associate Professor of Economics.  
GEORGE SAMUEL WILSON, B. S. (Nebraska), Associate Professor of Mechanical Engineering.  
EDGAR ALLEN LOEW, B. S., E. E. (Wisconsin), Associate Professor of Electrical Engineering.  
HENRY LOUIS BRAKEL, PH. D. (Cornell), Assistant Professor of Physics.  
GEORGE IRVING GAVETT, B. S., C. E. (Michigan), Assistant Professor of Mathematics.  
CHARLES EDWIN WEAVER, PH. D. (California), Assistant Professor of Geology.  
ALLEN FULLER CARPENTER, PH. D. (Chicago), Assistant Professor of Mathematics.  
JOHN WILLIAM MILLER, B. S., C. E. (Nebraska), Assistant Professor of Civil Engineering.

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1918-1919.

<sup>3</sup> Absent on leave, second and third quarter, 1918.

- HAROLD EUGENE CULVER, Ph. M. (Wisconsin), Assistant Professor of Geology.**  
**FRANK MELVILLE WARNER, B. S. (M. E.), (Wisconsin), Assistant Professor of Engineering Drawing.**  
**FRED HARVEY HEATH, Ph. D. (Yale), Assistant Professor of Chemistry.**  
**SETH CHAPIN LANGDON, Ph. D. (Washington), Instructor in Chemistry.**  
**CHAUNCEY WERNECKE, B. S. (C. E.) (Washington), Instructor in Civil Engineering.**  
**SAMUEL THOMAS BEATTIE, Instructor in Woodwork.**  
**SANDY MORROW KANE, Instructor in Metal Work.**

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**ADVISORY BOARD COLLEGE OF MINES****UNIVERSITY OF WASHINGTON**

- ROY H. CLARKE, mining engineer, Peyton Building, Spokane.**  
**JOHN ERIKSON, mine operator, Erikson Building, Seattle.**  
**J. T. HEFFERNAN, president of the Heffernan Engine Works, mine operator, 108 Railroad Avenue South, Seattle.**  
**E. C. HUGHES, of Hughes, McMicken, Dovel & Ramsey, attorneys, mining lawyer, Colman Building, Seattle.**  
**CHARLES HUSSEY, general manager of estate of John A. Finch, mine operator, Empire State Building, Spokane.**  
**W. R. RUST, founder of the Tacoma Smelter, president of Tacoma Exploration Company, Box 1454, Tacoma.**  
**NATHANIEL D. MOORE, general manager of the Pacific Coast Coal Co., Seattle.**

**\*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 (1 unit of algebra, 1 unit of plane geometry).
- 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 counted).
  - (b) Modern foreign language (at least 2 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, physical geography, geology, physiology. (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 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

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, B. S. (Min. E.); curriculum II, bachelor of science in geology and mining, B. S. (Geol. and Min.); curriculum III, bachelor of science in metallurgical engineering, B. S. (Met. E.); curriculum IV, bachelor of science in coal mining engineering, B. S. (Coal Mine E.) A new group of electro-metallurgical subjects is offered in curriculum V.

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

\* More detailed information concerning admission is furnished on pages 37-41.

† 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.

receive the degree of metallurgical engineer (Met. E.) under similar conditions.

### MINING AND METALLURGICAL RESEARCH

The purpose of the department is to stimulate and encourage development in the mining and metallurgical industry of Washington, the Pacific Northwest and Alaska by research in the special problems presented, and to solve the problems through the efforts of fellowship holders and others studying in the department.

Graduates from suitable technical courses at institutions of recognized standing, or men who present evidence of technical training which has fitted them to undertake investigations, are eligible to enroll in mining and metallurgical research. The degree of master of science may be granted to those students who, holding a suitable bachelor of science degree, complete investigative work in compliance with the University requirements for the master's degree. Although as much latitude as possible will be allowed in the choice of subjects for research, the general topics will be those which are of special importance to this region.

### RESEARCH FELLOWSHIPS

In connection with the department, five research fellowships of \$720 annual value have been established. These fellowships are open to qualified graduates of scientific or technical courses in institutions of recognized standing. Applicants should send a copy of their record from the registrar's office of the college where they have been, or will be, graduated, and the names and addresses of at least three references who know their character, training, and ability. Applications for these fellowships are due not later than May 15th, and should be addressed to the Dean, College of Mines, Seattle, Washington.

Appointees to the fellowships report for duty on July 1, and are required to be on duty during the entire year, except that in case of reappointment for a second year, the fellowship holder is given a vacation from June 15 to July 1.

Fellowship holders are required to register as graduate students in the University of Washington and to become candidates for the degree of master of science in mining engineering, or metallurgy, unless an equivalent degree has been previously earned.

### INVESTIGATIONS OF PROBLEMS

The University will, under certain conditions, permit mining and metallurgical companies who have special problems for solution, to detail a representative to work on such problems, or to meet the expense of engaging a man to do so. Experiments which can be carried on as readily in commercial laboratories and which do not require direction from the Bureau's experts are not undertaken. The research work shall be under the direction of the department, and complete records of all the data obtained in the investigation of the problems shall be filed with the department, which shall have the right to publish this information for the benefit of the mining and metallurgical industry.

## MINING AND METALLURGICAL EXPERIMENT STATION UNITED STATES BUREAU OF MINES

The United States Bureau of Mines maintains a mining and metallurgical experiment station for the Pacific Northwest and the coast regions of Alaska at the College of Mines. The headquarters of the station, from which all operations in this territory are directed, are in the Bureau of Mines building, between Mines and Bagley halls. An analytical laboratory is in the same building, while the electric furnaces and other equipment used by the Bureau in cooperation with the College are housed in the Mines building. At present the principal investigations being conducted by the station are in electro-metallurgy, and in the mining, treatment and uses of coal. Members of the experiment station staff give occasional lectures to the students of the University on subjects dealing with their special lines of work.

### UNITED STATES MINES RESCUE TRAINING STATION

The United States Mines 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 applicant is taught the construction of the apparatus and is required to wear it for four hours each day, in two periods of two hours each. The practice is carried on in a room filled with gas which cannot be breathed without immediate danger, and the work to be performed is the same as that which would be required in actual mining operations or rescue work. The smokeroom represents a portion of a mine, and is equipped with mine car, track, overcast, timbers and brick. First-aid instruction is also given. Applicants who have completed the course of training receive a certificate from the U. S. Bureau of Mines.

A one-ton, forty-five horse-power automobile truck, equipped with rescue apparatus ready for any emergency calls, forms part of the equipment of the rescue station.

### INSTRUCTION FOR COAL MINING MEN

Miners taking the rescue training also receive instruction 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.

## 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. 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. More than 40 eastern firms dealing in mining equipment make their Seattle branches the distributing center for the Pacific Northwest, British Columbia and Alaska. 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 partial list of the other available works of interest includes coal mines and coke ovens, 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 smelters and refineries; the U. S. assay office; the West Seattle steel plant of the Pacific Coast Steel Co., and several plants engaged in electro-metallurgical work.

## MINING AND METALLURGICAL LABORATORIES

The laboratories of the College of Mines are housed in a two-story building of pressed brick. The main portion of the structure, measuring 50 by 60 feet, contains the offices, library, classrooms, drafting room and museum, as well as laboratories, desks, stockroom and balance room for assaying and general metallurgy. The rear wing, 40 by 66 feet, with tower, is occupied by mining and milling machinery, electric furnaces, and stocks of ore, coals and clays. An addition contains a steel locker room, shower-bath room and a metallographic laboratory.

The metallurgical equipment includes standard size furnaces fired by six methods — coal, coke, gasoline, gas, fuel-oil and electricity. Electric current to the amount of 200 kilowatts is available for extensive experiments in electric smelting. Other important pieces of equipment are a reverberatory furnace, pyrometers of several types, cyanide equipment, amalgamating devices, blowers, calorimeters, balances, sampling machines, and exhibits of metallurgical processes and products.

The mining equipment consists of an air compressor, receiver, three rock drills, aerial tram, loading and tamping models, hand tools, full equipment for practice in blasting, models, drawings, blueprints, photographs, lantern with 1,600 slides, and collection of ores and minerals. The College

of Mines mill contains breaks, rolls, 3-stamp battery, feeders, screens, classifiers, jigs, six concentrating tables, flotation cells of six types, Dings magnetic separator, coal washing equipment, and accessory apparatus.

**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.

**CURRICULA IN THE COLLEGE OF MINES**

**FRESHMAN YEAR FOR ALL CURRICULA**

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Math. 51 (algebra).....	3	Min. 50 (timbering).....	1	Math. 53 (analytics).....	3
C. E. 11 (enr. problems)...	3	Math. 52 (trig.).....	3	C. E. 13 (enr. problems)...	3
Chem. 1 or 21 (general)...	5	C. E. 12 (enr. problems)...	3	Chem. 3 or 23 (general)...	5
C. E. 1 (drawing).....	3	Chem. 2 or 22 (general)...	5	C. E. 21 (surveying).....	3
M. E. 1 (shop).....	1	C. E. 2 (drawing).....	3	M. E. 4 (timber framing)...	1
Mil. Sci. ....	2	Mil. Sci. ....	2	Mil. Sci. ....	2
	<u>17</u>		<u>17</u>		<u>17</u>

\* Summer camp in mining and topographical survey (four weeks) 6 credits.

**SOPHOMORE YEAR FOR ALL CURRICULA**

Min. 51 (elements).....	3	C. E. 27 (mine surv.).....	3	Geol. 22 (petrology).....	3
Geol. 5 (enr.).....	5	Geol. 21 (mineralogy)....	3	Physics 99 (enr.).....	5
Physics 97 (enr.).....	5	Physics 98 (enr.).....	5	Chem. 101 (quant.).....	4
Math. 61 (calculus).....	3	Math. 62 (calculus).....	3	Eng. 5-6 (enr. comp.)....	3
*Surveying Computations... 3	3	M. E. 53 (shop).....	1	Mil. Sci. ....	2
Mil. Sci. ....	2	Mil. Sci. ....	2		
	<u>18</u>		<u>17</u>		<u>17</u>

Mining practice in summer vacations. †

**MINING ENGINEERING (OPTION I)**

**JUNIOR YEAR**

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Min. 101 (milling).....	3	Min. 103 (rescue).....	1	Met. 102 (general).....	5
Met. 101 (fire assay)....	5	Min. 158 (law).....	2	E. E. 121-122 (A. C.)....	3
Geol. 123 (opt. miner)....	4	Geol. 124 (petrog.).....	4	C. E. 142 (hydraulics)...	3
C. E. 131 (mechanics)....	3	E. E. 102 (D. C.).....	3	Min. 106 (June excursion)...	3
	<u>15</u>	C. E. 132 (mechanics)....	3		
			<u>15</u>		<u>19</u>

**SENIOR YEAR**

Min. 151 (mining).....	5	Min. 154 (thesis).....	2	Min. 152 (ore dressing)...	5
Min. 153 (thesis).....	1	Met. 157 (design).....	3	Min. 155 (thesis).....	2
Met. 151 (gold-silver)...	3	Met. 162 (metalog.).....	2	Min. 182 (management)...	3
Met. 153 (wet assay)....	3	Geol. 128 (economic)....	3	Econ. 51 (introduction)...	5
Met. 155 (iron-steel)....	3	Elective .....	5		
	<u>15</u>		<u>15</u>		<u>15</u>

\* Not offered in 1918-1919.

† Mining or metallurgical practice is required of all students during a summer vacation following the sophomore or junior year.

GEOLOGY AND MINING (OPTION II)

JUNIOR YEAR

First quarter	Credits	Second quarter	Credits	Third quarter	Credits
Min. 101 (milling).....	3	Min. 108 (rescue).....	1	Met. 102 (general).....	5
Met. 101 (fire assay).....	5	Min. 158 (law).....	2	Geol. 125 (adv. petrog.)....	2
Met. 103 (fuels).....	3	Geol. 124 (petrog.).....	4	Geol. (elective).....	3
Geol. 123 (opt. minor).....	4	Zool. 15 (evolution).....	3	Elective .....	5
		Zool. 16 (ethnology).....	2	Min. 106 (June excursion)..	3
		Elective .....	3		
	<u>15</u>		<u>15</u>		<u>18</u>

SENIOR YEAR

Min. 151 (mining).....	5	Min. 154 (thesis).....	2	Min. 152 (ore dressing)....	5
Min. 153 (thesis).....	1	Met. 122 (metalog.).....	2	Min. 155 (thesis).....	2
Met. 151 (gold-silver).....	3	Geol. 128 (economic).....	3	Geol. 132 (paleo.).....	3
Met. 153 (wet assay).....	3	Geol. 131 (paleo.).....	3	Econ. 51 (introduction)....	5
Geol. 127 (economic).....	3	Elective .....	5		
	<u>15</u>		<u>15</u>		<u>15</u>

METALLURGY (OPTION III)

JUNIOR YEAR *190+12*

First quarter	Credits	Second quarter	Credits	Third quarter	Credits
Min. 101 (milling).....	3	Min. 108 (rescue).....	1	Met. 102 (general).....	5
Met. 101 (fire assay).....	5	Geol. 128 (economic).....	3	E. E. 121-122 (A. C.).....	5
Met. 103 (fuels).....	3	C. E. 132 (mechanics).....	3	Econ. 51 (introduction)....	5
C. E. 131 (mechanics).....	3	E. E. 101-102 (D. C.).....	3	Min. 106 (June excursion)..	3
M. E. 105 (mach. shop)....	1	M. E. 106 (mach. shop)....	1		
		Elective .....	2		
	<u>15</u>		<u>15</u>		<u>18</u>

SENIOR YEAR

Min. 151 (mining).....	5	Min. 154 (thesis).....	2	Min. 152 (ore dressing)....	5
Min. 153 (thesis).....	1	Met. 104 (copper-lead)....	3	Min. 155 (thesis).....	2
Met. 151 (gold-silver).....	3	Met. 157 (design).....	3	Met. 163 (metalog.).....	2
Met. 153 (wet assay).....	3	Met. 160 (analysis).....	3	C. E. 142 (hydraulics)....	5
Met. 155 (iron-steel).....	3	Met. 162 (metalog.).....	2		
		Met. 165 (calculations)....	2		
	<u>15</u>		<u>15</u>		<u>15</u>

COAL MINING (OPTION IV)

JUNIOR YEAR *191+12*

First quarter	Credits	Second quarter	Credits	Third quarter	Credits
Min. 101 (milling).....	3	Min. 108 (rescue).....	1	Met. 102 (general).....	5
Met. 101 (fire assay).....	5	Min. 120 (coal resources)..	3	E. E. 121-122 (A. C.).....	5
Geol. 122 (coal mining)....	5	Min. 122 (coal mining)....	3	C. E. 142 (hydraulics)....	5
C. E. 131 (mechanics).....	3	E. E. 101-102 (D. C.).....	3	Min. 106 (June excursion)..	3
		C. E. 132 (mechanics).....	3		
	<u>18</u>		<u>15</u>		<u>19</u>

SENIOR YEAR

Min. 151 (mining).....	5	Min. 154 (thesis).....	2	Min. 155 (thesis).....	2
Min. 153 (thesis).....	1	Min. 171 (gases).....	3	Min. 172 (plant).....	3
Met. 155 (iron-steel).....	3	Min. 176 (washing).....	5	Min. 174 (mach.).....	3
M. E. 82 (steam eng.).....	3	Elective .....	5	Min. 182 (management)....	3
M. E. 140 (exp. eng.).....	3			Econ. 51 (introduction)....	5
	<u>15</u>		<u>15</u>		<u>18</u>

## ELECTRO-METALLURGY (OPTION V)

## JUNIOR YEAR

Same as Option III

## SENIOR YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Min. 151 (mining).....	5	Min. 154 (thesis).....	2	Min. 152 (ore dressing)...	5
Min. 153 (thesis).....	1	Met. 104 (copper-lead)...	3	Min. 154 (thesis).....	2
Met. 151 (gold-silver).....	3	Met. 162 (metalog.).....	2	Met. 166 (electro).....	3
Met. 153 (wet assay).....	3	Met. 165 (calculations)....	2	Chem. 204 (electro).....	5
Met. 155 (iron-steel).....	3	C. E. 142 (hydraulics).....	3		
	<u>15</u>		<u>15</u>		<u>15</u>

## CERAMIC ENGINEERING (OPTION VI)

Courses and curriculum to be announced at opening of first quarter, 1918.

## DEPARTMENTS OF INSTRUCTION

## MINING ENGINEERING AND METALLURGY

## Mines Hall

PROFESSOR ROBERTS, ASSOCIATE PROFESSOR DANIELS, ASSISTANT PROFESSOR CORBY, INSTRUCTOR —. LECTURERS: MR. POWELL, MR. GLENN, MR. KERR, MR. CHISHOLM. ASSISTANTS: MR. SLACK, MR. BIRD, MR. THOMPSON, MR. HOLBROOK.

Mining 20, 21, 50, 103 and Metallurgy 70, 71 and 155 are of immediate application to war or war industries.

## I. MINING ENGINEERING

Ceramics courses and a four-year curriculum in ceramic engineering will be announced at the opening of the first quarter in October, 1918.

Coal miners who are taking the ten-day 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.

\*20.—MINING AND DEMOLITION.—Five credits per quarter. First and second quarters. Three recitations and two laboratories.

ROBERTS, DANIELS, HOLBROOK.

Lectures, recitations and laboratory practice in surface and underground excavation for military purposes, use of explosives for excavation and demolition, methods of timbering, pumping and drainage.

\*21.—EXPLOSIVES.—Three credits per quarter. Third quarter. Three lectures.

DANIELS.

The manufacture, use, handling and storage of explosives used in mining, tunneling and ordnance work.

\* War courses open to non-technical students.

\*50.—**MINE TIMBERING.**—One credit per quarter. Second quarter. One lecture. Laboratory deposit, \$1.00. DANIELS.

A study of the materials and methods used in timbering shafts, tunnels and drifts in hard and soft ground. Particular attention is paid to those methods used by military engineers in the war.

51.—**ELEMENTS OF MINING.**—Three credits per quarter. First quarter. Three lectures. Prerequisite, sophomore standing. DANIELS.

A general study of the field of mining, considering prospecting, boring, drilling, explosives, rock breaking, methods of development and working, transportation and drainage.

101.—**MILLING.**—Three credits per quarter. First quarter. Two lectures and one laboratory period. Prerequisite, junior standing. Laboratory deposit, \$5.00. ROBERTS, DANIELS, HOLBROOK.

Lectures and mill practice in the principles of ore dressing. During the war the study and practice will be confined to war minerals.

\*103.—**MINE RESCUE TRAINING.**—One credit per quarter. Second quarter. DANIELS, CHISHOLM.

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. Twenty-five hours' instruction. Required of all students in the College of Mines. This course is of particular military value in training men in the use of gas masks and helmets.

106.—**MINING EXCURSION.**—Three credits per quarter. Third quarter. Expenses, \$20.00 to \$40.00. ROBERTS, DANIELS, COREY.

A two weeks' excursion, taken in June of each year, to a neighboring mining region; detailed examinations of mining and metallurgical industries.

120.—**COAL RESOURCES OF NORTH AMERICA.**—Three credits per quarter. Second quarter. Three lectures. Prerequisite, course 51.

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.**—Three credits per quarter. Second quarter. Three lectures. Prerequisite, courses 51 and 120.

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.**—Five credits per quarter. First quarter. Three lectures, one laboratory and excursions. Prerequisite, senior standing. Laboratory deposit, \$3.00. ROBERTS, HOLBROOK.

Lectures on exploration, mine development and operation, with costs, power generation, air compression, hoisting and transportation. Practice with air compressors, machine drills and mine equipment in laboratories and local plants. During the war this course will specialize in the military

\* War courses open to non-technical students.

uses of surface and underground excavation, pumping and drainage, transportation and explosives.

152.—**ORE DRESSING.**—Five credits per quarter. Third quarter. Three lectures and two laboratory periods. Prerequisite, senior or graduate standing. Laboratory deposit, \$5.00.

ROBERTS, DANIELS, HOLBROOK.

A detailed study of certain branches of ore dressing accompanied by mill tests of ores checked by assays. During the remainder of the war as during 1917-1918 the study and practice will be confined to ores of the metals especially required for war purposes.

153.—**THESIS OUTLINE.**—One credit per quarter. First quarter. One laboratory period. Prerequisite, senior or graduate standing.

ROBERTS, DANIELS, COREY.

The outlining of senior thesis, the gathering of material, study of references, making of drawing, maps, etc. See course 154-155. During the remainder of the war as during 1917-1918 all theses are to be on subjects of direct application to war purposes.

154-155.—**THESIS.**—Two credits per quarter. Second and third quarters. Two laboratory periods. Prerequisite, course 153.

ROBERTS, DANIELS, COREY.

A continuation of course 153. Weekly consultation and seminars. A deposit of \$5.00 or \$10.00 will be required to cover cost of materials and equipment in thesis work involving the use of mining or metallurgical equipment.

158.—**MINING LAW.**—Two credits per quarter. Second quarter. Two lectures.

O'BRYAN.

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.**—Three credits per quarter. Second quarter. Three lectures. Prerequisite, course 122. DANIELS.

Composition and properties of mine gases, methods of testing. Lighting of mines. Principles of ventilation; ventilating machinery.

172.—**COAL MINING PLANT.**—Three credits per quarter. Third quarter. Three drafting periods. Prerequisite, senior standing. DANIELS.

Design of plant and machinery employed in mining and preparing coal for market.

174.—**COAL MINING MACHINERY.**—Three credits per quarter. Third quarter. Three lectures. Prerequisite, senior standing. 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.**—Five credits. Second quarter. Three lectures and two laboratory periods. Prerequisite, course 101, Met. 103. Laboratory deposit, \$5.00.

DANIELS.

A detailed study of methods of preparing coal for market, together with laboratory tests and runs on various coals to determine best methods of preparation.

182.—**MINE MANAGEMENT.**—Three credits per quarter. Third quarter. Three lectures. Prerequisite, senior standing. 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.

301.—**MINING METHODS.**—Three credits per quarter. Second quarter. Three lectures. Prerequisite, senior or graduate standing. ROBERTS.

An advanced study of mining methods.

302.—**MINE OPERATION.**—Three credits per quarter. Third quarter. Prerequisite, senior or graduate standing. ROBERTS.

The complete operations at a few typical mines, including mining, transportation and treatment of ore, disposal of products, company, finances and management. Illustrated by ores and products, maps and photographs, cost sheets, engineering and financial reports of the mines studied.

303.—**SEMINAR.**—One credit per quarter. First, second and third quarters. Prerequisite, senior or graduate standing. Required of Bureau of Mines fellowship holders.

Lectures and discussions by Bureau of Mines staff and College of Mines faculty.

## II. METALLURGY.

\*70—**WAR ALLOYS.**—Three credits per quarter. Third quarter. Two quarters. Three lectures and recitations. Prerequisite, general chemistry. COREY.

An outline of the metallurgy of the metals most used in the war. The minerals and ores of the war metals; the metallurgical processes used to extract the metals; the production, markets, prices and uses of each.

\*71—**WAR ALLOYS.**—Three credits per quarter. Third quarter. Two lectures and recitations. Prerequisite, general chemistry.

The properties and uses of the war metals and alloys and their manufacture into ordnance, munitions and equipment. A course designed for non-technical students expecting to enter the service.

101.—**FIRE ASSAYING.**—Five credits per quarter. First quarter. One lecture and three laboratory periods. Prerequisite, Chem. 101. Laboratory deposit, \$20.00. COREY, GLENN, SLACK.

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.**—Five credits per quarter. Third quarter.

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\* War courses open to non-technical students.

ter. Three lectures and two laboratory periods. Prerequisite, course 101. Laboratory deposit, \$10.00. COREY.

The properties of metals and alloys, fuels, refractory materials, furnaces and the extraction of the common metals from their ores. Visits to smelters.

103.—METALLURGICAL FUELS.—Three credits per quarter. First quarter. Two lectures and one laboratory period. Prerequisite, junior standing. Laboratory deposit, \$5.00. DANIELS.

The analysis of fuels and a consideration of the most effective utilization of the country's present supplies. The course will follow the outline recommended by the United States Fuel Administration.

104.—COPPER AND LEAD.—Three credits per quarter. Third quarter. Three lectures. Prerequisite, junior standing. COREY.

The metallurgy of copper and lead, especially the methods of roasting, smelting and refining.

106.—REFRACORIES.—Two credits per quarter. Third quarter. One lecture and one laboratory period. Laboratory deposit, \$3.00. COREY.

Methods of testing clays, refractory materials, cement-making materials.

151.—GOLD AND SILVER.—Three credits per quarter. First quarter. Three lectures. Prerequisite, course 102. COREY.

Amalgamation, cyaniding, and chlorination of gold and silver ores.

153.—WET ASSAYING.—Three credits per quarter. First quarter. One lecture and two laboratory periods. Prerequisite, Course 102, Chem. 101. Laboratory deposit, \$12.00. COREY.

Technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products, etc.

\*155.—IRON AND STEEL.—Three credits per quarter. First quarter. Three lectures. Prerequisite, junior standing. DANIELS.

The metallurgy and manufacture of commercial iron and steel, with especial reference to their properties and uses in engineering work.

Of especial importance to men who intend to enter ordnance or quartermaster work in the army, or naval construction work in the navy.

157.—DESIGN OF PLANT.—Three credits per quarter. Third quarter. Three drafting periods. Prerequisite, senior or graduate standing. ROBERTS, DANIELS.

The designing of a piece of equipment or a structure for mining, milling or metallurgical purposes.

158.—MINOR METALS.—Three credits per quarter. Second quarter. Three lectures. 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 per quarter. Second

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\* War courses open to non-technical students.

quarter. One lecture and two laboratory periods. Prerequisite, Chem. 101. Laboratory deposit, \$12.00. COREY.

Technical methods of analysis of slags and industrial products.

162.—METALLOGRAPHY.—Two credits per quarter. Second quarter. Two lectures. Prerequisite, junior standing. DANIELS.

The constitution and microstructure of metals and alloys, especially iron and steel.

163.—METALLOGRAPHY.—Two credits per quarter. Third quarter. Two laboratory periods per week. COREY.

The preparation and study of metal sections, photomicrography and the use of the microscope to aid in testing industrial alloys.

†164.—PYROMETRY AND ALLOYS.—Two credits per quarter. Third quarter. One lecture and one laboratory period. Laboratory deposit, \$5.00. 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.—METALLURGY CALCULATIONS.—Two credits per quarter. Second quarter. Two lectures. Prerequisite, course 102, Chem. 101. COREY.

Physical chemistry for the metallurgist, slag calculations, etc., illustrated by figures quoted from the present practice at a number of smelting plants.

166.—ELECTRO-METALLURGY.—Three credits per quarter. Third quarter. Three lectures. Prerequisite, senior or graduate standing. COREY.

A study of methods and practices with special consideration of the possibilities of electro-metallurgical industries in the Pacific Northwest.

THESIS.—See Mining 153 and 154-155.

SUMMER FIELD WORK.—See Mining 106.

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† Not offered in 1918-19.

## III. MINING AND METALLURGICAL RESEARCH

## MINES HALL AND BUREAU OF MINES HALL

THE TECHNICAL STAFF OF THE PACIFIC NORTHWEST STATION, UNITED STATES BUREAU OF MINES: THOMAS VARLEY, SUPERINTENDENT AND METALLURGIST IN CHARGE; WILL HAWES COGILL, METALLURGIST; GEORGE WATKIN EVANS, COAL MINING ENGINEER; FRANCIS C. RYAN, ELECTRO-METALLURGIST; HARLIN A. DEPEW, ASSISTANT PHYSICAL CHEMIST; CLYDE WILLIAMS, ASSISTANT METALLURGIST CHEMIST

In cooperation with the instructors in the College of Mines.

Class work will be directed by members of the instructional staff of the University. The research work is under the joint direction of the United States Bureau of Mines and the College of Mines. The subjects of research relate to the mining and metallurgical industries of the state and adjacent regions.

During the coming year investigations are contemplated in the following subjects:

1. Electro-metallurgical processes.
2. Beneficiation of coal and non-metallic minerals.
3. Clay industry and ceramics.
4. General problems affecting the ores and the mining industry of the state.
5. The development of metallurgical industries.

SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER COLLEGES OF THE UNIVERSITY

CHEMISTRY

BAGLEY HALL

1, 2, 3.—GENERAL CHEMISTRY.—Five credits per quarter. First, second or third quarter. Three lectures and two laboratory periods. Laboratory deposit, \$7.00. LANGDON.

The first two quarters are devoted to general chemistry and the chemistry of the non-metals; the third quarter to the chemistry of metals. Laboratory work of the third quarter is qualitative analysis.

21, 22, 23.—GENERAL CHEMISTRY.—Five credits per quarter. First, second or third quarter. Three lectures and two laboratory periods per week. Prerequisites, accredited high school course in chemistry. Laboratory deposit, \$7.00. LANGDON.

A course designed for students who have had a high school course in chemistry, especially for students of the Colleges of Science and Engineering.

101. QUANTITATIVE ANALYSIS.—Four credits per quarter. Second quarter. One lecture and three laboratory periods per week. Laboratory deposit, \$7.00. HEATH.

A course in the elements of quantitative methods, gravimetric analysis and volumetric methods.

\*204.—ELECTRO CHEMISTRY.—Five credits per quarter. Third quarter. Three lectures and two laboratory periods per week. BYERS.

## CIVIL ENGINEERING

### ENGINEERING HALL

1.—ENGINEERING DRAWING.—Three credits per quarter. First, second or third quarter. Prerequisite, plane geometry. Laboratory deposit, \$1.00. WARNER, ROGERS, SNELL.

The use of instruments, freehand lettering, drawing from machine parts, tracing, plating of traverse from field notes.

2.—ENGINEERING DRAWING.—Three credits per quarter. First, second or third quarter. Prerequisite, course 1.

WARNER, ROGERS, SNELL.

Fundamental principles of making views of objects occupying three dimensions of space. Drafting-room methods of solving problems requiring two or more views.

11.—ENGINEERING PROBLEMS.—Three credits per quarter. First, second or third quarter. DUCKERING, ROGERS, WARNER, HAMILTON.

The investigation of simple structures as to loadings, weights and stresses in members by algebraic and graphic methods.

12.—ENGINEERING PROBLEMS.—Three credits per quarter. First, second or third quarter. Prerequisite, course 11.

DUCKERING, ROGERS, WARNER, HAMILTON.

Elementary problems dealing with the movement of bodies. Investigation of the effects of bending and direct stress upon the materials of construction. Introduction of the ideas of calculus and analytics.

13.—ENGINEERING PROBLEMS.—Three credits per quarter. First, second or third quarter. Prerequisite, course 12.

DUCKERING, ROGERS, WARNER.

The problems of elementary machines, algebraic and graphic solution. The elasticity of materials. Hydrostatics.

21.—PLANE SURVEYING.—Three credits per quarter. First, second or third quarter. Prerequisite, course 12, 1, Math. 51. All freshman engineers. Laboratory deposit, \$3.00. HAYDEN, HAMILTON.

Adjustment of instruments, trigonometric computations, mapping of simple surveys, and a brief introduction to the U. S. system of public land surveying.

131.—MECHANICS.—Three credits per quarter. First quarter. Prerequisite, course 13, Math. 62. DUCKERING, WERNECKE.

Statics. Stresses in structures, beams, columns, flexible cords. Influence lines. Theorem of Least work. Theorem of Three Moments. Combined stresses. Centroids and Second Moments.

132.—MECHANICS.—Three credits per quarter. Second quarter. Prerequisite, course 131. DUCKERING, WERNECKE.

Dynamics. Translation and rotation. Work, energy and power friction. Torsion. Inertia of rigid bodies.

142.—HYDRAULICS.—Five credits per quarter. Third quarter. Prerequisite, course 13. Laboratory deposit, \$3.00. HARRIS, ROGERS.

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.

## ECONOMICS

COMMERCE HALL

(See Economics and Business Administration, page 110.)

## ELECTRICAL ENGINEERING

ENGINEERING HALL

101-102.—DIRECT CURRENTS.—Five credits per quarter. Soph.; Ch. E., C. E., E. E., M. E., Min. E. Prerequisite, Physics 98.

121.—ALTERNATING CURRENTS.—Five credits per quarter. Junior: M. E., Ch. E., C. E., Min. E. Prerequisite, course 101. To be taken in connection with course 101. LOEW, KIRSTEN.

A short course in alternating currents for non-electrical students.

## ENGLISH

DENNY HALL

5-6.—COMPOSITION FOR ENGINEERS.—Three credits per quarter. First, second or third quarter.

## GEOLOGY

SCIENCE HALL

5.—ENGINEERING GEOLOGY.—Five credits per quarter. First quarter. Three class and two laboratory periods per week. Primarily for mining students, chemical and civil engineers. Laboratory deposit, \$1.00. CULVER.

A survey of the field of general geology. Occasional field trips. This course, modified to suit the special needs of students in forestry is repeated in the third quarter.

21.—MINERALOGY.—Three credits per quarter. Second quarter. Two lectures and one laboratory period per week. Laboratory deposit, \$3.00. CULVER.

A brief study of crystallography followed by descriptive mineralogy and blow-pipe methods. A knowledge of chemistry is essential and general geology is desirable. One or more field trips to some mineral center.

22.—**PETROLOGY.**—Three credits per quarter. Third quarter. Two lectures and one laboratory period with occasional field trips. Laboratory deposit, \$2.00. **CULVER.**

A study of rocks, their components, occurrence and structural relations.

123. **OPTICAL MINERALOGY.** Four credits per quarter. First quarter. Two lectures and two laboratory periods per week. Prerequisite, course 5 or equivalent, 21, 22. Laboratory deposit, \$2.00. **CULVER.**

The use of the polarizing microscope in the examination of minerals and rocks in thin sections.

124. **PETROGRAPHY.** Four credits per quarter. Second quarter. Two lectures and two laboratory periods per week. Prerequisite, course 123. Laboratory deposit, \$2.00. **CULVER.**

The principles of petrography and petrographic methods in the systematic study of igneous, sedimentary and metamorphic rocks.

125.—**ADVANCED PETROGRAPHY.**—Two credits with additional credits optional. Third quarter. Prerequisite, course 124. **CULVER.**

A continuation in the work in petrography, for majors in mining and geology. Primarily a study of igneous rocks and their relations.

127–128. **ECONOMIC GEOLOGY.** Five credits per quarter. First and second quarters. Three lectures and discussion of papers. Prerequisite, courses 1 or 5, or 12, 22, 124. **LANDES.**

A study of the origin and extent of economic deposits of non-metals (first quarter), and metals (second quarter), their production and use.

131-132. **INVERTEBRATE PALEONTOLOGY.** Three credits per quarter. First and second quarters. Two lectures and one laboratory period per week. Prerequisite, course 31. May well be followed by courses 133 or 134. **WEAVER.**

A detailed systematic biologic study of fossil and living representatives of the Mollusca. First quarter, Pelecypoda; second quarter, Gastropoda.

## LAW

Commerce Hall

54–55–56. **BUSINESS LAW.** Three credits per quarter. First, second and third quarters. **AYER.**

This course covers the fundamental principles of law. The more general and practical principles are developed from problems and selected cases, particularly as related to the law of contracts, property, agency, negotiable paper, insurance, partnership and corporation, with special lectures as to statutory regulations.

## MATHEMATICS

Science Hall

51. **ALGEBRA.** Three credits per quarter. First, second or third quarter. Prerequisite, one and one-half years algebra, one year plane geometry.

Primarily for students in the colleges of Engineering and Mines.

**52. PLANE TRIGONOMETRY.** Three credits per quarter. Prerequisite, course 51. First, second or third quarter.

Primarily for students in the colleges of Engineering and Mines.

**53. ANALYTICAL GEOMETRY.** Three credits per quarter. First, second or third quarter. Prerequisite, course 52.

Primarily for students in the colleges of Engineering and Mines.

**61-62-63. CALCULUS I, II, III.** Three credits per quarter. First, second and third quarters. Prerequisites, courses 2, 53.

Primarily for students in the colleges of Engineering and Mines.

## MECHANICAL ENGINEERING

### Engineering Hall

**1, 2, 3. WOODWORK.** One credit per quarter. First, second or third quarter. Bench work, cabinet work. Pattern making. Laboratory deposit, \$2.00. **BEATTIE.**

**4. WOODWORK.** One credit per quarter. Third quarter. Prerequisite, Mining 50. Mine timber framing. Laboratory deposit, \$2.00. **DANIELS, BEATTIE.**

**53, 54, 55. METALWORK.** One credit per quarter. First, second or third quarter. Foundry, forge, machine work. Laboratory deposit, \$2.00. **KANE.**

**82. STEAM ENGINEERING.** Three credits per quarter. First, second or third quarter. Not open to freshmen. Prerequisite, C. E. 2. **EASTWOOD.**

The various forms of steam apparatus used in modern power plants, considering the construction, use and reason for installing such apparatus.

**105-106-107. METALWORK.** One credit per quarter. First, second and third quarters. Prerequisite, course 55. Laboratory deposit, \$2.00. **KANE.**

Advanced machine shop practice, nutting machine.

**140. STEAM ENGINEERING LABORATORY.** Three credits per quarter. First, second or third quarter. Preceded or accompanied by course 82. Laboratory deposit, \$2.00. **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

A course of two years in military training is required. All able-bodied male students except those from foreign countries, not intending to become naturalized, must take the course which by regulation of the University is required during the first and second years. Furthermore, every male undergraduate student is required to take physical exercise or athletics during each week of his attendance at the University, unless excused by his dean and the physical director.

## MODERN LANGUAGE

Denny Hall

For description of courses in modern languages, see bulletin of the College of Liberal Arts.

## PHYSICS

Denny Hall

97-98-99. PHYSICS FOR ENGINEERS. Five credits per quarter. First, second and third quarters. Three class and two three-hour laboratory periods per week. Prerequisite, high school physics and fifteen hours of college mathematics. BRAKEL.

## ZOOLOGY

Science Hall

15. EVOLUTION AND EUGENICS. Three credits per quarter. KINCAID. Lectures upon the principles of evolution and their relation to human welfare.

16. ETHNOLOGY. Two credits per quarter. KINCAID.

The origin, distribution and characteristics of the races of man.

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 WINTER SESSION FOR MINING MEN

The twenty-third annual short session for mining men will open on January 2, 1919, continuing until March 29. 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 class is without examination. No previous preparation, training or mining experience is necessary to enter the course, other than ability to read and write English. 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. The past experience and future aims of each student are taken into consideration, and the character of his work arranged accordingly. Prospectors and mining men may bring in their own ores and minerals for study, for assay, or for concentration tests, either by ordinary wet methods or by flotation.

Instruction is given by lectures, laboratory exercises, and visits to mines and plants in operation. Each year a group of mining men is engaged to give special lectures during the period of the short session. These men represent the fields of coal, metal and placer mining, smelting, assaying and milling.

Three general groups of studies are offered:

- (1) Quartz mining
- (2) Placer mining
- (3) Coal mining

### 1. QUARTZ MINING

For men interested in quartz or lode mining, the course outlined consists of geology, mineralogy, mining, milling, field trips, mining law, surveying, chemistry and fire assaying. Optional subjects are forge and foundry, mine timber framing, and mine rescue and first aid training.

### 2. PLACER MINING

The placer mining group embraces surveying, hydraulic mining, placer mining, geology, mineralogy, mining, milling, mining law, and forge and foundry.

### 3. COAL MINING

For coal miners the courses consist of coal analysis, coal washing, gas and lamp testing, mine rescue and first aid training, chemistry, geology, mineralogy and surveying.

### GENERAL INFORMATION

Full descriptions of all these subjects are given in the following pages. Students need not enroll for all the subjects listed in a group and changes in the choice of subjects in each group may be made, depending on the individual circumstances. For students who returned a second year, special courses are arranged in continuation of their previous work.

No charges are made in the course, except the tuition fee of ten dollars required of all students in the University, but each student makes deposits for laboratory supplies actually used and also buys his own books. The deposits in the various courses are stated under the description of the subjects. Books and supplies will average about ten dollars. The total cost of the full course is less than thirty dollars in the placer group for the three months and fifty dollars in the quartz mining studies. All deposits are made at the beginning of the course.

Rooms and board may be obtained in the University district at twenty-five to thirty dollars per month. The University operates a cafeteria, the cost of board averaging about twenty dollars per month. Several good restaurants are located close to the University. A list of boarding and rooming houses is kept on file at Mines Hall for the benefit of prospective students. The advantages of the University, such as the use of library, gymnasium, showers and the privilege of attending lectures, concerts and assemblies, are open to all winter session students.

Students who satisfactorily complete a course of study are given upon request a certificate stating the amount and character of the work done.

## TIME SCHEDULE, WINTER SESSION, COLLEGE OF MINES

	8:00	9:00	10:00	11:00	1:00-5:00
Mon.	Milling DANIELS Mines Hall	Geology, CULVER Science Hall	Mineralogy CULVER, Science Hall		Survey Field Work, Mines Hall or Forge and Found- ry. KANS Foundry Bldg.
Tues.	Mining Law O'BRYAN Commerce Hall	Mining, ROBERTS Mines Hall	Chemistry BENSON Bagley Hall	Milling DANIELS Mines Hall	Mining & Milling Laboratory Mines Hall
Wed.	Surveying Mines Hall	Geology, CULVER Science Hall	Mineralogy CULVER, Science Hall		Fire Assaying Laboratory COREY Mines Hall
Thurs.	Mining Law O'BRYAN Commerce Hall	Mining, ROBERTS Mines Hall	Chemistry BENSON Bagley Hall	Fire Assaying COREY Mines Hall	Fire Assaying Laboratory COREY Mines Hall
Fri.	Surveying Mines Hall	Mining, ROBERTS Mines Hall	Chemistry BENSON Bagley Hall	Milling DANIELS Mines Hall	Chemistry Labor- atory, BENSON Bagley Hall
Sat.	Surveying, field work or field trips.			(Time of other courses to be arranged)	

## SUBJECTS IN THE WINTER MINING SESSION

**MINING S. C. 1.** Mining lectures on prospecting, development, boring, air-compression, drilling, mining systems, timbering and transportation. Practice in air-compression, machine drilling and sampling. Study of mine maps, ore deposits and mining districts. Three lectures and one laboratory period per week. 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, electro-magnetic and flotation machinery. Three lectures and one afternoon per week. Laboratory deposit, \$3.00. DANIELS.

**MINING S. C. 3.** Placer Mining. Lectures and laboratory work in methods of placer mining. Laboratory practice in panning, sluicing, amalgamation, retorting, assaying of bullion. Lectures on testing and valuing placer ground, methods of operation, thawing, sluicing, dredging. Study of formation of placers and of type localities. Laboratory deposit, \$2.00 Two lectures and one afternoon per week. —

**MINING S. C. 4.** 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. ROBERTS, DANIELS, COREY.

**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 two afternoons a week in laboratory. Laboratory deposit, \$15.00. 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. Laboratory deposit, \$5.00. COREY.

**METALLURGY S. C. 3.** Wet assaying. Technical methods for the determination of copper, lead, zinc, etc., in ores and smelter products. Two afternoons a week. Laboratory deposit, \$10.00. COREY.

**CHEMISTRY S. C. 4. GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS.** Laboratory practice in the determination of the common elements. Three lectures a week, and one laboratory. Laboratory deposit, \$7.00. BENSON.

**GEOLOGY S. C. 2. MINERALOGY.** Instruction and practice in blowpipe analysis, with lectures upon the common minerals, and practice in the identification of minerals by field tests. Two two-hour laboratory periods per week. Laboratory deposit, \$2.00. CULVER.

**GEOLOGY S. C. 3. ELEMENTS OF GEOLOGY.** Lectures on the elements of geology, the common variety of rock, metalliferous vein and ore deposits, etc. Two lectures per week. CULVER.

**MINING LAW.** A series of lectures on the mining laws of the United States and Alaska. Illustrated by drawings and mine maps. Two lectures per week. O'BRYAN.

**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 laboratory periods per week. Laboratory deposit, \$3.00. HAYDEN.

**HYDRAULIC MINING. (C. E. 144.)** The elements of hydraulics; the flow and measurement of water in pipes, flumes and ditches with special reference to placer mining. Two lectures a week. HARRIS.

**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. Laboratory deposit, \$2.00. One afternoon a week. KANE.

**MINE TIMBER FRAMING.** Shop work in the cutting, framing and erection of various types of timbers employed in mining operations. Laboratory deposit, \$2.00. One afternoon a week. BEATTIE, DANIELS.

**MINING 103. MINE RESCUE TRAINING.** Twenty-five hours' instruction. Practice in the care and use of oxygen rescue apparatus, smoke-room training, and first-aid-to-the-injured at the U. S. Bureau of Mines Rescue Station. DANIELS, CHISHOLM.

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## College of Naval, Military and Aeronautical Science

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Armory

(See special bulletins)

# College of Pharmacy

## THE FACULTY

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

JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.

CHARLES WILLIS JOHNSON, PH. C., PH. D. (Michigan), Professor of Pharmaceutical Chemistry; DEAN and STATE CHEMIST.

ARTHUR WILSON LINTON, B. S. (Michigan), M. S. (Washington), Associate Professor of Pharmacy.  
EDITH HINDMAN, PH. C., M. S. (Washington), Instructor in Pharmacy and Assistant State Chemist and Bacteriologist.

EARL MILLIRON PLATT, PH. C., M. S. (Washington), Instructor in Pharmacy.

CORNELIUS OSSEWARD, PH. G. (Columbia), PH. C. (Northwestern), Lecturer on Commercial Pharmacy.

OMEGA HILTON, PH. C., B. S. (Washington), Assistant State Chemist.

JAMES THOMPSON, B. S. (Minnesota), Specialist U. S. Bureau of Plant Industry.

MERRILL O. RAWSON, PH. C. (Washington), Assistant in Pharmacy.

<sup>1</sup>HORACE G. BYERS, PH. D. (Johns Hopkins), Professor of Chemistry.

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

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

Pierre Joseph FREIN, PH. D. (Johns Hopkins), Professor of French.

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

<sup>2</sup>ROBERT EDOUARD MORITZ, PH. N. D. (Strassburg), Professor of Mathematics.

LESLIE J. AYER, J. D. (Chicago), Professor of Law.

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

<sup>3</sup>JOHN WEINZIERL, PH. D. (Wisconsin), Professor of Bacteriology.

WILLIAM MORRIS 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.

FRED H. HEATH, PH. D. (Yale), Assistant Professor of Chemistry.

WILLIAM MASKB, JR., PH. C., M. S. (Washington), Associate in Bacteriology.

## 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 work in one of the most fertile fields of modern science.

The students in pharmacy share the advantage 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

<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, second and third quarter, 1918.

<sup>3</sup> Absent on leave, 1917-18.

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 the 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 the College of Pharmacy are admitted as registered pharmacists without examination, providing they have had one year of practical experience.

Graduates of any course of the College of Pharmacy 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.

### THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES

The College of Pharmacy is a member of the American Conference of Pharmaceutical Faculties, an organization of college of pharmacy faculties of the United States. The objects of the Conference are: to promote closer relations between the several colleges of pharmacy of the United States, to standardize pharmaceutical education and to encourage a higher standard of proficiency for members of the profession.

### 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 scientific 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 four-year combined scientific and business course which includes the regular pharmacy work of the two-year course together with advanced training in pharmacy, and courses in the College of Business Administration and Schools of Journalism and Law which will insure the student a thorough business training. Special attention will be given to courses in business law, advertising, accounting, salesmanship, insurance, money and banking and business organization. This course is designed to produce well trained men for either retail or wholesale pharmacy.

5. A five-year course 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 (one unit algebra, one unit plane geometry).

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.

\* More detailed information concerning admission is furnished on pages 37-41.

† 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.

### 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 2, 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 2 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 allow.

### 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 twenty-one 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 (Ph. G.) will be conferred upon 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 (Ph. C.) will be conferred upon any student who has complied with the entrance conditions and has completed the three-year course.

3. The degree of bachelor of science (B. S.) will be conferred upon any student who has fulfilled the entrance requirements and has completed either the four-year scientific course or the combined scientific and business 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 (M. S.) 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.

## GARDEN OF MEDICINAL PLANTS

For several years the College of Pharmacy has maintained on the campus a garden in which plants of pharmaceutical importance have been cultivated. The area and scope of this garden has been gradually extended, until the College now has a very complete collection of medicinal

plants which furnishes valuable material for classes in botany, materia medica and drug assay.

The Bureau of Plant Industry of the United States Department of Agriculture has, for some time, taken an active interest in the garden and has rendered valuable assistance in its maintenance. During the season of 1918 the Bureau will extend this coöperation by detailing a specialist in scientific drug plant cultivation to be stationed at the college. This specialist will give his full time to the management and supervision of the garden. It is expected that with the large area now under cultivation, and with the active coöperation of the Bureau of Plant Industry, that substantial progress will be made in the solution of problems connected with the cultivation of medicinal plants 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.

### FOOD AND DRUG ANALYSIS

The enactment of the Food and Drug 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 government, states, private individuals, and corporations, if he is not trained in those subjects included in the collective name of pharmacy. These allied subjects are theory and practice of pharmacy, manufacturing pharmacy, drug assaying, pharmaceutical botany, study of the United States Pharmacopœia and National Formulary, pharmacognosy, materia medica and therapeutics, etc. A great many pharmaceutical chemists 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.

### EXPENSES

(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 fee of \$6.67 per quarter, to be paid by each student of the University.

(c) Laboratory deposits. The deposits for first-year students are: first quarter \$16.00, second quarter \$15.50, third quarter \$9.50.

Second-year students have a deposit of \$14.00 in first quarter, \$17.50 in second quarter, \$11.50 in third quarter.

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 quarter.

#### ASSOCIATED STUDENT FEE

The Associated Student fee of \$5.00 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 music concert and discounts in the coöperative bookstore.

#### 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 1917-1918 were Stewart & Holmes Drug Company, branch houses of Parke, Davis & Co., 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 & Co., 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.

#### REQUIRED MILITARY SCIENCE AND PHYSICAL EDUCATION

The University requirements in military science, physical education and hygiene are satisfied as follows:

Men students, freshmen and sophomores: Eight hours of military

science per week. Juniors and seniors: Two hours of physical education per week.

Women students in the two-year course: Physical education three times per week for one year; in all other courses three times per week for two years.

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 of Pharmacy 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 (Two-Year Course)

FRESHMAN YEAR

<i>First quarter</i>	<i>Credits</i>	<i>Second quarter</i>	<i>Credits</i>	<i>Third quarter</i>	<i>Credits</i>
Phar. 1 (Manufacturing)...	5	Phar. 2 (Manufacturing)...	5	Phar. 3 (Commercial).....	2
Chem. 8 (General).....	5	Chem. 9 (General).....	5	Chem. 10 (Qualitative)....	4
Zool. 7 (Physiology).....	5	Bot. 13 (General).....	5	Bot. 14 (Microscopy).....	4
				Phar. 4 (Materia Medica)...	5
				Phar. 15 (Field Materia Medica) .....	1

SOPHOMORE YEAR

Phar. 5 (Drug Assay).....	5	Phar. 6 (Drug Assay).....	5	Phar. 7 (Urinalysis).....	2
Chem. <del>11</del> (Organic).....	5	Chem. <del>12</del> (Organic).....	5	Bacteriology 5 .....	5
		Phar. 8 (U. S. Pharm.).....	2	Phar. 9 (Pharm. Chem.)... 5	5
Phar. 13 (Therapeutics)....	5	Phar. 10 (Prescriptions)...	2	Phar. 11 (Prescriptions)...	4
		Phar. 14 (Toxicology).....	2		

2. WITH DEGREE OF PHARMACEUTICAL CHEMIST (Three-year Course)

In addition to the work required in the two-year course, the student must complete 15 hours credit in pharmacy and electives sufficient to make 135 hours credit. Students expecting to go into commercial work are urged to elect courses in psychology, economics, business law, advertising and accounting. This work will apply on the four-year combined business and scientific course. Students expecting to enter a scientific field of work are expected to elect courses that will apply on the four-year scientific course.

3. WITH DEGREE OF BACHELOR OF SCIENCE (Four-Year Scientific Course)

In addition to the work required in the two-year course, the student must complete the following required courses:

English Composition . . . . .	5 credits (unless excused by examination)
Mathematics (Trigonometry) . . . . .	5 credits
Physics . . . . .	10 credits
Modern Foreign Language . . . . .	24 credits if one language is taken, or 30 credits (15 credits each) if two languages are taken
Laboratory Science . . . . .	25 credits and
Elective courses sufficient to make 180 credits for graduation.	

NOTE—The elective work in science may be varied so as to prepare students for: (a) Entrance to colleges of medicine; (b) manufacturing pharmacists and chemists; (c) food and drug chemists; (d) bacteriologists, or (e) physiological chemists.

4. WITH DEGREE OF BACHELOR OF SCIENCE (Four-Year Combined Scientific and Business Course)

FRESHMAN YEAR

First Quarter	Credits	Second quarter	Credits	Third Quarter	Credits
Phar. 1 (Manufacturing)...	5	Phar. 2 (Manufacturing)...	5	Phar. 3 (Commercial).....	2
Chem. 8 (General).....	5	Chem. 9 (General).....	5	Chem. 10 (Qualitative)...	4
Zool. 7 (Physiology).....	5	Bot. 13 (General).....	5	Bot. 14 (Microscopy).....	4
				Phar. 4 (Materis Medica)...	5
				Phar. 15 (Field Mat. Med.)	1

SOPHOMORE YEAR

Phar. 5 (Drug Assay).....	5	Phar. 6 (Drug Assay).....	5	Phar. 7 (Urinalysis)....	2
Chem. 38 (Organic).....	5	Chem. 30 (Organic).....	5	Bacteriology 5.....	5
Econ. 51.....	3	Econ. 53.....	3	English 1.....	5
Law 54 (Business).....	3	Law 55 (Business).....	3	Law 56 (Business).....	3

JUNIOR YEAR

Phar. 13 (Therapeutics)...	5	Phar. 14 (Toxicology)....	2	Phar. 9 (Pharm. Chem.)..	5
Jour. 107 (Advertising)...	3	Phar. 10 (Prescriptions)..	2	Phar. 11 (Prescriptions)...	4
Econ. 51 (Accounting)....	3	Phar. 8 (U. S. Pharm.)... 2		Econ. or Jour. 109 (Ad-	
Math. 11 (Investments)...	5	Econ. 82 (Accounting)....	3	vanced Advertising) ...	3
		Psychology 1.....	3	Elective .....	4
		Jour. 108 (Advertising)...	3		

SENIOR YEAR

Pharmacy.....	5	Pharmacy.....	5	Pharmacy.....	5
Econ. 121 (Insurance)....	3	Econ. 122 (Insurance)....	3	Econ. 161 (Business Organ-	
Econ. 121 (Salesmanship)...	3	Econ. 132 (Salesmanship)...	3	ization).....	3
Elective .....		Elective .....		Econ. 133 (Salesmanship)...	3
				Elective .....	6

NOTE—The student must earn 192 hours for graduation.

5. WITH DEGREE OF MASTER OF SCIENCE IN PHARMACY (Five-Year Course)

Graduates of the four-year course may continue work for the master's degree as follows:

Not more than 22 credits allowed outside of the department of Pharmacy. Election may be made in one or more of the following studies:—bacteriology, 8 to 22 credits; botany, 4 to 22 credits; physics, 10 to 22 credits; chemistry, 5 to 22 credits; zoology, 4 to 12 credits.

Not less than 23 credits shall be elected in the department of Pharmacy. At least 12 credits of the major work must be a research problem and the preparation of a thesis. Examination and thesis must conform to the regulations of the Graduate School.

DEPARTMENTS OF INSTRUCTION

PHARMACY, PHARMACEUTICAL CHEMISTRY, AND MATERIA MEDICA

Bagley Hall

PROFESSOR JOHNSON, ASSOCIATE PROFESSOR LINTON, MISS HINDMAN, MR. PLATT, MR. OSSEWARD, ASSISTANTS.

15 war course COURSES

1-2. THEORETICAL AND MANUFACTURING PHARMACY. Five credits per quarter. First and second quarters. Three lectures and two laboratory periods per week. Laboratory deposits, \$7.00 per quarter. LINTON.

The study of the principles of pharmacopœial operations, and the manufacture of Pharmacopœial and National Formulary preparations.

3. **COMMERCIAL PHARMACY.** Two credits per quarter. Third quarter. Two recitations per week. OSSEWARD.

A lecture course covering the commercial problems of the practical pharmacist.

4. **MATERIA MEDICA.** Five credits per quarter. Third quarter. Five recitations per week. LINTON.

A study of crude drugs, their source, methods of collecting and preserving, identification, active constituents and adulteration.

5-6-7. **DRUG ASSAYING.** Five credits, first and second quarters; two credits third quarter. Two recitations and three laboratory periods per week in first and second quarters, one recitation and one laboratory period per week in third quarter. Laboratory deposit, \$7.00 in first and second quarters, \$8.50 in third quarter. JOHNSON, HINDMAN.

Experiments in gravimetric and volumetric analysis are given with the idea of training the students in the fundamental principles of quantitative chemistry, and at the same time making them familiar with the analysis of substances of pharmaceutical importance. Pharmaceutical methods of assay of crude drugs and their preparations, volatile oils and other products are followed. The third quarter includes work in water analysis and urine analysis.

8. **U. S. PHARMACOPOEIA AND NATIONAL FORMULARY.** Two credits per quarter. Second quarter. Two recitations per week. LINTON.

A study of the methods and chemistry involved in Pharmacopœial and National Formulary preparations.

9. **PHARMACEUTICAL CHEMISTRY.** Five credits per quarter. Third quarter. JOHNSON.

A study of the inorganic and organic chemicals of the Pharmacopœia and National Formulary. Methods of manufacture, tests for identification of the chemical and its impurities, its medicinal uses and physiological effects will be studied.

10-11. **PRESCRIPTIONS.** Two credits second quarter, four credits third quarter. One recitation and one laboratory period per week in second quarter; two recitations and two laboratory periods per week in third quarter. Laboratory deposit, \$8.50 in second quarter, \$7.00 in third quarter. LINTON.

A study of the problems of prescription practice. Special attention will be given to incompatibilities and to the more important of the "new remedies." The students are required to criticize and compound approximately two hundred difficult prescriptions.

13. **PHARMACOLOGY AND THERAPEUTICS.** Five credits per quarter. First quarter. Five recitations per week. LINTON.

A study of the action and uses of chemicals, drugs and their preparations on the human organism in health and disease. Special attention will be given to the medicinal dose of each drug.

14. **TOXICOLOGY.** Two credits per quarter. Second quarter. Two recitations per week. LINTON.

A study of the action of poisons, methods of treatment in cases of poisoning, and methods of identification and separation of poisons from tissue.

15. FIELD MATERIA MEDICA. One credit per quarter. Third quarter. One laboratory period per week consisting largely of work in the drug garden and of field trips. Laboratory deposit, \$1.00. LINTON.

A study of the native medicinal plants of Washington and also of medicinal plants under cultivation in the drug garden.

\* 101-102-103. PHARMACEUTICAL CHEMISTRY. Two credits per quarter. First, second and third quarters. JOHNSON.

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.

105-106-107. CHEMISTRY AND ANALYSIS OF FOOD. Five credits per quarter. First, second and third quarters. Laboratory deposit, \$7.00 per quarter. JOHNSON, 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.

Course 105 is repeated in third quarter for students in the Department of Home Economics.

\* 109-110-111. TOXICOLOGY. Credit to be arranged. First, second and third quarters. Laboratory deposit according to credit. JOHNSON, HINDMAN.

A laboratory course in the separation, identification and estimation of inorganic and organic poisons and in analysis of alkaloids.

\* 113-114-115. ADVANCED PRESCRIPTIONS. Credit to be arranged. First, second and third quarters. Laboratory deposit according to credit. LINTON.

Extensive practice in difficult and incompatible prescriptions; also a study of special problems.

\* 117-118-119. CURRENT PROBLEMS. One credit per quarter. First, second and third quarters. LINTON.

A lecture and recitation course on current problems of scientific importance.

\* 121-122-123. MANUFACTURING PHARMACY. Credit to be arranged. First, second and third quarters. Laboratory deposit according to credit.

An advanced course in pharmaceutical manufacturing, including the manufacture of some of the more difficult of Pharmacopœial and National Formulary preparations, as well as a number of inorganic and organic compounds used in pharmacy and medicine.

\* 201-202-203. INVESTIGATION. Credit to be arranged. First, second and third quarters. Laboratory deposit according to credit.

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.

SUBJECTS PRESENTED BY DEPARTMENTS OF OTHER  
COLLEGES OF THE UNIVERSITY

BACTERIOLOGY

Science Hall

5. PHARMACY BACTERIOLOGY. Five credits per quarter. Third quarter. Three recitations and two three-hour laboratory periods per week. Prerequisite, sophomore standing.

A general survey, including technique, biological products sold in the drug store, antiseptics and disinfectants, sterilization and the common diseases.

109. ADVANCED MEDICAL BACTERIOLOGY. Four credits per quarter. Second quarter. Two recitations and two three-hour laboratory periods per week.

A study of pathogenic bacteria and protozoa, disease production, bacterial diagnosis and a few of the serum reactions such as the Widal test, Opsomic Index and the Wassermann reaction.

\* 111. BACTERIOLOGICAL ANALYSIS. Two credits per quarter. Third quarter. Two three-hour laboratory periods per week.

\* 112. ADVANCED BACTERIOLOGICAL DIAGNOSIS. Two credits per quarter. Third quarter. Two three-hour laboratory periods per week. Prerequisite, course 109.

\* 113. SANITARY PROBLEMS. Three credits per quarter. Third quarter. Three recitations per week.

\* 114. INFECTION AND RESISTANCE. Two credits per quarter. Second quarter. Two recitations per week. Prerequisite, course 108 or equivalent.

\* 115. IMMUNITY. Two credits per quarter. Third quarter. Two recitations per week. Prerequisite, course 109 or equivalent.

BOTANY

Science Hall

13-14. PHARMACY BOTANY. Five credits second quarter, four credits third quarter. RIGG.

Gross structure of vegetative and reproductive parts of seed plants. Brief study of spore plants. Microscopy of powdered drugs.

CHEMISTRY

Bagley Hall

8, 9, 10. GENERAL CHEMISTRY. Five credits first and second quarters, four credits third quarter. Three recitations and two laboratory periods first and second quarters, two recitations and two laboratory periods third quarter. HEATH.

A course designed especially for students of the College of Pharmacy.

\* May not be given in 1918-1919.

# Graduate School

## THE FACULTY

- HENRY SUZZALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES; Dean of the School of Law.  
J. ALLEN SMITH, PH. D. (Michigan), Professor of Political Science; DEAN.  
HENRY LANDES, A. M. (Harvard), Professor of Geology and Mineralogy; Dean of the College of Science.  
EDMOND STEPHEN MEANY, M. L. (Wisconsin), Professor of History.  
CAROLINE HAVEN OBBE, Professor of Spanish.  
CARL EDWARD MAGNUSSON, B. E. (Minnesota), PH. D. (Wisconsin), Professor of Electrical Engineering; Acting Dean of the College of Engineering.  
<sup>1</sup>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; Dean of the College of Mines.  
DAVID THOMSON, B. A. (Toronto), Professor of Latin; Dean of the College of Liberal Arts.  
FREDERICK ARTHUR OSBORN, PH. D. (Michigan), Professor of Physics and Director of Physical Laboratories.  
WILLIAM SAYERT, PH. D. (Harvard), Professor of Philosophy.  
CHARLES WILLIS JOHNSON, PH. D. (Michigan), Professor of Pharmaceutical Chemistry; 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.  
ROBERT EDOUARD MORITZ, PH. D. (Nebraska), PH. N. D. (Strassburg), Professor of Mathematics.  
HARVEY LANTZ, A. M. (De Pauw), LL. B. (Kent Law School), Professor of Law.  
EVERETT OWEN EASTWOOD, C. E., M. A. (Virginia), S. E. (Massachusetts Institute of Technology), Professor of Mechanical Engineering.  
<sup>1</sup>DAVID CONNOLLY HALL, SC. M., M. D. (Chicago), University Health Officer; Director of Physical Education for Men.  
HERBERT HENRY GOWEN, D. D. (Whitman), F. R. G. S., F. R. S. A., Professor of Oriental Languages and Literature.  
OLIVER HUNTINGTON RICHARDSON, PH. D. (Heidelberg), Professor of European History.  
STEPHEN IVAN MILLER, JR., A. B. (Stanford) LL. B. (Michigan), Professor of Transportation; Director of the College of Business Administration.  
IVAN WILBUR GOODNER, LL. B. (Nebraska), Professor of Law.  
WILLIAM FIELDING OGBURN, PH. D. (Columbia), Professor of Sociology.  
IRVING MACKAY GLEN, A. M. (Oregon), Professor of Music; Dean of the College of Fine Arts.  
<sup>1</sup>CHARLES CHURCH MORE, M. S., C. E. (Lafayette), M. C. E. (Cornell), Professor of Civil Engineering.  
<sup>1</sup>HENRY KREITZER BENSON, PH. D. (Columbia), Professor of Industrial Chemistry.  
JOHN WEINZIRL, PH. D. (Wisconsin), Professor of Bacteriology.  
HUGO WINKENWERDER, M. F. (Yale), Professor of Forestry; 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; Dean of the College of Education.  
EDWIN JOHN VICKNER, PH. D. (Minnesota), Professor of the Scandinavian Languages.  
<sup>1</sup>COLIN VICTOR DYMENT, B. A. (Toronto), Professor of Journalism; Director of the School of Journalism.  
EFFIE ISABEL RAITT, B. S. (Columbia), Professor of Home Economics; Director of the Department of Home Economics.  
<sup>1</sup>WILLIAM FRANKLIN ALLISON, B. S., C. E. (Cornell), Professor of Municipal and Highway Engineering.  
STEVENSON SMITH, PH. D. (Pennsylvania), Professor of Psychology.  
WILLIAM PIERCE GOBSUCH, A. B. (Knox), Professor of Public Speaking and Debate.  
CLARK PRESCOTT BISSETT, A. B. (Hobart), Professor of Law.  
<sup>1</sup>ARTHUR RAGAN PRIEST, A. M. (De Pauw), Professor of Debating and Dean of Men.  
ALLEN ROGERS BENHAM, PH. D. (Yale), Professor of English.  
J. ANTON DE HAAS, PH. D. (Stanford), Professor of Business Administration.  
SAMUEL LATIMER BOOTHROYD, M. S. (Colorado Agricultural College), Associate Professor of Astronomy.

<sup>1</sup> Absent on war service.

- BURT PERSONS KIRKLAND, A. B. (Cornell), Associate Professor of Forestry.  
 THOMAS KAY SIDNEY, 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 NIBBET BOWMAN, PH. D. (Heidelberg), 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.  
 \*EDGAR ALLEN LOEW, B. S., E. E. (Wisconsin), Associate Professor of Electrical Engineering.  
 EDWIN JAMES SAUNDERS, A. M. (Harvard), Assistant Professor of Geology.  
 ELIAS TREAT CLARK, M. F. (Yale), Assistant Professor of Forestry.  
 EDWARD GODFREY COX, PH. D. (Cornell), Assistant Professor of English.  
 \*JOSEPH DANIELS, S. B. (Massachusetts Institute of Technology), M. S. (Lehigh), Associate Professor of Mining Engineering and Metallurgy.  
 ELI VICTOR SMITH, PH. D. (Northwestern), Assistant Professor of Zoology.  
 CHARLES MUNROB STRONG, A. M. (Missouri), Assistant Professor of Spanish.  
 HENRY LOUIS BRAKEL, PH. D. (Cornell), Assistant Professor of Physics.  
 HARVEY BRUCE DENSMORE, A. B. (Oxford), Assistant Professor of Greek.  
 CHARLES EDWIN WEAVER, PH. D. (California), Assistant Professor of Geology.  
 CAROLINE 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.  
 \*HORACE JAMES MACINTYRE, M. M. E. (Harvard), Assistant Professor of Mechanical Engineering.  
 GINO AETURO RATTI, PH. D. (Grenoble), Assistant Professor of French.  
 ERNST 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 HERRBERT ANDERSON, PH. D. (Illinois), Assistant Professor of Physics.  
 FRIEDRICH KUET KIRSTEN, B. S. (E. E.), (Washington), Assistant Professor of Electrical Engineering.  
 \*HARLAN LEO TRUMBULL, PH. D. (Chicago), Assistant Professor of Chemistry.  
 CURT JOHN DUCASSE, PH. D. (Harvard), Assistant Professor of Philosophy.  
 ERIC TEMPLE BELL, PH. D. (Columbia), Assistant Professor of Mathematics.  
 BROR LEONARD GRONDAHL, M. S. F. (Washington), Assistant Professor of Forestry.  
 LESLIE FOREST CURTIS, B. E. (Tufts), Assistant Professor of Electrical Engineering.  
 HJALMAR LAURITS OSTERUD, A. M. (Washington), Instructor in Zoology.  
 FRANCES EDITH HINDMAN, M. S. (Washington), Instructor in Pharmacy and Assistant State Chemist and Bacteriologist.  
 \*EDWIN RAY GUTHRIE, PH. D. (Pennsylvania), Instructor in Philosophy.  
 \*HORACE HARDY LESTER, PH. D. (Princeton), Instructor in Physics.
- COMMITTEE ON GRADUATE COURSES: Professors OSBORN, THOMSON, SAVERY, FREIN and MORTZ.  
 SECRETARY OF GRADUATE FACULTY AND EX-OFFICIO SECRETARY OF COMMITTEE ON GRADUATE COURSES:  
 Professor THOMSON.

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<sup>1</sup> Absent on war service.

<sup>2</sup> Absent on leave, 1918-1919.

## 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 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

There are three Loretta Denny fellowships, of \$416.66 each, open to graduate students in any department of the University. They are awarded by the faculty on the basis of scholastic excellence and general merit, but only to those who need financial assistance. Fellows are expected to give their undivided attention to the prosecution of graduate work and must pay the regular matriculation and tuition fees. Applications for these fellowships should be made on blanks supplied by the Recorder of the University, and must be in his hands on or before March 15 preceding the academic year for which they are granted.

## UNIVERSITY HONORARY FELLOWSHIPS

Three honorary fellowships have been established by the University. These, like the Loretta Denny fellowships, are open to students in any department of the University. They carry no stipend, and are designed to furnish recognition of exceptional scholastic excellence in the case of graduate students who are not eligible for the Loretta Denny fellowships, either because they do not need financial assistance or because they are not giving their entire time to their work in the University.

## UNIVERSITY TEACHING FELLOWSHIPS

There are also a number of teaching fellowships yielding \$450.00 each. Teaching fellows are expected to give about half time to such work as the head of the department may assign. An applicant for a teaching fellowship should apply directly to the head of the department in which he is interested.

## RESEARCH FELLOWSHIPS IN U. S. BUREAU OF MINES EXPERIMENT STATION AND THE COLLEGE OF MINES

The College of Mines of the University in coöperation with the United States Bureau of Mines offers five fellowships in Mining and Metallurgical Research. The fellowships are open to graduates of universities and technical schools who are properly qualified to undertake research work. The value of each fellowship is \$720 per year of twelve months. Fellowship holders are required to register as graduate students and to become candidates for the degree of master of science in mining engineering or metallurgy, unless an equivalent degree has previously been earned.

Applications are due not later than May 15, and should be addressed to the Dean, College of Mines, University of Washington, Seattle, Washington.

### 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 degree.
2. Candidates for the doctor's degree.
3. Students not candidates for a degree.

A graduate of the 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 expects to become a candidate for a degree must file an outline of his proposed work with the Dean of the Graduate School, on a blank provided for the purpose, at the time of his registration. Registration will not be regarded as complete until this outline has been filed. When it has received the approval of the committee on graduate courses or of the graduate faculty, and the student has been notified thereof, he will be enrolled as a candidate for a degree.

### DEGREES

Every graduate student who expects to take a degree in June of any given year shall send to the Recorder a written statement to that effect between February 1 and May 1 of that year.

#### 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 five summer terms or their equivalent will satisfy the residence requirement.

2. The candidate must elect a major subject and either one or two minors. He must earn not less than thirty-six 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 forty-five 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 eighteen hours.

4. Elementary courses may not count toward the minor requirement, and the teachers' courses may not count toward either the major or minor requirement.

5. Upon completion of the work as outlined in the application, the candidate shall be given an oral or an oral and written examination 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), shall be deposited in the University library. The thesis must meet the approval of the Librarian as to form and the cost of binding must be deposited with the thesis.

#### THE DOCTOR'S DEGREE

Graduate students will be received as candidates for the degree of doctor of philosophy in chemistry, in English, in botany, in mathematics 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. One copy of the thesis in typewritten form (or library hand) shall be bound at the expense of the candidate and deposited with the librarian for permanent preservation in the University archives.

The thesis, or such parts thereof as may be designated by the committee on graduate courses, must be printed in a form approved by the librarian and one hundred copies must be presented to the University library.

The completion of the requirements as specified shall be certified by the head of the major department not later than the Wednesday preceding commencement day.

The doctor's degree will not be granted to graduates of the University of Washington who have not spent two years in graduate work, or three years in undergraduate work, at some other institution.

For the present, instructors in the University of Washington shall not be received as candidates for the doctor's degree.

#### 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 249 credits of which at least 78 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.

For description of graduate courses, see Departments of Instruction.

# Summer Quarter

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June 18-August 31, 1918

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DIRECTOR

FREDERICK E. BOLTON, PH. D., University of Washington

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## ADMISSION

The courses of the Summer Quarter are open to all persons eligible for admission to the University as either regular, unclassified or special students. As far as possible, all credentials for prospective students and applications for admission as special students should be in the hands of the Registrar before the opening of the session.

## CREDITS

Students desiring university credit will be required to pass the examinations given during the closing week of each term. A maximum of nine quarter hours of credit may be obtained during each term.

Persons who expect to be candidates for any degree or the normal diploma at the close of the Summer Quarter should make application through the Registrar on registration at the beginning of the session.

## TEXTBOOKS

Textbooks and supplies may be purchased at reduced rates at the University Book Store, managed on the coöperative plan. This store is located on the campus near Denny Hall.

## FOR WHOM INTENDED

In addition to the regular undergraduate work in the various colleges exceptional opportunities are afforded for the following classes of persons:

1. College and university graduates who wish to specialize in some field 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. Supervisors and teachers of music, manual training, domestic science, drawing and other special fields of work who will find many courses suited to their needs.
5. School teachers who wish to work toward college degrees.
6. Directors of gymnasiums and teachers of physical education and playground work. The University campus offers unusual opportunities for playground demonstration, and special emphasis will be placed on this important phase of education. The city of Seattle and the public

schools afford splendid objective illustrations of playground and recreation centers.

7. Undergraduates who for some good reason find it desirable to shorten the period of their college course.

8. Recent high school graduates who expect to enter the University in the fall and who wish to get in touch with the University before that time. High school pupils find this a very advantageous plan.

9. Persons desiring training in child welfare work, social workers, Y. M. C. A. and Y. W. C. A. directors and teachers.

10. County superintendents who desire to study problems of rural school organization, and social center and community center work.

11. Candidates for certificates who need special courses in education and psychology or other subjects.

12. Persons who are preparing to become specialists in college and normal school positions.

13. Persons who desire practical field work in botany, geology and zoölogy in a region possessing unique facilities.

14. Students who wish regular courses in law or special courses in law in preparation for teaching the commercial branches.

## FACILITIES

The Summer Quarter is an integral part of the regular university year, and its courses are organized to fit in with the other quarters of the year. By the four-quarter plan regular students will be able to take their vacations during any quarter of the year, or by attending the four quarters each year they may complete their college course in three years. Regular work will be offered in the colleges of Liberal Arts, Science, Law, Engineering, Education, Fine Arts, Business Administration, the Graduate School, and in the Pre-Medical course. The laboratories, libraries and museum are open and the various departments offer both undergraduate and graduate work equal in quality to that maintained during the rest of the year. In most departments three grades of work are offered: (a) courses for beginners in the subject, (b) courses for advanced undergraduates, and (c) courses for graduate students. 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 teachers from outside the University will give courses.

## REGISTRATION

Registration for the first term of the quarter will take place on Tuesday, June 18; that for the second term, on Friday, July 26. Students should go first to Administration Hall, where notices will be posted giving the order of procedure in registration.

Students desiring to be enrolled in any college or school of the University will be assigned by the Registrar to the Deans of the respective divisions for assistance in making out their election of studies; those not

intending, at this time, to become candidates for graduation will be assigned to the Director of the Summer Quarter.

### FEEES

The regular tuition fee of ten dollars (\$10.00) is required of all students, and admits to all the privileges of the Summer Quarter, 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 Quarter and also to the public.

### MASTER'S DEGREE THROUGH SUMMER QUARTERS

At each succeeding Summer Session a larger number of graduate students are in attendance. In 1917 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 36 credits earned during at least thirty weeks of residence in summer quarters 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.

### 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 quarters and who wish to go forward to degrees. The correspondence work can be very advantageously planned as a continuation of the regular Summer Quarter. For detailed information concerning correspondence courses write Director Edwin A. Start.

### COLLEGE OF EDUCATION

The Summer Quarter 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 quarters. The work of the Summer Quarter being especially arranged for teachers will make it possible to accomplish this.

For bulletin of the Summer Quarter address Recorder E. N. Stone. For other information address Frederick E. Bolton, Director of the Summer Quarter.

# Puget Sound Biological Station

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FRIDAY HARBOR, WASHINGTON

June 24-August 3, 1918

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DIRECTOR

THEODORS CHRISTIAN FRYE, PH. D., University of Washington

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The Puget Sound Biological Station is situated in a sheltered bay near the town of Friday Harbor, the county seat of San Juan County, with a population of approximately 500. It is between Bellingham and Victoria, about twenty-five miles from the former and about twenty miles from the latter.

San Juan County consists of an archipelago of something like one hundred islands, separated by channels cut by glacial action. The northern islands of the county are composed of sandstone, comparatively easily eroded, and wearing into potholes and peculiarly pocketed walls. In the sandstone are occasional beds of fossils, notably on the Sucia Islands. On Waldron Island and the Sucia Islands the sandstone is being cut for paving blocks for city streets.

Some of the islands are partly limestone, notably the north end of San Juan and the west side of Orcas. The largest lime works in Washington is at Roche Harbor, at the northwest corner of San Juan Island. However, comparatively little of the shore line of the archipelago is limestone.

Most of the islands are composed of metamorphic rock, which is very resistant to weathering and therefore changes very little. This is one of the reasons for the remarkable wealth of fauna and flora. Here and there are beaches of glacial material, or of sand, or flats of mud. There are no large streams on the islands, and therefore the water is exceptionally free from river detritus. Through the channels between the islands the tides rush at times with a velocity of seven to ten miles an hour, filling and again draining the Gulf of Georgia. This gulf is a body of water roughly 100 x 20 miles, and the spring tides are about twelve feet. The channels in the Friday Harbor region are the chief points of entrance and escape for this immense volume of water. Thus rocky points are swept clean from erosion deposits, the water is constantly aerated and changed, and a good habitat for water forms insured. Some of the channels are over 100 fathoms deep, thus affording opportunity for the study of forms of life to a considerable depth. Those who have been at the station have again and again attested to the abundance of marine life. A 12-foot tide exposes a wide beach, and gives excellent opportunity for the study of shore life.

The site of the station is on a steep, rocky hillside, forested with conifers. The land was donated by Mr. Andrew Newhall, and is about a quarter of a mile from the village. A country road runs through the

grounds to the village. The village contains about a dozen stores, and any ordinary purchases may be made there.

#### BUILDING AND EQUIPMENT

The zoölogical laboratory was built in the spring of 1910. It is about 30 x 60 feet, two stories and attic. The building is just above high-tide on a steep shore. Materials can therefore be landed from a small floating dock anchored to the pillars of the laboratory itself. On the first floor are laboratory tables and stockroom. On the second floor are research rooms and the general lecture-room. The attic is a general storeroom and drying loft. A dark-room is fitted up for photography. Both fresh and salt water are piped to all parts of the building.

The botanical laboratory was built as a part of the dining-hall in the spring of 1913. It has fresh water piped into it, and there is a dark-room adjacent.

Compound microscopes are taken up from the University of Washington; some general glassware is supplied. Certain ordinary glassware, containers and preservatives may be secured at the stockroom. It is the aim to have in the stockroom the things ordinarily called for. Unusual things cannot be supplied. Those wishing special apparatus should write the Director. Usually the Station has a dredge boat for a part of the time. Launches are hired to take out classes in case of necessity. Rowboats are on hand for general use; four rowboat motors were purchased in 1916, and two more in 1917.

#### SUPPLY DEPARTMENT

A supply department has been established for the purpose of providing material for class use and for investigators at the Station; also for supplying museums and schools with zoölogical and botanical material for their exhibits or classes. A price list will be furnished on application to the Director of the Station. Those who attend the Station may have a reasonable amount of material for their own laboratories put up at very nearly cost. This will permit scientists to put their whole time on class work or investigation. Teachers who wish to make small collections for their own use are not discouraged in their endeavors. Those who are looking forward to collecting large quantities of material should first correspond with the Station authorities. Scientists are urged to coöperate with the Station in its endeavor to earn a part of its running expenses through its supply department.

#### LIBRARY

The library contains about 300 volumes, of which about 100 are bound volumes of reprints. Current numbers of about fifteen American journals come to the station; but nearly all of these run back only a year or less, so they are of no great value as reference files. A limited number of books is shipped to the Station every summer from the University library.

EXPENSES

For one person for six weeks the cost is about as follows:

Station fee . . . . .	\$13.00
Tent and fittings, two in a tent (estimate . . . . .)	5.00
Board (estimate) . . . . .	30.00
Books (estimate) . . . . .	5.00
Incidentals (estimate) . . . . .	4.00
Total . . . . .	<u>\$55.00</u>

For persons occupying a research room the Station fee is \$50.00.

The Station fee has been \$10.00 for years; but the purchasing power of a dollar has materially decreased. Thus the fee has been increased by \$8.00. The \$18.00 goes toward paying the running expenses of the Station.

The tents are 10 x 12 feet, on board platforms with three-foot board wall, making the lowest part about five feet. The charge is \$1.00 per tent per week, whether occupied by one or by two persons. Springs, mattresses, camp chairs, camp stoves, buckets, cups, wash basins, are rented. Bedclothes and pillows are not furnished, although they may be bought at the village. Persons coming to the Station should bring a sufficient supply of bedding for cold nights. The whole lodging system is to be merely self-supporting over a term of years. It is yet too early to say whether \$1.00 per week will prove to be too great or too small a charge.

Meals are served in the dining-hall at perhaps \$5.00 per week. The service is merely self-supporting over a term of years, and as nearly coöperative as the conditions permit. The dining-hall is about seventy-five feet above sea level, and commands a splendid view of channels and islands in the foreground, with Mount Baker lifting its ice-covered peak 12,000 feet high in the distance.

LECTURES

General lectures by the Station staff or by visitors are given as the occasion arises. These may be given in the lecture-hall in camp, in a hall in the village of Friday Harbor, or about a campfire on the beach. The last form has proved the most popular, although it makes lantern slides impossible.

REGISTRATION

Experience has shown that it is wise to register for one full course only. Six weeks is a very short time for anyone to give to any such course, even though one's whole time be put on the work. Advanced students have found it profitable to begin some line of investigation in the same field in which they are carrying a course.

CREDIT

Students giving their whole time to the work may earn one semester-credit or one and a third quarter-credits per week.

For more detailed information apply to the Director, Dr. T. C. Frye, University of Washington, Seattle, Wash.

# University Extension Service

## OFFICERS OF ADMINISTRATION

HENRY SUZZALLO, PH. D. (Columbia), LL. D. (California), PRESIDENT.  
JOHN THOMAS CONDON, LL. M. (Northwestern), DEAN OF FACULTIES.  
EVERETT FRANCIS DAHM, A. B. (Wisconsin), Assistant Director in charge of Extension Service.

## OTHER OFFICERS

MARY C. GRADY, Office Manager.  
MABEL FRASHE, A. B., Secretary of Correspondence Study.  
HANNAH EHRLICHMAN, Secretary of General Service.

University Extension Service was introduced as a function of the University of Washington in May of 1912. It extends the purpose and usefulness of the University to the adults of the state. This purpose and usefulness takes the form of class and correspondence instruction, lectures, publications and general service work.

Its activities are organized in a Department of Instruction and a Department of General Service.

The main offices of the Extension Service are in the Administration Building of the University, while a city office and downtown classroom are maintained in rooms 1041-1044 Henry Building, Seattle. Other classroom and office accommodations are generously provided by chambers of commerce and public schools in other Washington cities.

## 1. DEPARTMENT OF INSTRUCTION

### THE FACULTY

EVERETT FRANCIS DAHM, A. B., in charge of Extension Service.

The Extension Service faculty is composed of the instructors and general University faculty, who give Extension courses. The following are members of the Extension staff:

EVERETT FRANCIS DAHM, A. B., Assistant Professor, Business Administration.  
CHARLES A. GUSBARD, B. L., Instructor in French.  
ALLETTA M. GILLETTE, A. M., Instructor in English.  
DOROTHY SHANE, B. S., Extension Instructor in Home Economics.  
JAMES M. MCCONARNEY, LL. B., M. S., Instructor in Accounting and Business Administration.  
EARL R. THOMA, Associate in Business Administration.

### LECTURERS

JAMES P. ROBERTSON, C. P. A., Lecturer in Accounting.  
B. LESTER LAMBUTH, Lecturer in Real Estate.  
HAROLD S. GAUNCE, Lecturer in Credits and Collections.  
HERNST A. LINDBERG, Lecturer in Credits and Collections.  
WILLIAM B. HENDERSON, Lecturer in Foreign Trade.  
EMUEL J. FORMAN, Lecturer in Ocean Shipping.  
CARL E. CROSON, Lecturer in Public Speaking.

Extension teaching is carried on by means of:

1. Classes and lecture courses at different towns and city centers.
2. Correspondence courses, through which individual students may be reached in any part of the state.

Extension study is for those who cannot come to the University, but who need and desire the advantage of University teaching. Courses are given for University credit, as an important part of Extension work, but

more interest in, and a need for, non-credit courses exists. The University Extension Service must meet this larger field.

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. This is a service work, and is properly placed under local high school or other competent supervision.
4. Vocational courses to supply knowledge or training which will directly affect the student's efficiency in his occupation.

#### CORRESPONDENCE STUDY

Instruction in correspondence courses is prepared and given by members of the University faculty; 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. These courses are described in circulars which anyone may obtain by writing to the office of the University Extension Service.

The courses are thorough and permanent, and wherever credit is granted represent work of scholarship. Increased attention is being given to short intensive courses of a vocational nature and non-credit.

Correspondence work 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 should comply with the requirements that are imposed upon the resident students for a degree.

**Costs:** Extension courses carry fees. The old basis of each fee was \$16.00 for a course of thirty-two assignments. Shorter courses carried a proportionately smaller fee, each eight assignments covering work equivalent to that required for one credit in a resident class. The quarterly basis, now being applied to correspondence courses, calls for six assignments for each credit. A five-credit course will hereafter carry a fee of \$15.00, a four-credit course \$12.00, a three-credit course \$9.00, a two-credit course \$6.00, and a one-credit course \$3.00. Payment of fee entitles student to instruction and to one-way postage. Textbooks, apparatus and supplies of any kind that are required for any course in addition to the text furnished by the Extension Service are purchased by the student. When these supplies cannot be obtained of local dealers they may be ordered through the University Extension Service.

**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 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 requirements of resident students may often be satisfied, in whole or in part, by attendance at the Summer Session of the fourth quarter of the University. Attendance in three entire fourth quarters will be accepted for a year of residence at the University.

#### CLASSES

Classes necessarily limited as to number and locality are given in different centers in the state. Class attendance in Seattle for 1917-1918 totaled 500. Classes in business, child psychology, foreign languages, and public speaking are most commonly given. The years 1918-1919 will see inaugurated several short courses in government; several courses of a war emergency nature, and several courses in public health service arranged to reach a large number of private groups.

Fees for classes are usually determined on the same basis as are those for correspondence courses, though number in attendance, nature of work, and distance from the teaching center may have a special bearing.

#### COURSES OF INSTRUCTION

The list of Extension courses at present offered is subject to change. Additions are frequently made. Therefore, if courses are desired in departments not mentioned in this list, inquiry should be made. Full description of the courses will be found in the circulars of information issued by the University Extension Service.

#### CLASSES — CONTINUED

Accounting II . . . . .	Olympia and Seattle
Accounting I . . . . .	Olympia
Business Law . . . . .	Olympia and Seattle
Chemistry . . . . .	Seattle
Coöperative Agencies . . . . .	Everett
Education, Principles of . . . . .	Seattle
Fine Arts . . . . .	Seattle
Food Preparation . . . . .	Seattle
Foreign Trade . . . . .	Seattle
French . . . . .	Seattle
Income Tax . . . . .	Seattle
Ocean Shipping . . . . .	Seattle
Philosophy . . . . .	Seattle
(1) General . . . . .	Seattle
(2) Social Ethics . . . . .	Seattle
(3) Philosophy of the War . . . . .	Seattle
Psychology . . . . .	Seattle
(1) General . . . . .	Seattle
(2) Abnormal and Advanced Abnormal . . . . .	Seattle
(3) Child . . . . .	Seattle
Spanish . . . . .	Seattle
Public Speaking . . . . .	Seattle

CORRESPONDENCE  
COURSES — CONTINUED

*Accounting.* No credits given.

*Astronomy.* Two credit courses in astronomy.

*Botany.* Three credit courses in botany.

*Education.* Five credit courses in education.

*Engineering.* Three credit courses in civil engineering, and five credit courses in mechanical engineering.

*English.* Fourteen correspondence courses are offered in this department — three are of high school grade, and the remainder university credit courses.

*Forestry.* One credit course is offered in this department.

*French.* Seven correspondence courses in French are offered.

*Geology.* Two credit courses in geology are offered.

*German.* Six credit courses are offered in this department.

*Greek.* Three credit courses are offered.

*History.* Two credit courses are offered.

*Home Economics.* One credit course in home economics is offered.

*Latin.* Five courses are offered in Latin — two of high school grade and three of college credit.

*Mathematics.* Three courses in mathematics are offered.

*Philosophy.* Two correspondence courses are offered.

*Political and Social Science.* Three credit courses are offered.

*Spanish.* Five correspondence courses in Spanish are offered.

New courses to be offered:

*Astronomy*—Three advanced courses.

*Education*—Four courses in addition.

*English*—Additional advanced courses.

*Geology*—Three additional courses.

*Greek*—Courses in poetry and literature.

*Journalism*—Short story and advertising.

*Mathematics*—High school algebra and geometry.

*Sociology*—Two courses in law and politics and two on the Indian and culture.

*Spanish*—Advanced courses in drama and literature — also composition and conversation.

*Zoölogy*—Three courses to be started.

There is an *active demand* for the following courses, both by class and correspondence:

<i>Class</i>	<i>Correspondence</i>
Chemistry	Music
Journalism	Journalism
Psychology	Psychology
Playground work	Playground work
Chemistry	Mathematics
	Engineering
	Forestry

New class courses in addition:

Physiology	Physical Education
Education—Industrial	History
English	Fine Arts
Spanish	Sociology

## 2. DEPARTMENT OF GENERAL SERVICE

The general activities for this department have been determined. They will consist of a speaker's bureau; publications, including debating bulletins, bulletins relating to journalism, taxation, school surveys, and other subjects (obtained at the office of the University Extension Service); investigations in business, and in social and school administrative conditions primarily; conferences for consideration of problems peculiar to this state at which specialists, trade or other groups, and those of the general public who are interested, will be in attendance; coöperation with other schools which may take the form of surveys and the adjustment of curricula to community conditions (by request), putting the school in touch with the proper University department, and of generally expanding the use of the school in the community for public purposes; organization of community committees to bring about a general community desire for education and to aid in providing such education through whatever source the assistance may be drawn from; child welfare work; and war emergency work.

## CONCLUSION

The most definite field of University Extension Service is in that of instruction; being developed in five different groups, namely: military, arts and sciences, business, industrial arts, and the fine arts.

General service activities, however, are somewhat uncertain, due partially to the newness of the field, but also complicated by war conditions. The University Extension Service will carry on and increase only the fundamentally important work during the period of the war. It will expand so far as coöperation and present facilities will permit in the line of war emergency work. At the time this statement was prepared the University Extension Service had practically completed plans of administrative coöperation with the Northwest Division of the American Red Cross in civilian relief, with public health agencies in public health work, and with businessmen in a short intensive course relating to the changed conditions due to governmental regulations of business. Military mathematics, employment management, non-commissioned officers' training camps, scoutmasters' training, and navigation are courses of war emergency nature conducted by the Extension Service.

# Degrees

**DEGREES CONFERRED JUNE 13, 1917**

(For degrees conferred at the end of the Summer Session, see pages 303-304)

Takegawa, Johane Toranosuke

Taylor, Cyril Echard

Tewinkel, Ruth Merl (*cum laude*)

Thompson, Marvelle Beatrice

Tollefson, Hazel Bell Nisbet

Tolman, Leland Ingersoll (*cum laude*)

Trail, Frederick William

Tuesley, Walter Harold

Wayland, Margaret (*cum laude*)

Werby, Mamie Mathilda

Wheeler, Henry Olmstead

Wiegman, Marie B.

Wilson, John Newton

Wilson, Wm. Ronald (*magna cum laude*)

Wittenberg, Ralph Shaver

Young, Jennie Rose

Archie, Arlie Maude  
Andrew, Alice Verna  
Arnold, Mercy Eggleston (*cum laude*)  
Athen, Sara Jane  
Baker, Mildred Elizabeth  
Barker, Stanley Forsythe  
Barr, Helen Mary  
Beegle, Burton Linton  
Best, Elva  
Binnings, Mildred Olive  
Bowdoin, Blanche Virginia  
Brakel, Anna Elnora (*cum laude*)  
Brakel, Marguerite Bell  
Breazeale, Inez Edna Marie (*cum laude*)  
Brintnall, Bert W.  
Bryan, Helen Agnes  
Bucher, Neva Marguerite  
Bush, Agnes Selene  
Caley, Katherine (*magna cum laude*)  
Canfield, Ada Clerice  
Carlton, Frances W.  
Cotton, Lois Jane  
Clague, Ewan  
Clark, Virginia Caroline  
Clare, Ethel Regina  
Clements, Colin Campbell  
Coe, Winifred Elizabeth  
Condon, Edward John  
Cook, Horace Lockwood  
Cooper, Frances Drake  
Cortright, Bernice N.  
Covey, Walter Howard  
Davis, Leslie Scoles  
deCrane, May C. P.  
Doran, Eunice Wilma

Jones, Hazel Emma  
Jones, Mary Elizabeth  
Jones, Stacy V.  
Joyner, Isabelle May  
Kastner, George Charles  
Keenan, Helen Rose  
Kelly, Helen Phoebe  
Kincaid, Frederick Marshall  
King, Marianne (*cum laude*)  
Lauthers, Gladys  
Lind, Fred Ainerd  
Lindsay, Irma  
Ludgate, Katie Eva (*summa cum laude*)  
McAllaster, Marion (*cum laude*)  
McCabe, Lucile Margueritte  
McDermott, Paul Elmer  
McDonald, Agnes  
McDonald, Claire  
McKee, Mary Elizabeth  
McLean, Margaret Vivian  
Maughlin, Frances Jean  
Meredith, Roberta Alice  
Miller, Elvena  
Miller, George Burdette  
Miura, Matajiro  
Moore, Helene  
Mossford, Frances Maria (*cum laude*)  
Mullon, Edward Albert  
Neill, Frank William  
Neill, Paul  
Newell, Polly Clover  
Nigh, Alice  
Parks, Grace Amelia  
Parolini, Elizabeth O.  
Perry, Edward Pendleton

Anderson, Clarence L.  
Anderson, Helen Merriam  
Bachmann, Amelia Helen  
Bailey, Caroline Emma  
Bailey, Edith  
Ballaine, Sophronia (*magna cum laude*)  
Banker, Iphigene Clara  
Bardin, Galva Janette  
Barter, Ella Margaret  
Belle, Jessie Lillian (*cum laude*)  
Bolinger, Blanche Elizabeth  
Boulger, Martha Lillian (*cum laude*)  
Brackett, Bertha  
Carpenter, Beatrice Hale  
Carson, Leslie DeCamp  
Chapman, Grace Lillian  
Cornell, Gladys  
David, Pearl LaRue  
Donovan, Harrison  
Downs, Agnes Leonia  
Dressler, Martha Estelle (*cum laude*)  
Drummond, Wallace Gordon  
Eagleson, James Mills  
Falknor, Judson F.  
Fay, Temple Sedgwick  
Floyd, Ruth Marion  
Foreman, Leotta Maria (*magna cum laude*)  
Freeman, Robert  
Gallup, Lucy  
Glaser, Harry G.  
Gurwich, David  
Hanson, Helen Rosanna  
Hartge, Lena Armstrong (*cum laude*)  
Hemenway, Anne Marjorie  
Henry, Ruth Varenne  
Home, Jessie Marie  
Howard, Alma Barto

Imel, Dea La  
Johnson, Gladys Almeda  
Johnson, Hilda  
Jones, Margaret Cornwell  
Kaufman, Katharine Gladys (*cum laude*)  
Knausenberger, Clara Louise  
Knausenberger, Hilda (*cum laude*)  
Lawson, Walter Eastby (*cum laude*)  
Majors, Irene  
Mendham, Jeanne Beatrice  
Meyer, Mabel June  
Michelson, Aimee  
Miller, Evalena  
Misner, Doris  
Olson, Cecelia Olive  
Patten, Anna Marie  
Platt, Annie C.  
Pucher, George Walter  
Shaffer, Florence  
Shelton, Lucy Mather  
Sherman, Thomas Wood  
Sims, Mary Geneva  
Skartvedt, Norman F.  
Slemmons, Wilbert S.  
Sprague, Hollister Thompson  
Taylor, Martha Sarah  
Vinsonhaler, Elizabeth (*magna cum laude*)  
Wainwright, Mary Tripler  
Waite, Nettie Luella  
Ward, May Dunn  
Wilson, Margaret Anne  
Wilson, Marjorie Frances  
Wirt, Harry Morton  
Wix, Elsie  
Wood, Margaret Mary  
Wright, Mary Agnes  
Yokum, Margaret

Carroll Malcolm  
Eckhart, Freda Louisa  
Eriksen, Geneva Antoinette  
Everton, Clara Marie  
Flint, Lois Elizabeth Anne  
Fonda, Ada Elizabeth  
Fosdick, Ruth Elizabeth  
Gilbert, Cyril  
Green, Dorothy  
Grout, Dorothy Knox  
Hall, Sigrid Margaret  
Hammond, Esther Nyle  
Hannon, Rose Gladys  
Hegman, Bertha (*cum laude*)  
Hemenway, Ruth Evelyn  
Herrick, Charles Barrett  
Higgins, Irene Frances (*cum laude*)  
Hitt, Gladys  
Hodge, Paul Hartman  
Hoppock, Gertrude Cornelia  
Hurley, Ernest Edmund  
Jackson, Reynold D. (*cum laude*)  
Johnson, Alfred Pullman  
Johnson, Alice M.  
Johnson, Anna Helen  
Johnston, Jeannette Adella

Purdy, Florence Wylie  
Quilliam, Louise Maude  
Read, James Wesley  
Rickles, Abraham  
Ruttle, Corinne Rosabel  
Salladay, Flora Etta  
Sample, Thomas Earl  
Sato, Hiroshi  
Charles S.  
Schumacher, Margaret C.  
Seagrave, Louis Horace  
Silver, Max Arthur  
Simon, Arthur Emil (*summa cum laude*)  
Sims, Agnes Helen (*cum laude*)  
Slater, Glen John  
Sparks, Percy Spencer  
Steel, Catherine Irene  
Steendahl, Anna Serine  
Stewart, Charles William  
Stewart, Clare Douglas (*cum laude*)  
Stewart, Wade Andrew  
Struble, Mildred Clara  
Stuart, Zara Althea  
Sully, Catherine Fredericka (*cum laude*)  
Swanson, LeRoy Dwight  
Swartz, Florence

[Many whose names appear on this and the following pages are absent on some service incident to the war.]

Bliss, Margaret Louise  
Corbitt, Marsh Morgan  
Crozier, John Lewis  
Davidson, John Frederic  
Davis, Martha Jane  
Doud, Helen Margaret  
Hansen, Harry Parker  
Hirschheimer, Helen Zoriel

Kastner, Louis Robert  
Lind, Ralph Richard  
Peterson, Frank William  
Phillips, Alan Asahel (*cum laude*)  
Post, Harry Grant  
Willard, Dudley W.  
Wood, Ruth Amelia

#### **Bachelor of Arts in Music**

Kendrick, Gladys Leslye

#### **Bachelor of Music**

Balley, George Congdon (*cum laude*)  
Bardshar, Ruth  
Bergh, Florence Helen  
Bonell, Hannah Elizabeth  
Koos, Hazel Smith

Pepper, Ruth Angie  
Philbrook, Madge Hiller  
Russell, Beulah Henrietta  
Winsor, Helen Marie

#### **COLLEGE OF ENGINEERING**

#### **Bachelor of Science in Chemical Engineering**

Gleason, Shelley Irving

Hainsworth, William Richard

#### **Bachelor of Science in Civil Engineering**

Bracken, Victor Earl  
Dean, Russell Horace (*cum laude*)  
Fleischhauer, J. Harold  
Fraser, Garrett Alexander

Gray, Howard B.  
Huestis, Robert Alexander  
Pickering, Lester Bert

Himmelsbach, Jessie Russell  
Hoard, George Lisle (*cum laude*)  
Kallander, Carl Henry

Young, Carl Ludwig  
Young, Frank Cranston

### **Bachelor of Science in Mechanical Engineering**

Hammond, Harold Lynn  
Hunt, Raymond Corbin  
Mayer, Roland George

Moore, Edward James (*cum laude*)  
Servey, Mark James  
Swart, Arthur Houghton

### **Bachelor of Science**

Draves, Carl Zeno

Sylliaasen, Vincent Leon

### **COLLEGE OF MINES**

#### **Bachelor of Science in Mining Engineering**

Boulton, Henry Graham

Gerhardt, Louis Gustav

#### **Bachelor of Science in Geology and Mining**

Cairnes, Clive Elmore (*cum laude*)

Dobson, Percy Grenside

### **Bachelor of Science**

Blogg, Cecil Fasson (*cum laude*)

### **COLLEGE OF FORESTRY**

#### **Bachelor of Science**

Blunt, Joseph Robert  
Brindley, Ralph  
Burnham, Roland Putnam  
Clarke, Donald Hathaway (*cum laude*)

Madigan, Frederick Howard  
Muncaster, Roy  
Torkelson, Timon John  
Wright, Clifford Allen

#### **Bachelor of Science in Forestry**

Browning, Harold Alfred

Vetter, George Benjamin

### **COLLEGE OF PHARMACY**

#### **Bachelor of Science**

Hilton, Omega

Peterson, Everett Norris

#### **Pharmaceutical Chemist**

Beaver, Charles W.  
Berens, Arthur Henry  
Brewer, Walter Thomas  
Chiba, Yasukichi  
Collins, Joel Ellett  
Dyer, Glen Everett

Goettge, John Edwin  
McHugh, Charlotte Cecella  
Manson, Marcus W.  
Nash, Albert Mortimer  
Sells, Anthony Joseph  
Whitmore, Jennie Comfort

#### **Certificate in Pharmacy**

Moffatt, Raymond John

### **SCHOOL OF LAW**

#### **Bachelor of Laws**

Adams, Howard Allen  
Brown, Herman Everett  
Byrd, Carroll Foster  
Carson, Albert Alexander  
Cochran, Lloyd Thomas  
Dean, Ralph Cameron  
Edris, Ned Curtis  
Erspamer, Frank A.  
Hall, George Thomas  
Hendricks, Carl Herbert  
Hill, Matthew William (*cum laude*)  
Hoard, Mary Gladys  
Kumm, Ward Confarr  
McMicken, Maurice Rey  
Macdonald, William Joseph Alexander

Matzger, Manford  
Morissette, Harry  
Newton, Charles Arthur  
Rickles, Pincus Allen  
Schollmeyer, Herman  
Schumacher, Herman Joseph  
Schwellenbach, Lew. Baxter  
Scott, Earle Winfield  
Shannon, Arthur James  
Shiel, Walter Parsons  
Sutherland, W. Luther  
Thomas, Millard Price  
Tolman, Leland Ingersoll  
Wapato, Louie Chief

Ira Leonard Collier

B. S. in C. E., University of Washington, 1913

Thesis: Design of a Sewage Disposal Plant for Moscow, Idaho

**Mechanical Engineer**

James Millard Royal

B. S. in M. E., University of Washington, 1914

Thesis: Improved Method of Fuel Atomization in the Heavy Oil Engine

**Engineer of Mines**

Russell Gibson Wayland

B. S. in Min. Eng., University of Washington, 1906

Thesis: A Forty-Month Program of Operation Proposed for the Treadwell Group of Mines

Livingston Wernecke

B. S. in Min. Eng., University of Washington, 1906

Thesis: Surface Subsidence and Water Conditions, Ventilation and Bulkheading in the Treadwell Group of Mines

**Master of Arts**

Victoria Anderson (English)

A. B., University of Washington, 1914

Thesis: Reflections of Political and Economic Thought in American Fiction, 1870-1900

Ernest C. Bloomquist (Scandinavian)

A. B., Gustavus Adolphus College, 1901

Thesis: The Place of Selma Lagerlof in Modern Swedish Literature

Eva Marsden Cole (English)

A. B., University of Washington, 1916

Thesis: Certain American Utopias

Marie Anna Collins (English)

A. B., University of Washington, 1916

Thesis: A Comparison of Dryden's Amphitryon with Moliere's Amphitryon, Rotrou's Les Sosses, and Plautus' Amphitryon

Rodrigo Diez (French)

Ph. B., University of Chile, 1911

Thesis: Influence de l'Epopée Française sur l'Epopée Espagnole

Otto Reinhold Karlstrom (Scandinavian)

A. B., Augustana College, 1907

Thesis: Gustaf Froding

Alexander Crippen Roberts (Education)

A. B., University of Wisconsin, 1906

Thesis: A Study of the Scholarship Records in the Everett High School

Rhea Rupert (English)

A. B., University of Washington, 1916

Thesis: Outcasts and Underlings in American Literature

Nelle May Senska (Education)

A. B., Buena Vista College, 1907

Thesis: Correlation of English with Other School Subjects and with Life Interests

Sophie Wilhelmine Stork (German)

A. B., University of Wooster, 1908

Thesis: Goethe's Relations to Frau von Steln

Ralph Perry Van Saw (Education)

Ph. B., University of Chicago, 1916

Thesis: A Critical Study of City School Reports

Bertha Almen Vickner (Scandinavian)

A. B., Gustavus Adolphus College, 1910

Thesis: Runebergs Episka Diktning, en Undersokning

Grace Kindig Willard (History)

A. B., University of Washington, 1910

Thesis: Andrew Johnson's Attitude Toward Negro Suffrage



<i>Name of Student</i>	<i>Home Address</i>
Andeen, Gustav Knut.....	Mount Vernon
A. B., Upsala College, 1913	
Anderson, Carl Otto.....	Rosedale, Kan.
B. S. in Min. Eng., University of Kansas, 1916	
Anderson, Isabelle Joyner (Mrs.)....	Seattle
A. B., University of Washington, 1917	
Asker, William.....	Seattle
Candidate in Philosophy (Chem.), University, Lund, Sweden, 1905	
A. M., University of Washington, 1916	
Bailey, George Congdon.....	Seattle
B. M., University of Washington, 1917	
Balsden, Leo Bernard.....	Seattle
A. B., U. of Washington, 1917	
Ball, Florence.....	Seattle
A. B., University of Washington, 1915	
Ballard, Evelyn Gladys....	McMinnville, Ore.
A. B., McMinnville College, 1917	
Bardon, Peter Jeremiah.....	Seattle
A. B., University of Washington, 1911	
Beegle, Burton Linton.....	Seattle
A. B., University of Washington, 1917	
Bender, Jacob Roy.....	Uhrichsville, O.
A. B., Ohio University, 1916	
Benthien, Elizabeth Margaret....	Bellingham
Ph. B., University of Chicago, 1915	
A. M., University of Washington, 1916	
Bloomquist, Ernest C.....	Tacoma
A. B., Gustavus Adolphus College, 1901	
A. M., University of Washington, 1917	
Blough, Allie.....	Seattle
A. B., University of Washington, 1913	
A. M., University of Washington, 1915	
Brakel, Anna Elnora.....	Portland, Ore.
A. B., University of Washington, 1917	
Browder, Aline.....	Colfax
A. B., University of California, 1915	
Cave, Gordon Luther.....	Seattle
A. B., Bates College, 1913	
Clark, Lois.....	Seattle
A. B., University of Washington, 1907	
A. M., University of Washington, 1910	
Clough, Ray William.....	Seattle
A. B., Tufts College, 1908	
A. M., Tufts College, 1909	
Cobb, Francis Waldron.....	Seattle
B. S., Alma College, 1908	
Coe, Franzel.....	Seattle
A. B., Smith College, 1914	
Coffin, Dorothy.....	Yakima
A. B., Reed College, 1916	
Collins, Marie Anna.....	Seattle
A. B., University of Washington, 1916	
A. M., University of Washington, 1917	
Connell, Helen Loretto.....	Seattle
A. B., University of Washington, 1917	
Cordz, Mamie.....	Seattle
B. A., University of Texas, 1915	
Davis, Eleanor.....	Winona, Minn.
B. A., University of Minnesota, 1914	
Dehn, Lois McBride (Mrs.).....	Seattle
B. S., University of Washington, 1916	
Denny, Madge Decatur.....	Seattle
A. B., University of Washington, 1916	
Dewhrast, William Augustus.....	Auburn
A. B., Nebraska Wesleyan University, 1912	
Dickson, John Chisholm.....	Seattle
B. S., University of Washington, 1896	
Donovan, Harrison.....	Seattle
B. S., University of Washington, 1917	

<i>Name of Student</i>	<i>Home Address</i>
Eddy, Addie Cornwall (Mrs.).....	Seattle
A. B., Simpson College, 1907	
A. M., University of Washington, 1915	
Edris, Frances Cooper (Mrs.).....	Seattle
A. B., University of Washington, 1917	
Eilert, William Herman.....	Seattle
B. S., Carleton College, 1903	
Elliott, Helen Nafe (Mrs.).....	Seattle
A. B., University of Colorado, 1916	
Ersparner, Frank A.....	Tacoma
LL. B., University of Washington, 1917	
Fischer, Arthur Homer.....	Seattle
B. S. in Min. Eng., University of Washington, 1916	
Flodin, John.....	Seattle
B. S. in Mech. Eng., University of Washington, 1913	
Foreman, Leotta Marie.....	Tacoma
B. S., University of Washington, 1917	
Fry, Annie W.....	Sumas
A. B., College of Puget Sound, 1915	
Fulton, Margaret Virginia.....	Astoria, Ore.
A. B., University of Oregon, 1912	
Gille, Madell.....	Seattle
B. S., University of Washington, 1915	
M. S., University of Washington, 1917	
Gist, Arthur Stanley.....	Seattle
B. Ed., University of Washington, 1916	
Green, Alice Brangeline.....	Seattle
B. A., University of Minnesota, 1908	
Grier, Charles Denham.....	Seattle
E. M., Colorado School of Mines, 1912	
Gunn, Thomas R.....	Seattle
B. S., Whitworth College, 1917	
Guptil, Forest Putnam.....	Seattle
B. S. in E. E., University of Washington, 1917	
Hall, Lucia E.....	Underwood
A. B., Elmira College, 1914	
Hardwick, Francis Tiley.....	Everett
A. B., University of London, London, England, 1892	
Hatch, Ethel Sumner.....	Tacoma
A. B., University of Wisconsin, 1917	
Herring, John P.....	Seattle
A. B., Brown University, 1904	
Hill, Grace Alma.....	Seattle
A. B., University of Washington, 1913	
Hilton, Omega.....	Marysville
Ph. C., University of Washington, 1915	
B. S., University of Washington, 1917	
Hjerpe, Aron Theodore Johnson.Sedro-Woolley	
A. B., Upsala College, 1913	
Huff, Floyd Ernest.....	Le Roy, N. Y.
A. B., Butler College, 1916	
Hurwich, David.....	Luzine, Russia
B. S., University of Washington, 1917	
Ingersoll, Louise Julia.....	Seattle
A. B., University of Washington, 1914	
Ishii, Mamie.....	Japan
A. B., Waseda University, Tokyo, Japan, 1916	
Isogaya, Malsen.....	Japan
A. B., Doshisha University, Japan, 1916	
Johnston, Jeannette Adella.....	Seattle
A. B., University of Washington, 1917	
Karlstrom, Otto Reinhold.....	Seattle
A. B., Augustana College, 1907	
A. M., University of Washington, 1917	
Kelsey, Audrey Vera.....	Grand Forks, N. D.
B. A., University of North Dakota, 1914	
A. M., Brown University, 1916	

<i>Name of Student and Rank</i>	<i>Home Address</i>
Kirkpatrick, Ella May	Oconto, Neb.
A. B., University of Washington, 1915	
Kiso, Daijro	Japan
Waseda University, 1915	
Koch, Samuel	Seattle
B. L., University of Cincinnati, 1899	
M. A., University of Cincinnati, 1901	
Rabbinical Certificate, Hebrew Union College, 1902	
Kolstad, Arthur	East Stanwood
A. B., University of Washington, 1916	
Liemert, Johann Ritter	Chicago, Ill.
Ph. B., University of Chicago, 1916	
Loren, Albert	Seattle
A. B., Gustavus Adolphus College, 1910	
Ludgate, Katherine Eva	Seattle
A. B., University of Washington, 1917	
McDonald, Claire	Seattle
A. B., University of Washington, 1917	
McKeenan, Charles Fred	Seattle
A. B., Indiana University, 1909	
McKibben, Irene Miriam	Seattle
Ph. B., University of Chicago, 1905	
McKinley, Florence Dillow (Mrs.)	Seattle
A. B., Lombard College, 1907	
McLoney, Barbara Ella	Portland, Ore.
A. B., Reed College, 1916	
McMillan, Earl Renwick	Marissa, Ill.
B. S., University of Missouri, 1917	
McPhee, Aletha Sophia	Seattle
A. B., University of Washington, 1918	
MacIntire, Elizabeth Jelliffe (Mrs.)	Seattle
A. B., Mount Holyoke College, 1902	
Moody, Ruth	Seattle
A. B., University of Washington, 1911	
Morgan, Miles Evan	Seattle
B. S., University of Washington, 1915	
Murchison, Mary Kathleen	Seattle
A. B., University of Washington, 1915	
Neill, Frank William	Seattle
A. B., University of Washington, 1917	
Newell, Aaron	Seattle
A. B., University of Michigan, 1902	
Nicholson, Vera Mable	Seattle
A. B., University of South Dakota, 1912	
Norton, Parker Lavella	Kingfield, Me.
A. B., University of Washington, 1916	
Palmer, Esther Rocella	Seattle
B. S., University of Washington, 1915	
Parker, Cornelia Stratton (Mrs.)	Seattle
A. B., University of California, 1907	
Poole, Jessie Lee	Seattle
A. B., University of Washington, 1915	
Pucher, George Walter	Seattle
B. S., University of Washington, 1917	
Phy, Winifred Windus (Mrs.)	Hot Lake, Ore.
A. B., Washington State College, 1915	

<i>Name of Student and Rank</i>	<i>Home Address</i>
Raymond, Rena Bowne	Seattle
A. B., University of Michigan, 1900	
Ressmeyer, Emma Bertha	Everett
Ph. B., University of Wisconsin, 1917	
Rickles, Abraham	Seattle
A. B., University of Washington, 1917	
Row, A. Narayana	Seattle
B. S., Oregon Agricultural College, 1918	
Salsbury, Frank Seely	Farmington
A. B., University of Washington, 1916	
Sheldon, Sarah Meech	Seattle
B. A., Smith College, 1907	
Slemmons, Wilbert S.	Ellensburg
B. S., University of Washington, 1917	
Smith, William Merrill	Seattle
A. B., DePauw University, 1911	
Staeger, David Arthur	Seattle
A. B., University of Washington, 1908	
Streator, Gertrude Inez	Seattle
A. B., University of Washington, 1909	
A. M., University of Washington, 1912	
Sutton, Sarah Patience	Seattle
A. B., University of Washington, 1911	
Swanson, Anna Sophia	Seattle
B. L., Carleton College, 1896	
B. A., University of Minnesota, 1907	
Tidball, Lewis Cass, Jr.	Bellingham
A. B., University of Wyoming, 1905	
Tracy, Floy	Seattle
Ph. B., Westminster College, 1912	
Trathen, Sidney Polmero	Seattle
A. B. in Educ., Ypsilanti Normal School, 1907	
Travis, Myrtle Hunt (Mrs.)	Seattle
B. A., Wellesley College, 1903	
Utterback, Clinton L.	Seattle
B. S. in E. E., Purdue University, 1909	
Van Winter, Rex Oliver	Seattle
LL. B., University of Washington, 1914	
Vickner, Bertha A. (Mrs.)	Seattle
A. B., Gustavus Adolphus College, 1910	
A. M., University of Washington, 1917	
Vinsonhaler, Elizabeth	Seattle
B. S., University of Washington, 1917	
Walsted, Mary Blanche	Seattle
B. Ed., University of Washington, 1916	
Wilcox, Myra Arlen (Mrs.)	Seattle
A. B., Indiana University, 1910	
Williams, Bertha K.	Seattle
A. B., University of Washington, 1911	
Williams, Charlotte Forsyth	Seattle
A. B., University of Washington, 1909	
Willman, August	Furmo, Finland
A. B., Reed College, 1916	
Winsor, Helen Marie	Seattle
B. M., University of Washington, 1917	
Yuge, Shichiro	Iwamamura, Japan
Meiji University, Tokyo, Japan	

## College of Liberal Arts

## ABBREVIATIONS

## CLASSES

Sr.—Senior  
Jr.—Junior

So.—Sophomore  
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Abbott, George F.; Fr.	Anaconda, Mont.
Abelset, Ruth; So.	Seattle
Adams, Adelaide; So.	Seattle
Adams, Frances True; Sr.	Seattle
Adams, Irving Eugene; So.	Waitsburg
Adams, Jeannette; So.	Spokane
Adams, Lucile Elizabeth; Jr.	Waitsburg
Adams, Verona Ione; Fr.	Seattle
Adams, Violette Beatrice; Sr.	Seattle
Agassiz, M. Florence; Sr.	Seattle
Aitchison, Irene; Sr.	Spokane
Akin, Anna Laurine; So.	Seattle
Alexander, Janet; Fr.	Seattle
Alexander, Mary Zita; Fr.	Seattle
Allan, Francis Helen; Jr.	Seattle
Allen, Alton E.; Fr.	Seattle
Allen, George Williams; Fr.	Spokane
Allen, Robert; Fr.	Seattle
Allison, T. Lyle; Sr.	Bremerton
Allison, Sydney Franklin; Fr.	Spokane
Allison, Weaver Judson; Jr.	Centralia
Amunds, Lucile Evelyn; Fr.	Ferndale
Andersen, Gudrun C.; Sr.	Seattle
Anderson, Arthur Joel; Fr.	Seattle
Anderson, Evelyn; Fr.	Seattle
Anderson, Hilma Emelle; Jr.	Colton, Ore.
Anderson, Lou E. (Mrs.); So.	Seattle
Anderson, Mary; Fr.	Seattle
Anderson, Melvin; Fr.	Seattle
Anderson, E. Myrtle; Fr.	Anaconda, Mont.
Anderson, Robert T.; Fr.	Wapakoneta, O.
Anderson, Vida; So.	Everett
Anderson, Virgil L.; Fr.	Tacoma
Andrews, Lucy; Fr.	Ferndale
Andrews, Reed; Fr.	Seattle
Angle, Joseph Eber; Sr.	Shelton
Aono, Frank Onusuke; Sr.	Seattle
Appel, Margaretha; Fr.	Seattle
Archer, Raymond Barnes; Fr.	Grandview
Armstrong, C. Irvine; So.	McMinnville, Ore.
Armstrong, Ruth Anne; So.	Seattle
Armstrong, Spencer; Jr.	Everett
Arnold, Marjorie; Fr.	Portland, Ore.
Arthur, Amber; So.	Seattle
Arthur, Agnes; Sr.	Canon City, Colo.
Atkinson, Barnett; Fr.	Seattle
Ayer, John Y.; So.	Tumwater
Ayres, Katharine Mary; Fr.	Seattle
Bachelor, Robert Williard; Fr.	Oakville
Bailey, Harriette Ruth; Fr.	Seattle
Bailey, William Locke; Fr.	Seattle
Baird, Elizabeth; Fr.	Seattle
Baker, Alice Harriet; Sr.	Seattle
Baker, Ella Graham; Sr.	Seattle
Baker, Morton C.; Fr.	Spokane
Baker, Stanley Ward; So.	Spokane
Bakewell, Edna George; So.	Seattle
Baldwin, David E.; So.	Cedarhurst
Baldwin, William Joseph; So.	Seattle
Ball, Allen N.; Fr.	Seattle
Ballaine, Florence; So.	Seattle
Ballingier, Douglas T.; Fr.	Seattle
Ballou, Ellen Holden (Mrs.); So.	Colebrook, N. H.
Bannwarth, Charles Gustave; Fr.	Seattle
Barbee, Peyton E.; So.	Seattle
Barclay, Charles Paul; So.	Black Diamond
Bardarson, Otto Wathne; Fr.	Blaine
Bardon, Guy; Fr.	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Barker, Stuart Douglas; Fr.	Seattle
Barker, Verna Katherine; Fr.	Portland, Ore.
Barnes, Grace Randall; Jr.	Tacoma
Barnes, Mildred; Jr.	Seattle
Barahisel, Kathryn; Fr.	Tacoma
Bartley, Georgia Lulu; Sr.	Waterloo, Ia.
Basler, Agnes; So.	Portland, Ore.
Bath, Gerald H.; Jr.	Tacoma
Battleson, Elizabeth Beulah; Fr.	Seattle
Bauer, Ruby Adele; Fr.	Ritzville
Baumgartner, Alfred J.; Fr.	Okanogan
Bean, Frances Lorraine; Sr.	Chicago, Ill.
Beck, Helen Mae; Fr.	Seattle
Becker, Gladys Aileen; Jr.	Seattle
Beckwith, B. Hortense; Jr.	Seattle
Bell, Bonnie; So.	Spokane
Bell, Doris Lillian; Sr.	Everett
Bell, John Karl; So.	Yakima
Bellingham, Norman; Jr.	Tacoma
Bennett, Helen Marcia; Sr.	Wenatchee
Bennett, Marjorie; Fr.	Dryad
Benson, Albert; So.	Seattle
Benson, Clarence William; Fr.	Spokane
Benson, Virginia; Fr.	Seattle
Benson, Warren B.; Fr.	Seattle
Bentley, Doris Ellen; Fr.	Boulder, Colo.
Berg, Clifford; Fr.	Walla Walla
Berger, Marcia; Fr.	Seattle
Bergoust, Charlotte; So.	Tacoma
Beutel, F. K.; Fr.	Tacoma
Bevis, Dorothy True; Jr.	Lewiston, Ida.
Bible, Evelyn Edith Kathleen; Fr.	Seattle
Bicksler, Anna Florence; So.	Salem, Ia.
Bigelow, Ernest C.; So.	Edmonds
Bjorkman, Frank Walfred; Sr.	Tacoma
Blair, Anna Clio; Jr.	Seattle
Blau, Louise Wilhelmina; Fr.	Elberton
Bliss, Ralph; Fr.	Seattle
Blue, Annie Laurie; Fr.	Clark's Fork, Ida.
Blue, Eugene C.; Fr.	Woodland
Boening, Rose Marie; Jr.	Seattle
Boeshur, Ruth I.; Fr.	Everett
Bogardus, Almon C.; So.	Seattle
Bogardus, Helen Evelyn; Fr.	Seattle
Bonner, Gertrude; Fr.	Centralia
Bordeaux, Wilfred; Fr.	Seattle
Bouck, Gordon Maynard; So.	Hillyard
Bower, Loma; Fr.	Marysville
Bowman, Beulah Marjorie; Fr.	Wathena, Kan.
Boydston, Bernice; Fr.	Seattle
Boyle, Joseph W.; Fr.	La Crosse, Wis.
Brace, Alice M.; Fr.	Seattle
Brachvogel, Rosaline; Fr.	Aberdeen
Bracoris, Enola; Fr.	Portland, Ore.
Bradley, Beatrice; Fr.	Selah
Brady, Margaret Wilda; Fr.	Tacoma
Bragdon, Ruth A.; So.	Seattle
Branchflower, Lyle Edward; So.	Mt. Vernon
Brawley, Edith May; Sr.	Seattle
Brehm, Gretchen; Fr.	Seattle
Bressler, Beatrice Olive; Fr.	Seattle
Brevick, Conrad Paul; Jr.	Seattle
Brewster, Helen Gertrude; Sr.	Seattle
Brickell, Charles Bruce; Fr.	Seattle
Brickell, Duncan W.; So.	Seattle
Bricker, Lee; So.	Seattle
Brockman, Thelma Frances; So.	Seattle
Brokaw, Bernice Ethel; So.	Stanwood
Brokaw, Marion A.; Fr.	Tacoma

<i>Name of Student and Bank</i>	<i>Home Address</i>
Brokaw, Paul; Fr.....	Tacoma
Broocke, Frances Helen; Fr.....	Ashford
Brooks, Karl; Fr.....	Pocatello, Ida.
Brooks, Le Roy Wagar; Sr.....	Seattle
Brown, Bedford, Jr.; Fr.....	Spokane
Brown, Dorothy G.; Fr.....	Seattle
Brown, Leroy E.; Fr.....	Seattle
Brown, Stanley Bruce; Fr.....	Ardmore, Okla.
Bruce, Helen R.; So.....	Seattle
Brueggeman, Kathryn; Fr.....	Seattle
Brueggerhoff, Anna Marie; Sr.....	Seattle
Bryant, Lucile Swigar (Mrs.); Jr.....	Rimrock
Burke, Howard; So.....	Walla Walla
Burke, Mary Katharine; Fr.....	Seattle
Burlingham, Frank Wilfrid; So.....	Forest Grove, Ore.
Burnett, Ralph Hall; Fr.....	Spokane
Burnett, William; Fr.....	Seattle
Burnham, Helen Marie; Jr.....	Spokane
Burns, Lillian Frances; So.....	Kalispell, Mont.
Burnside, Mary Frances; So.....	Lewiston, Ida.
Burton, Alma; So.....	Seattle
Bushnell, Marjory; Fr.....	Seattle
Bushnell, Helen; Jr.....	Seattle
Byars, Azalea Jane; Fr.....	Goldendale
Cairns, Douglas M.; Fr.....	Seattle
Caldwell, Elsie Georgiana; Jr.....	Beaverton, Ore.
Calhoun, Gladys Lillian; Jr.....	Seattle
Campbell, Donald M.; Jr.....	Seattle
Campbell, Ernest William; Sr.....	Seattle
Campbell, Florence Elizabeth; So.....	Chelan
Campbell, Jean Alison; Fr.....	Seattle
Campbell, Kenneth; So.....	Seattle
Campbell, Marguerite Esther; Fr.....	Seattle
Campbell, Mary; Jr.....	Seattle
Campbell, Mary Helen; Fr.....	Seattle
Campbell, Willis Le Roy; Fr.....	Spokane
Cardwell, Frances; So.....	Pomeroy
Carlson, Clarence H.; Fr.....	Tacoma
Carman, Josephine Dorothy; Fr.....	Seattle
Carrigan, John Beardslee; Jr.....	Seattle
Carrigan, Marlon Dwyer; Fr.....	Seattle
Carroll, Virginia Wood; Fr.....	Seattle
Casner, Burton M.; Fr.....	Seattle
Cathey, Mary Althea; So.....	Snohomish
Chan, Kay Pun; Fr.....	Canton, China
Chandler, Elsie; Sr.....	Seattle
Chandler, Dorothy; Fr.....	Tacoma
Chase, Helen; Fr.....	Seattle
Chase, Shirley McCallister; Fr.....	Seattle
Chesley, Dorothy Helen; Fr.....	Seattle
Christensen, Agnes Birgitte Gunhilde; Jr.....	Parkland
Clark, Elizabeth Roulston; So.....	Ellensburg
Clark, Wendell Whittier; Fr.....	Port Angeles
Clarke, Richard King; Fr.....	Seattle
Clausen, Elva; So.....	Seattle
Clausen, Laura; Fr.....	Seattle
Claybaugh, Esther Elizabeth; Fr.....	Austin, Colo.
Cloppan, Jean Douglas; Fr.....	Seattle
Cochran, Avadana; Jr.....	Seattle
Cochran, Catharyn Elizabeth; Fr.....	Seattle
Cochran, Lena W.; So.....	Rathdrum, Ida.
Cochran, Nan Lois; Fr.....	Portland, Ore.
Cochran, Velma; So.....	Seattle
Coffin, Geraldine; So.....	Seattle
Coffin, Margaret; So.....	Yakima
Coffin, Whitney Wenner; Fr.....	Yakima
Coohees, Orlando; Fr.....	Spokane
Cole, Juanita Carmichael; So.....	Seattle
Cole, Kenneth; Fr.....	Seattle
Cole, Miriam Elizabeth; Jr.....	Seattle
Coleman, Clarence; Jr.....	Everett
Coles, Anne Marie; Fr.....	Seattle
Colesworthy, Margaret; Fr.....	Pendleton, Ore.
Collard, Valentine Benjamin; So.....	Spokane
Collins, Dan M.; Fr.....	Seattle
Collins, William Chapin; Fr.....	Seattle
Colter, Josephine Hamilton; Fr.....	Seattle
Colton, Jeanette; Fr.....	Seattle

<i>Name of Student and Bank</i>	<i>Home Address</i>
Combs, Ulalla Ruth; Sr.....	Seattle
Comstock, George Kimball; Fr.....	Seattle
Condon, Marie Teresa; Fr.....	Seattle
Conkey, Glen; Fr.....	La Grande, Ore.
Conner, Eva M.; So.....	Seattle
Constantine, Dorothy Edna; Sr.....	Seattle
Cook, Erving S., Jr.; So.....	Anacortes
Cooper, Isabel Donkin; Fr.....	Tacoma
Copeland, Mildred Frances; Jr.....	Portland, Ore.
Copeland, William Harold; So.....	Portland, Ore.
Copps, Henry Charles; So.....	Everett
Cordz, Ora Alpha; Fr.....	Seattle
Cornell, Lora Alice; Fr.....	Tacoma
Cornier, William Watson; So.....	Wallace, Ida.
Cornett, Imogene Powell; Jr.....	Seattle
Cornett, William; Fr.....	Toppenish
Coughlin, Joseph Dewey; Fr.....	Spokane
Council, Elizabeth; So.....	Seattle
Cox, Beatrice; Fr.....	Seattle
Crahan, Margaret; Sr.....	Seattle
Craib, Margaret Cumming; So.....	Seattle
Cram, Winfield R.; So.....	Raymond
Crawford, William Randall, Jr.; So.....	Seattle
Crimmins, George; Fr.....	Bellingham
Crouley, Anne Claire; Jr.....	Seattle
Crump, John Kennan; So.....	Bremerton
Culver, Ida; Jr.....	Seattle
Cundall, Anna May; Fr.....	South Bend
Cunningham, Randolph F.; Fr.....	Snohomish
Cunningham, Theresa B.; So.....	Seattle
Curtis, Florence Marion; So.....	Seattle
Dahl, And Joel; So.....	Westby, Wis.
Dahl, Victor; Jr.....	Wenatche
Dahlin, Ebba; Jr.....	Seattle
Dalley, Ervin Frederick; Fr.....	Everett
Dalley, Grace O.; Jr.....	Seattle
Dalley, Mae Belle; Jr.....	Seattle
Dally, Louise Beatrice; So.....	Seattle
Dally, Ruth W.; Fr.....	Seattle
Dalton, John Clarke; Fr.....	Yakima
Dauton, Elizabeth Katherine; Sr.....	Winslow
Davidson, Beth Elizabeth; Fr.....	Seattle
Davidson, Thomas Nelson; Fr.....	Seattle
Davies, Francis Refenrath; Fr.....	Opportunity
Davies, Pearce Gardner; Fr.....	Seattle
Davies, Violet; Fr.....	Tacoma
Davis, Cecelia Marie; So.....	Seattle
Davis, Lois Lillian; Fr.....	Seattle
Davis, May Eleanor; Sr.....	Seattle
Davis, Ruth Magdoline; Fr.....	Bellingham
Davis, Stephen Marsh; Fr.....	Portland, Ore.
Dean, Mildred; Sr.....	Walla Walla
Dearborn, Virginia; So.....	Seattle
De Bon, George Antony; Fr.....	Cle Elum
De Bruyn, Paul M.; Sr.....	Seattle
De Chenne, Homer Ray; So.....	Hillyard
De Force, James Allen; Fr.....	Spokane
Delelein, Grace Margaret; So.....	Everett
Delaney, Eileen; Fr.....	Seattle
Delaney, Kathleen; Sr.....	Seattle
Delvendahl, Bertha Marie; Fr.....	Seattle
De Spain, Sibyl; Jr.....	Seattle
Devlin, Elmah; Jr.....	Seattle
Devlin, William Franklin; So.....	Seattle
Dickerson, Laura Cornelia; Fr.....	Dayton
Dickerson, William Eugene; Fr.....	Seattle
Dickinson, Lois; Sr.....	Seattle
Dickson, Eleanor; So.....	Loleta, Cal.
Dickson, Virgil Paul; Fr.....	Omak
Dillon, Margaret W.; Jr.....	Bellingham
Dimock, Dorothy; Jr.....	Seattle
Dingle, Helen M.; Fr.....	Yakima
Dinkelspell, Bailey G.; So.....	Seattle
Dodd, Hamlet Porch; Fr.....	Toppenish
Doheny, Charlotte; Jr.....	Seattle
Donnell, Wilma Grace; So.....	The Dalles, Ore.
Dose, Julia L.; Fr.....	Seattle
Draper, Elizabeth; Sr.....	Greeley, Colo.
Driscoll, Marie Elizabeth; Jr.....	Butte, Mont.
Duncan, James Bee Wallace; Fr.....	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Dunn, Alice J.; So.....	Sunnyside
Dunn, Beatrice Berniece; Fr.....	Waterville
Dunson, Chief W.; Fr.....	St. Maries, Ida.
Durfee, Stanley Atkinson; Fr.....	Hollywood, Cal.
Eager, Wesley Le Roy; Fr.....	Seattle
Eagleson, Helen Elizabeth; Jr.....	Seattle
Easterbrook, Gladys Fannie; Sr.....	Fort Flagler
Ehrlich, Dorothy; Fr.....	Seattle
Ehrlich, Miriam Minna; Fr.....	Spokane
Eichner, Isabel; So.....	South Bend
Ekern, Lincoln; So.....	Superior, Wis.
Eldred, Margaret; Fr.....	Whittier, Cal.
Elford, Florence; Jr.....	Seattle
Elgin, Etta D.; Fr.....	Okanogan
Ellerbeck, Louise; So.....	Seattle
Elllott, Carlotta; So.....	Seattle
Elllott, Charles Plinckney; So.....	Seattle
Elliott, John Delphos; Fr.....	Outlook
Ellis, J. Boyd; Sr.....	Olympia
Elmendorf, Julia Rider; Fr.....	Seattle
Elmore, Roma Sartoris; Sr.....	Enumacław
Elsner, Mollie Ann; Fr.....	Point Roberts
Elwick, Andrew Martin; So.....	Fandrem, Norway
Emery, Mary Elinor; Fr.....	Kenton, O.
Emigh, John Austin; Fr.....	Walla Walla
Enger, Harold Carl; Jr.....	Tacoma
Ensley, Lora Mary; So.....	Fairfield
Erickson, Carl Wesley; Fr.....	Seattle
Erickson, Sylvia Patricia; Fr.....	Astoria, Ore.
Erickson, William Paul; So.....	Seattle
Ernst, Clarence; So.....	Seattle
Ertle, U. Beatrice; So.....	Clarkston
Evans, Catharine Loise; Fr.....	Canby, Ore.
Evans, Marie Janet; Fr.....	Mountain Home, Ida.
Everett, Elizabeth Rinehart (Mrs.); Jr.....	Seattle
Fargo, Marion; Fr.....	Pocatello, Ida.
Farnsworth, Ruah; Fr.....	Lindsay, Cal.
Felipe, M. Nemesio; Fr.....	Laoag, P. I.
Fenwick, Frances Ann; Fr.....	Everett
Ferguson, Frances Patricia; So.....	Benton
Fetters, Eva Luerece; So.....	Seattle
Fetters, Mildred; Fr.....	Seattle
Fiedler, Reginald Hobson; Fr.....	Seattle
Fiengenbaum, Ruth; So.....	Index
Fillon, Fred; Fr.....	Port Angeles
Finnicum, Ruth Claire; Fr.....	Spokane
Fischer, Grace; Fr.....	Seattle
Fisher, Julia; Jr.....	Seattle
Fisher, Myrtle; So.....	Portland, Ore.
Fisken, Marjorie Kerr; Fr.....	Seattle
Fix, Carl Blissett; Fr.....	Lewiston, Ida.
Fix, Lynwood Watson; Fr.....	Lewiston, Ida.
Flanley, Mabel Gertrude; Fr.....	Seattle
Fleming, Eloine; Sr.....	Yakima
Fleming, Eloise; Sr.....	Yakima
Foltz, Venora McKinley; So.....	Everett
Foltz, Laura Azalia; Jr.....	Parkland
Forrest, Ronald C.; So.....	Seattle
Fosdick, Helen; Fr.....	Goldendale
Foster, Harry E.; So.....	McConnellsville, O.
Foster, Linn Bath; So.....	Seattle
Fox, Cellene G.; Fr.....	Spokane
Fox, Irene May; So.....	Seattle
Francis, Violet Eloise; Sr.....	Seattle
Francson, Charles Edwin; So.....	Seattle
Freedlund, Harry Alvah; Fr.....	Tacoma
Frem, Horace H.; Fr.....	Seattle
French, Irma; Sr.....	Seattle
French, Merle Carolyn; So.....	Vancouver
Freyd, Florence S.; Sr.....	Seattle
Freyd, Max; Jr.....	Seattle
Fried, David D.; So.....	Seattle
Friedman, Robert; Jr.....	Tacoma
Frost, Richard Floyd; Fr.....	Seattle
Fry, Don William; Fr.....	Anacortes
Fryer, Beatrice Elizabeth; Jr.....	Seattle
Fulton, Grace; So.....	Asotin
Fulton, J. Roy; So.....	Bremerton
Furber, George C.; So.....	Seattle
Ganson, Orlou; So.....	Odessa
Garred, Max Frank; So.....	Coulee City

<i>Name of Student and Rank</i>	<i>Home Address</i>
Garretson, James Warren; Fr.....	Yakima
Gates, Louise Margaret; Sr.....	Seattle
Gerischer, Lillion W.; Sr.....	Seattle
Gerriets, Anna; Sr.....	Mount Vernon
Gerriets, Eva Alice; Fr.....	Mount Vernon
Gibson, Blaine C.; So.....	Nyssa, Ore.
Gibson, Clara Eleanor; Fr.....	Seattle
Gibson, Fred B.; So.....	Bellingham
Gilbert, Edna; Fr.....	Salem, Ore.
Gilbert, Elton James; So.....	Yakima
Gilbert, Margaret Guida; Fr.....	Yakima
Gilchrist, Marian Virginia; Fr.....	Wenatchee
Gillespie, Ethel Alma; Fr.....	Odessa
Gilley, Beth May; Fr.....	New Westminster, B. C.
Gilroy, Helen Elizabeth; Fr.....	Seattle
Gleason, Dorothy; Jr.....	Seattle
Gonzales, Antonio A.; Fr.....	Iba, P. I.
Good, Josephine Dolores; Fr.....	Seattle
Good, Myrtle; So.....	Mount Vernon
Gorman, Vinsen, Ellen; So.....	Portland, Ore.
Gowran, Dawn Vivian; Fr.....	Seattle
Graham, Albert Ely; Fr.....	Tacoma
Graham, Louise M.; So.....	Seattle
Graves, Francis Davis; Fr.....	Bellingham
Greenleaf, Ruth; Jr.....	Seattle
Greenwalt, Charlotte E.; Fr.....	Yakima
Greiner, Ruth E.; So.....	Seattle
Gresham, Marie Cole; Sr.....	Seattle
Grier, Sherman C.; Fr.....	Spokane
Griffiths, Harold F.; So.....	Seattle
Griffiths, Lois Wilfred; So.....	Seattle
Groat, Genevieve; Sr.....	Seattle
Guenther, Chrystal; So.....	Seattle
Guenther, Stuart; So.....	Astoria, Ore.
Gule, Heister Dean; So.....	Seattle
Gulon, Raymond Paxton; Fr.....	Seattle
Guthrie, Marie Pauline; Jr.....	Seattle
Gwinn, Olive Gertrude; Jr.....	Pendleton, Ore.
Haas, Mark Leo; Jr.....	Seattle
Haecker, Mary Mendota; Sr.....	St. Paul, Minn.
Hagen, Percy Henry; Fr.....	Seattle
Hagler, Lawrence; So.....	Yakima
Hainsworth, Arthur; Fr.....	Seattle
Hainsworth, Jeannette Florence; Jr.....	Seattle
Hall, Mabel; So.....	Seattle
Hall, Mary Lee; So.....	Seattle
Halvorson, Oscar Henry; So.....	Mabton
Hamel, Floyd Raymond; Sr.....	Seattle
Hamil, Margaret Marian; Fr.....	Seattle
Hamilton, Clark A.; So.....	Wesler, Ida.
Hamilton, Rupert Lehn; So.....	Seattle
Hammarberg, Agnes Elizabeth; Fr.....	Seattle
Osterund, Sweden	
Hammond, Orlena I.; Fr.....	Spokane
Hannan, Marguerite Baker; So.....	Seattle
Hansen, Helen M.; So.....	Vashon
Hansen, Viola; Fr.....	Seattle
Hanson, Clara; So.....	Seattle
Harlow, Frances Winsor; So.....	Seattle
Harlow, George Harold; Fr.....	Tacoma
Harman, Marion, Frances; Fr.....	Anchorage, Alaska
Harris, Olive Mildred; Sr.....	Seattle
Harris, Sarah Eleanor; So.....	Seattle
Hartman, Robert N.; Jr.....	Seattle
Hartmann, Elsie A.; Sr.....	Anacortes
Harvey, Helen; Fr.....	Walla Walla
Harvitz, Barnett; Jr.....	Seattle
Haslett, Ruth M.; Jr.....	Tacoma
Hawthorne, Rebecca Allison; Jr.....	Seattle
Heath, Esther; So.....	Stanfield, Ore.
Hedrick, Paul Harrington; Fr.....	Seattle
Heermans, Donald; So.....	Olympia
Heffernan, Grace E.; Jr.....	Seattle
Hellenthal, Marguerite Dorothy; Fr.....	Seattle
Henry, Lee G.; So.....	Tonganoxie, Kan.
Henry, Lee Roy; Fr.....	Seattle
Hergert, Maude Elizabeth; So.....	Seattle
Herner, Helen; Sr.....	Portland, Ore.
Herner, Pauline Eleanor; Fr.....	Portland, Ore.
Hibbard, Myra; Fr.....	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Hicks, Lucile; So.....	Seattle
Hill, Edward G.; Fr.....	Seattle
Hill, Ethel M.; Jr.....	Seattle
Hill, Helen Elizabeth; Sr.....	Seattle
Hillyard, Carlton; So.....	Republic
Hinton, Gerald Lorne; Fr.....	Seattle
Hitchings, Esther Louise; Fr.....	Seattle
Hjertoos, Gurina; So.....	Tolt
Hoag, George E. Fr.....	Hoquiam
Hoagland, T. Otto; Fr.....	Seattle
Hoch, Grace; Fr.....	Pendleton, Ore.
Hogg, Hazel H.; Fr.....	Kelso
Hogg, Jack M.; Fr.....	Seattle
Hogue, Helena; Fr.....	Seattle
Holbrook, William Paul; Jr.....	Seattle
Holland, Ruth Madeline; Fr.....	Seattle
Holloway, Ruby E.; So.....	Seattle
Holmes, Anne Matilda; Sr.....	Seattle
Honey, Frederic Drake; Fr.....	Gresham, Ore.
Hong, Harold W.; Fr.....	Parkland
Hopkins, Doris Fernald; So.....	Seattle
Hopper, Dorothea Conley; Fr.....	Seattle
Hopper, George Thomas; So.....	Spokane
Hopping, William D.; Jr.....	Tacoma
Hopcock, Adele Louise; Sr.....	Seattle
Houck, Eva Lucile; So.....	Seattle
Hovey, Dorothy; Fr.....	Seattle
Howe, Harold Max; Fr.....	Spokane
Howell, Thomas John; So.....	Coulee City
Hoyt, Verna Margaret; Fr.....	Seattle
Hubbard, Ray Gall; Fr.....	Spangle
Hudson, Mabel Catherine; Fr.....	Everett
Hudson, Marjorie Merle; Fr.....	Seattle
Huff, Virginia; Sr.....	Seattle
Hughes, Della; Fr.....	Gresham, Ore.
Hunsaker, Herbert C.; Fr.....	White Salmon
Hunsicker, Avis Elvera; Fr.....	Seattle
Hunt, Hector M.; So.....	Seattle
Hunter, Ruth; Jr.....	Seattle
Hunsiker, Lucile Dorothy; So.....	Portland, Ore.
Hutchinson, Pansy; Sr.....	Mount Vernon
Hutchinson, William Harold; Fr.....	Seattle
Hutchison, Frances Ethel Patricia; So.....	Seattle
Ingels, John Sidney; Fr.....	Seattle
Ives, Alice; Fr.....	Seattle
Ivy, Eugene Dyke; So.....	Davenport
Jackson, Geraldine Agnes; So.....	Seattle
Jackson, Mildred Helen; Fr.....	Seattle
Jacobs, Isabel; Jr.....	Seattle
Jacobs, Townsend H., Jr.; Fr.....	Seattle
Jacobson, Pauline; Sr.....	Los Angeles, Cal.
James, Jeannette; Sr.....	Seattle
Janson, Ellen Margaret; Fr.....	Seattle
Jaques, Reginald; Fr.....	San Francisco, Cal.
Jenne, Grace Manetta; Jr.....	Coupeville
Johnson, Arthur; Fr.....	Tacoma
Johnson, Euphemia; So.....	Seattle
Johnson, Evelyn Alice; Fr.....	Seattle
Johnson, Helen Marie; So.....	Burlington
Johnson, Jane Gregg; Fr.....	Seattle
Johnson, Juanita Kathleen Maurine; Fr.....	Tacoma
Johnson, Manly M.; Jr.....	Yakima
Johnson, Martha Eleanor; Fr.....	Yakima
Johnson, Rose; Jr.....	Buhl, Ida.
Johnson, Victor Martin; Fr.....	Spokane
Johnson, William E.; Jr.....	Selah
Johnston, Hazel Blanch; So.....	Seattle
Johnston, Theresa Marguerite; Fr.....	Seattle
Johnston, Violet Kathleen; Sr.....	Ritzville
Jolner, Anna Elmira; Jr.....	Anacortes
Jones, Dorothy; Jr.....	Vancouver
Jones, Ella; Jr.....	Seattle
Jones, Evan Melvin; Fr.....	Black Diamond
Jones, Hayes; Jr.....	Seattle
Jones, Hazel Elizabeth; Fr.....	Yakima
Jones, Marjorie; Fr.....	Seattle
Jones, William John; Fr.....	Seattle
Jorgensen, Ruth; So.....	Seattle
Josenhans, Sarah Charlotte; So.....	Seattle
Juan, Teofilo; Fr.....	Polo, P. I.

<i>Name of Student and Rank</i>	<i>Home Address</i>
Judd, Elsie G.; Jr.....	Seattle
Judy, Marjorie E.; Jr.....	Seattle
Kager, Garnet; Fr.....	Sultan
Kaufman, Edith Rachel; So.....	Bellingham
Kaufman, Gertrude Adelaide; Fr.....	Bellingham
Kaufman, Gretchen; So.....	Bellingham
Keenan, Mary Antoinette; Sr.....	Seattle
Kelsey, Louise; Sr.....	Seattle
Keltner, Lillian Belle; Fr.....	Seattle
Kelton, Viola; Sr.....	Dawton, Y. T., Canada
Kennedy, Doreen; Fr.....	Seattle
Kerr, Ruth H.; Jr.....	Seattle
Kief, Katherine Poe; So.....	Mountain Home, Ida.
King, Virginia Emma; Jr.....	Seattle
King, William G.; Jr.....	Seattle
Kitamura, Morimitsu; So.....	Seattle
Kleinberg, Alfred Harold; So.....	Ellensburg
Klopper, Lucy Minnie; Fr.....	Seattle
Knapp, Frances; So.....	Lynden
Knapp, Martha Gertrude; Sr.....	Seattle
Knettle, Lemyr Dix; Fr.....	Pomeroy
Knisely, Margaret Gould; Fr.....	Seattle
Knowlton, Frederick Corbett; Fr.....	Seattle
Kobayashi, Hideoichi; Fr.....	Seattle
Koenig, Rowland Hill; So.....	Boise, Ida.
Kolmitz, A. Victor; Jr.....	Seattle
Kozlowski, Frank; So.....	Seattle
Krohn, Violet L.; So.....	Seattle
Kronschable, Mercedes; Sr.....	Seattle
Kruse, Mildred Margarethe; So.....	Portland, Ore.
Kuhn, Jessie; Fr.....	Seattle
Kyd, Margaret Stewart; So.....	Seattle
Lachman, Dorothy; So.....	Seattle
Lande, Lynn; Fr.....	Vashon
Laney, Frances Willard; Sr.....	Seattle
Larrison, Margaret F.; Jr.....	Seattle
Larse, Mona Josephine; Fr.....	Plains, Mont.
Larson, Emma Carolyn; Jr.....	Lisabeula
Larson, Lars Oscar; Fr.....	Seattle
Larson, Mildred; Sr.....	Seattle
Latimer, Allan Wallace; Fr.....	Seattle
Laughlin, Raymond; Fr.....	Ellensburg
Lawrence, Edna May; Jr.....	Everson
Lawson, Douglas Clyde; Fr.....	Portland, Ore.
Leaming, Gertrude; Fr.....	Castle Rock
Leaming, Ruth; So.....	Castle Rock
Leavitt, Dorothy; So.....	Seattle
Leavitt, Marion Clara; Fr.....	Seattle
Lee, Alton Earl; Fr.....	Kirkland
Legg, Zilpha Emily; So.....	Seattle
Leighorn, Frances Marie; Jr.....	Seattle
Leighorn, James Malcolm; Fr.....	Seattle
Leighton, Ada Beach (Mrs.); Sr.....	Seattle
Leith, Jessie; Fr.....	Seattle
Lemon, John Francis; So.....	Meridian
Leo, Carl M.; So.....	Seattle
Leslie, Cora Ross; Fr.....	Waterville
Leslie, William M.; So.....	Seattle
Lesser, Margaret Helen; So.....	Seattle
Levinson, Henrietta; Fr.....	Seattle
Lewis, Raymond; Fr.....	Raymond
Lieberg, Vivian Helen; Sr.....	Seattle
Lillopoulos, Hercules; Fr.....	Seattle
Limecooly, Clinton O.; Fr.....	Seattle
Lin, Fu; Fr.....	Hunan, China
Lindberg, Wilmer Hilding; So.....	Tacoma
Linder, Muriel; Sr.....	Seattle
Lindsay, Francis Steele; So.....	Seattle
Lodwick, David Foster; Fr.....	Spokane
Loftfield, Gabriel; Sr.....	Seattle
Logan, Florence L.; Jr.....	Seattle
Logg, Charles P.; So.....	Baird
Long, Sylvester; Fr.....	Renton
Loomis, Minerva Udell (Mrs.); Jr.....	Burton
Lopp, Weyana; So.....	Seattle
Lovely, Josephine Monica; Jr.....	Arlington
Low, Nellie; So.....	Dayton
Ludington, Flora Belle; So.....	Wenatchee
Lund, Katharine Louise; Sr.....	Seattle
Lundstrom, Margaret; So.....	Dala-Jarna, Sweden
Lundy, Iris Rachel; Fr.....	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>	<i>Name of Student and Rank</i>	<i>Home Address</i>
Lurie, John; Fr.	Seattle	Merrifield, Florine Virginia; Jr.	Kent
Lutz, Harold H.; Jr.	Seattle	Merritt, Fred S.; Fr.	Seattle
Lynch, Cornelius Joseph; Fr.	Terry, Mont.	Metlen, David W.; Fr.	Helena, Mont.
Lynch, Edward Harney; Fr.	Everett	Meyer, Bertram Sydney; Fr.	Seattle
Lyon, Ethel Susan; So.	Ann Arbor, Mich.	Meyer, George F.; Sr.	Lind
McArthur, Anna Esther; Fr.	Entiat	Meyer, Rita; Fr.	Seattle
McBrawen, Vivian Thomas (Mrs.); Jr.	Seattle	Middleton, Una Belle; Sr.	Seattle
McCausland, T. Elizabeth; So.	Seattle	Mifflin, Wesley John; Fr.	Seattle
McCull, Nellie Natalie; So.	Spokane	Miles, Louise; Jr.	Seattle
McConnell, Mary E.; Jr.	Seattle	Miller, Glen William; Sr.	Tacoma
McCorkle, Mae D.; Sr.	Kelso	Miller, Herman E.; Fr.	Spokane
McCroskey, Eleanor; Fr.	Seattle	Miller, Margery; Sr.	Vancouver
McCroskey, Robert; Fr.	Sprague	Milligan, James N.; Fr.	Seattle
McDonald, D. Elwood; So.	Cheney	Milton, Fletcher R.; Jr.	Seattle
McDonald, Jerrine R. (Mrs.); Jr.	Spokane	Mines, Henry Walker; Fr.	Seattle
McDonald, Mary Kathryn; Fr.	Pocatello	Mitchell, John M.; Jr.	Seattle
McDonald, William Edward; Fr.	Kaliapell, Mont.	Mitchell, Hiram Sherman; Jr.	Astoria, Ore.
MacDougall, Minnie Fogg; Jr.	Seattle	Mitchell, Maize B.; So.	Sioux Falls, S. D.
McEuen, Marshall Lee; Jr.	Seattle	Mitchell, Neva Isabel; Jr.	Spokane
McGill, Vivian Jerauld; So.	Seattle	Miyasaki, Taichiro; Sr.	Seattle
McGinnis, Mary Catherine; Fr.	Waterville	Moberg, Clara Louise; Jr.	Seattle
McGrath, Anna Mae; So.	Pomeroy	Moe, Nettie Amelia; Sr.	Dupont
McGrew, Eleanor P.; So.	Seattle	Moen, Anna; Jr.	Bellingham
McInnes, John S.; Fr.	Wallace, Ida.	Moffett, Edith Pauline; Sr.	Seattle
McInnis, Merville Wayne; Fr.	Spokane	Mohr, Esther; Fr.	Seattle
McKibbin, Wilbur Blaine; Jr.	Colville	Monteague, Gwendolyn Anne; Fr.	Seattle
McKillop, Marjorie Leslie; Sr.	Seattle	Monteague, Vera U; Fr.	Seattle
McKinney, Grace Matthews; Sr.	Tacoma	Montgomery, Catherine; Jr.	Seattle
McKnight, John Emmett; So.	Seattle	Moore, Caroline; So.	Tacoma
McLaughlin, Gay Elizabeth; Fr.	Cosmopolis	Moore, Hope; Fr.	Seattle
McLaughlin, Goldie; Fr.	Seattle	Moore, Idelle Belle; Fr.	Seattle
McLean, Winfield A.; So.	Seattle	Moran, Charles Gilbert; Fr.	Spokane
McLennan, Margaret Isabel; Jr.	Seattle	Moran, Malcolm E.; So.	Rosario
McMillan, David E.; Fr.	Orin	Morehouse, Dorothy; Jr.	Seattle
MacNicol, Anna Elizabeth; Fr.	Buckley	Morford, Kenneth James; Jr.	Seattle
MacPherson, Lexie; Sr.	Seattle	Morford, Merle Edison; Fr.	Olympia
McQuown, Nell Lorena; Fr.	Buhl, Ida.	Morrill, Grace Eugenie; So.	Coupeville
Maas, Adele, Cecilia; Fr.	Port Townsend	Morris, Edward E.; Fr.	Olympia
Mack, Enid Adolph; So.	Seattle	Morse, Glenn E.; So.	Chelan
Macpherson, Kathryn Fraser; Fr.	Seattle	Moser, Celesta May; Fr.	Ellensburg
Madison, Viola Delphine; Fr.	Seattle	Moses, Helen Leona; So.	Portland, Ore.
Magowan, Thomas Ross; Fr.	Hot Springs, S. D.	Mulhern, Monica P.; So.	Penticton, B. C.
Mahoney, Vera; Fr.	Heppner, Ore.	Murphy, Harold Morris; Fr.	Arlington
Malpas, Ethel Mary; Fr.	Portland, Ore.	Murphy, Mildred Pauline; Fr.	Seattle
Mann, Marguerite; So.	Seattle	Muyskens, Henry; So.	Oak Harbor
Manning, Florence Mary; Fr.	Enumclaw	Myer, Edna Margaret; Sr.	Seattle
Mapes, Carl Herbert; Fr.	Seattle	Myhrman, Mattson, Andrew; Sr.	Purmo, Finland
March, Willis Charles; Jr.	Kaliapell, Mont.	Naismith, Helen A.; Jr.	Los Angeles, Cal.
Marchand, Leslie Alexis; Fr.	Bridgeport	Naughten, Beatrice Warren; Fr.	Butte, Mont.
Marks, Anne L.; Jr.	Seattle	Neal, W. Edwin; Fr.	Boise, Ida.
Marks, Stanley Anthony; So.	Douglas, Alaska	Nelson, Adlene R.; Sr.	Portland, Ore.
Marlowe, Myrtle D.; Jr.	Hartford, Kan.	Nelson, Agnes Eleanor; So.	Bellingham
Marot, Ada B. (Mrs.); Sr.	Kirkland	Nelson, Arthur Emil Laurent; Sr.	Seattle
Marquardt, Lucy Marie; Fr.	Port Angeles	Nelson, Helen; Sr.	Seattle
Marquette, Elizabeth; Jr.	Seattle	Nelson, Inez; Fr.	Aberdeen
Martin, Earl B.; Jr.	Seattle	Nelson, Lura; Fr.	Seattle
Martin, Isabel; So.	Seattle	Nelson, Leone; So.	Seattle
Martin, Leonora; So.	Seattle	Nelson, Lullius Livy Sydnor; So.	Seattle
Masatomi, Emile; Fr.	Spokane	Neswell, Mamie Evalyn; Jr.	Ferndale
Mason, Irma Ruth; Fr.	Seattle	Newman, Sarah Elizabeth; Fr.	Bellingham
Mason, Myrth; So.	Seattle	Nicol, Mary Stewart; Fr.	Hillsdale, Ore.
Masui, Leonard Goroku; So.	Seattle	Noren, Stanley; Fr.	Seattle
Matheson, Katherine; Sr.	Anacortes	Northfield, Walter D.; Fr.	Seattle
Matheson, Roy Grant; Fr.	Granum, Alberta	Norton, Elsie G. (Mrs.); Jr.	Seattle
Mathieu, Beatrice; Sr.	Seattle	Nusbaum, Westbrook Keith; So.	Emmett, Ida.
Matson, Eleveda; So.	Edison	Oathout, G. Marguerite; So.	Yakima
Mattox, Clifford Jarrett; Fr.	Ellensburg	O'Brien, Paul; Fr.	Conrad, Mont.
Mattson, Norma Claire; Sr.	Seattle	O'Brien, Phillis Margaret; Fr.	Seattle
Maxwell, Katherine Eldridge; Fr.	Casper, Wyo.	O'Brien, Robert Stewart; Fr.	Spokane
May, Martha H.; Jr.	Seattle	O'Callaghan, Claud V.; So.	Bonnars Ferry, Ida.
Mayes, Ruth; So.	Seattle	Odell, Ruth; So.	Spokane
Meade, Emily Hulse; Sr.	Seattle	Oehler, Charles Elmer; Jr.	Seattle
Meath, George Moorman; Fr.	Tacoma	Oertel, Ernest E.; So.	Seattle
Melnsnest, Darwin Mason; Jr.	Seattle	O'Hare, Marie Katherine; So.	Aberdeen
Melby, Muriel Esther; Fr.	Seattle	Olsen, Paul; Sr.	Seattle
Melkild, Mildred Eunice; Sr.	Seattle	Olson, Edward Norman; Fr.	Seattle
Mendenhall, Katherine Estella; Fr.	Seattle	Olson, Lillian Eleanor; Fr.	Mount Vernon
Meneely, Alexander Howard; Fr.	Seattle	Osawa, Yuki Geda; Sr.	Seattle
Menzel, Walter Henry; So.	Everett	Ostensen, Harold Birge; Fr.	Bremerton

<i>Name of Student and Rank</i>	<i>Home Address</i>	<i>Name of Student and Rank</i>	<i>Home Address</i>
Ostrander, Raymond E.; Fr.	The Dalles, Ore.	Riat, Dorothy Eugenia; So.	Yakima
Ostrow, Roland Harold; Fr.	Seattle	Ristine, James R.; Fr.	Coupeville
Oswalt, Flora Rice (Mrs.); —	Seattle	Robb, Opal; Fr.	Seattle
Otsuki, George Jogi; Sr.	Seattle	Robe, Dorothy Cecil; Jr.	Snoqualmie
Overlock, Frances Clyde; Fr.	Kent	Robinson, E. Frances; So.	Lilliwaup
Owen, Evelyn; So.	Seattle	Robinson, Laura; Jr.	Everett
Page, Elvie Belle; Jr.	Olympia	Robinson, Stella Marcia; Fr.	Plains, Mont.
Palm, Roy Axel; So.	Seattle	Rogers, Florence Alleen; So.	Spokane
Parker, Catherine Anna; Jr.	Seattle	Rohden, Elizabeth Helen; So.	Belleuve
Parker, George Burnett; Sr.	Tacoma	Rohr, Gertrude; Sr.	Astoria, Ore.
Parker, Marie Nancy; Fr.	Seattle	Rose, Florence Lauretta; Fr.	Seattle
Parker, Samuel; So.	Seattle	Rosebaum, Dwight A.; So.	Waveland, Ind.
Parker, William Arthur; Jr.	Seattle	Roseleaf, Dorothy; Jr.	Seattle
Parsons, Rosamond; Sr.	Seattle	Rosenstein, Julie; Jr.	Seattle
Patten, Ethel Mae; Jr.	Seattle	Ross, Charlotte Mackie; Fr.	Bremerton
Patton, Harry Allen, Jr.; Fr.	Seattle	Ross, Gordon Burwell; Fr.	Yakima
Payne, Bryan Watson; Fr.	Tacoma	Ross, Marian Elizabeth; Sr.	Hoquiam
Pease, Paul E.; So.	Tacoma	Roth, Alfred Harris; So.	Livingston, Mont.
Perry, Francis W.; Sr.	Selah	Royce, Ruby; Fr.	Seattle
Perry, Isabel; So.	Van Buren	Roys, Ruby; Jr.	Seattle
Peterson, Ernest V.; Fr.	Spokane	Rucker, Philip Wallace; Fr.	Seattle
Peterson, Frank; Fr.	Wenatchee	Ruppenthal, Anna B.; Sr.	Elliotia
Peterson, Frank Lynn; Sr.	Seattle	Russell, Beulah; Sr.	Seattle
Peterson, Wallace; So.	Seattle	Ryerson, Hilma Clare; Fr.	Dayton
Pettitt, Mabel Florence; So.	Seattle	Rynning, Karen; Fr.	Tacoma
Peyster, Ethan Allen; Fr.	Cedarhurst	Sandborn, Elizabeth K.; Jr.	Blue Rapids, Kan.
Pelphs, Grace Marie; Fr.	Dryad	Sandborn, Grace Mildred; Fr.	Blue Rapids, Kan.
Phillips, James Commons; So.	Seattle		
Phillips, Norris W.; So.	Seattle	Sanders, Alvis Monroe; Jr.	Spokane
Pickrell, Evelyn Ann; So.	Spokane	Sands, Margery; Fr.	Seattle
Pierrot, George Francis, Jr.; Jr.	Seattle	Sater, Gertrude Pauline; Sr.	Seattle
Pinney, Marcus Johnson; Fr.	Ontario, Ore.	Sauers, Esther Azel; Fr.	Hoquiam
Pitt, Mildred Esther; Jr.	Seattle	Saunders, John M.; Jr.	Seattle
Platt, Gladys Hope; So.	Idaho Falls, Ida.	Schafer, Dorothy S.; Fr.	Portland, Ore.
Playter, Mirie Denison; Jr.	Seattle	Schlichting, William George; So.	Davenport
Ponder, Russell Lee; Fr.	Chehalis	Schreiner, Gertrude Mary; Sr.	Seattle
Pool, Eason; Fr.	Wenatchee	Schuet, Marjorie Claire; Fr.	Seattle
Porter, Frances Rice (Mrs.); Sr.	Seattle	Schweltzer, Florence Ione; Fr.	Seattle
Powell, Janet Elizabeth; Jr.	Seattle	Scott, Agnes E.; So.	Yakima
Powell, Rei Harold; Fr.	Prineville, Ore.	Scott, Walter Leon; So.	Harrington
Powers, Alvin J.; Jr.	Parma, Ida.	Scougall, Laura; So.	Seattle
Powers, Marie Kraft; Fr.	Seattle	Scovill, Alice Corrine; Fr.	Scenic
Powlison, Lucile Alice; So.	Seattle	Seddon, Stanley; Fr.	Roslyn
Pratt, Helen Van Ness; Jr.	Seattle	Selbert, Rachel Margaret; Fr.	Seattle
Pratt, Le Roy, Jr.; So.	Tacoma	Servis, Helen Louisa; So.	Seattle
Prestco, Isabel Virginia; So.	Seattle	Settle, Edith; Jr.	Kelso
Presley, Dorothy; So.	Seattle	Severns, Edwin Ellsworth; Sr.	Chehalis
Presto, Gladys May; Fr.	Seattle	Shafer, Walter Robert; So.	Tacoma
Prior, Ruby Gabrielle; So.	Seattle	Shank, Katherine; Fr.	Seattle
Proctor, Muriel Esther; Sr.	Seattle	Shanks, Carroll Meter; Fr.	Payette, Ida.
Protzman, George Percy; Fr.	Omak	Sharpe, Ruth; Sr.	Seattle
Prouty, Alva; Fr.	Boise, Ida.	Shaver, Benina; Fr.	Nampa, Ida.
Pumphrey, Veronica; Fr.	Seattle	Shearer, Robert Fred; Fr.	Seattle
Purdy, Ella Josephine; Fr.	Everett	Shepherd, Paul Clark; Sr.	Seattle
Quast, Iola; Sr.	Seattle	Sherk, George Barton; Fr.	Kennewick
Quigg, John W.; So.	Seattle	Shindel, Maurice Harry; Fr.	Seattle
Rafiah, Mary Leah; Fr.	Butte, Mont.	Shorrock, Hallam C.; Fr.	Seattle
Ranning, Mildred Lauretta; Fr.	Seattle	Short, Esther Lorinda; Jr.	Cle Elum
Rasmussen, Violet M.; Jr.	Seattle	Shotwell, Bertha Suzanne; Fr.	Wenatchee
Rawls, Viola; Jr.	Seattle	Shotwell, Catherine M.; Jr.	Seattle
Ray, Doris; So.	Yakima	Schultz, Janet Mae; Fr.	Seattle
Reed, Hazel; Jr.	Spokane	Sielk, George Jacob; So.	Spangle
Rensberg, Helen; Fr.	Seattle	Sielk, William Henry; Fr.	Spangle
Rennie, George Dewey; Fr.	Spokane	Sigmond, Arthur; Fr.	Philadelphia, Pa.
Rens, Genevieve; Fr.	Seattle	Silverstone, Herschel; Fr.	Seattle
Reynolds, Ada Thompson (Mrs.); Jr.	Seattle	Simon, Rebecca Henriette; Fr.	Butte, Mont.
Reynolds, Ollie Mildred; Jr.	Seattle	Simonds, Esther; Sr.	Bothell
Rice, Edith Allegra; So.	Yakima	Simpson, Lurline Violet; Fr.	Seattle
Rice, Margaret Dorothea; So.	Prosser	Sitton, Louise; So.	Seattle
Rice, Marie Margaret; Fr.	Grandview	Skartvedt, Lola Cordelia; Fr.	East Stanwood
Rice, Mary Levona; Jr.	Tacoma	Slauson, Ruth Irvine; So.	Portland, Ore.
Richards, Dorothy; So.	Puyallup	Small, Adele; Jr.	Seattle
Richardson, Otis D.; Fr.	Yakima	Smallwood, Gladys Nelsine; Sr.	Seattle
Richmond, Leland; Fr.	Walla Walla	Smith, Arnold G.; So.	Seattle
Richter, Ella Paula; Jr.	Tacoma	Smith, Darrell Baldwin; Fr.	Stellacoom
Riddle, Ernest T.; Fr.	Seattle	Smith, Elfreda Allen; So.	Seattle
Riddle, Helen Jane; Sr.	Seattle	Smith, George Mims; Jr.; Fr.	Seattle
Rieger, Franklin Thomas; Fr.	Payette, Ida.	Smith, Gladys Lucile; So.	Seattle
Riehm, Helen; Jr.	Dockton	Smith, Gretchen Harriett; So.	Everett
Rind, Rudia; So.	Seattle	Smith, John Allaude; So.	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Smith, Herndon; Fr.	Seattle
Smith, Merle Homer; Fr.	Spokane
Smith, Otto F.; Fr.	Great Falls, Mont.
Smith, Phoebe Louise; Fr.	Seattle
Smith, Sybil; Fr.	Seattle
Snider, Charles Claude; Jr.	Seattle
Snoddy, Esther; So.	Kansas City, Mo.
Soelberg, Adene Harriet; Fr.	Seattle
Solid, Minda R.; Jr.	Coupeville
Soloman, Hyman; Fr.	Seattle
Southwick, Glen Harold; Fr.	Chelan
Speir, James H.; Fr.	Seattle
Stahlhut, Verna; Jr.	Sunnyside
Stanley, Maxine; Jr.	Tacoma
Stanton, Mattie A.; So.	Seattle
Starin, Joseph; Fr.	Seattle
Starr, Evangeline; Sr.	Seattle
Stearns, Nellie; Fr.	Hartford
Stein, Waldemar L.; Sr.	Seattle
Steiner, Barbara Golden; So.	Salem, Ore.
Stephenson, Edith Frances; So.	Portland, Ore.
Stevens, A. Grant; Fr.	Seattle
Stevens, Anna L.; Jr.	Seattle
Stevens, Edith Francis; So.	Seattle
Stevens, Frank K.; Fr.	Victoria, B. C.
Stevens, Jean Glen; Fr.	Portland, Ore.
Stockey, Marion Ruth; So.	Bothell
Stiles, Sara Frances; Jr.	Seattle
Stone, Ludwig John; So.	Marshfield, Ore.
Stone, Mildred Catherine; Fr.	Spokane
Stoner, Lillian U.; Sr.	Osceola, Neb.
Story, Mary Caroline; Jr.	Victoria, B. C.
Stranack, Janet Katharine; Fr.	Seattle
Strande, Alfred; So.	Seattle
Strong, Lloyd Christy; So.	Bellevue
Sturges, Demetrius D.; Fr.	Spokane
Stusser, Leslie; Jr.	Tacoma
Summers, Doris Edith; Jr.	Seattle
Summy, Isabel Jean; Fr.	Seattle
Summer, Muriel; Fr.	Seattle
Sundquist, Leonia; Sr.	Mount Vernon
Sundstedt, Alice Marion; So.	Seattle
Sutherland, Glenn A.; Fr.	Endoline
Sutthoff, Helen Katherine; So.	Seattle
Swann, Margaret; Fr.	Seattle
Swanson, Edward B.; Sr.	Tacoma
Sward, E. Merrill; So.	St. Paul, Minn.
Swartz, Gladys; Fr.	Seattle
Swartz, Matilda; Jr.	Spokane
Taylor, Dorothea; Sr.	Seattle
Taylor, Grace Gladys; So.	Seattle
Tennant, Grace Bernyse; So.	Seattle
Terrell, Mary; Fr.	Seattle
Thelsen, Arthur; Jr.	Seattle
Thomas, Christine; Sr.	Seattle
Thomas, Donald Partridge; Fr.	Seattle
Thomas, Dorothy N.; So.	Seattle
Thomas, Irene; Fr.	Bellingham
Thomas, Ruth Rebecca; Fr.	Port Blakely
Thompson, Catherine; Fr.	Pendleton, Ore.
Thompson, Mildred I.; Fr.	Portland, Ore.
Thompson, Thelma; Fr.	Pendleton, Ore.
Thompson, Whitney Freer; Fr.	Orting
Thomson, Frances Clifton; Fr.	Seattle
Thornburg, Mildred Mercy; Jr.	Seattle
Thorsen, Paul; Fr.	Seattle
Thorsland, Delmont Samuel; Fr.	Sprague
Tinling, Gertrude Jean; So.	Seattle
Totten, Morrell Phelps; Fr.	Seattle
Townsend, S. Frank; Fr.	Seattle
Trawick, Margaret Phillips; Fr.	Seattle
Tremper, Edward Payson; Jr.	Seattle
Trenholme, Ruth; Fr.	Seattle
Tripl, Joseph; Fr.	Seattle
Tromp, Theresa; Sr.	Seattle
Trow, A. Palmer; So.	Ontario, Ore.
Troy, Helen Marion; Fr.	Juneau, Alaska
Trumbull, J. Jonathan; Fr.	Seattle
Tucker, Gladys M.; So.	Seattle
Tucker, Josephine Olive; Jr.	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Tucker, Ruth Elisabeth; Sr.	Seattle
Turnell, Ruth Eunice; Fr.	Yakima
Turner, Ellen M.; Sr.	Seattle
Turner, Howard Rees; Fr.	Walla Walla
Turner, Laura Ann; So.	Oshkosh, Wis.
Turner, Roy Paris; Fr.	Chewelah
Uchikata, Henson A.; Sr.	Japan
Ulleland, Astrid Olive; Jr.	Kent
Underwood, Hugh Coleman; Fr.	Seattle
Upton, Charles Millar; Fr.	Seattle
Upton, Earl E.; Fr.	Black Diamond
Upton, Florence Elizabeth; Fr.	Black Diamond
Vandiver, Jesse B.; Fr.	Okanogan
Van Engelen, Jennie; Sr.	Centralia
Van Liew, Gertrude (Mrs.); Fr.	Seattle
Van Sicklin, Nina; Jr.	Welsler, Ida.
Verd, Emma; Fr.	Seattle
Verd, Ruth; Fr.	Arlington
Veysey, Mary Isabel; So.	Montesano
Vincent, Eugene Garfield; Fr.	Portland, Ore.
Vining, Marie; Sr.	Seattle
Vining, Marjory Claire; Fr.	Seattle
Virtue, Eloise Beach; Jr.	Seattle
Von Kettler, Wanda Fredericka Hild- garde; Fr.	Seattle
Wabrushek, Robert; Fr.	Seattle
Waechter, William Gerold; Fr.	Seattle
Wagner, Florence Minerva; Fr.	Sequim
Waite, Vera Beatrice; Sr.	Seattle
Wakefield, Volney B.; Jr.	Seattle
Walker, Nina Ruth; Fr.	Seattle
Wallace, Clara Louise; Jr.	Seattle
Walshaw, Forbes John; Fr.	Seattle
Walther, Winifred Edna; Fr.	Seattle
Ward, Victor; Fr.	Everett
Watson, Anna Elizabeth; Fr.	Seattle
Watson, Jean Ferguson; So.	Seattle
Weaver, Geneta Prudence; Fr.	Seattle
Weaver, Grace Elizabeth; Jr.	Seattle
Weaver, Una Ellen; So.	Seattle
Weixel, Besse; Sr.	Seattle
Welts, Florence; Sr.	Mount Vernon
Wenner, C. Stanley; So.	Yakima
Westin, Alvin E.; Fr.	Seattle
Wetherby, Harold J.; Fr.	Tacoma
Weythman, Ruth; Fr.	Monitor
Wheeler, Gladys Fidele; Sr.	Seattle
Wheeler, James Addison; Fr.	Seattle
White, Marion Irene; Fr.	Laclide, Ida.
White, Marjorie; Sr.	Seattle
White, Phillip Lewis; Fr.	Oakville
White, Wesley Fechter; Fr.	Seattle
Whitehead, Francis Virgil; Jr.	Seattle
Whitelaw, Marjorie Campbell; So.	Seattle
Whitlock, Maryhelen; So.	Los Angeles, Cal.
Wienand, Carl Marcus; Fr.	Seattle
Wiesenbach, Ward Osman; So.	Richland
Wiggins, Charles Kaufman; So.	Portland, Ore.
Wiggins, Mildred; Jr.	Toppenish
Willbur, Edward Perry; So.	Seattle
Williams, Florence B.; Fr.	Yakima
Williams, George Otis; So.	Seattle
Williams, Ross Perry; Fr.	Seattle
Willis, Cecil D.; Fr.	Seattle
Wilson, Carl K.; Jr.	Seattle
Wilson, Evelyn; Sr.	Seattle
Wilson, Glen Evans; So.	Seattle
Wilson, Lena Evelyn; Jr.	Grandview
Wiman, Fred S.; Fr.	Portage
Winslow, Gladys L.; Fr.	Colville
Winter, Charlotte Lucille; So.	Los Angeles, Cal.
Winter, Katharine; So.	Everett
Winter, Vonja; Jr.	Everett
Wise, Dorothy Lenore; So.	Hoquiam
Wolf, Katherine; So.	Elberton
Wong, Hokkan; So.	Portland, Ore.
Woo, May; Fr.	Seattle
Wood, Leighton Howard; Fr.	Seattle
Wood, Paul Wallingford; Fr.	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>	<i>Name of Student and Rank</i>	<i>Home Address</i>
Woodard, Walter Ross; Fr.....	Loomis	Wrigglesworth, Luther; Fr.....	Chehalis
Woodward, Harriet; So.....	Seattle	Wright, Charlotte H.; Sr.....	Ellensburg
Woolpert, Oram C.; Fr.....	White Salmon	Wright, Gill Cowan; Fr.....	Richland, Ore.
Woolpert, Ruth; So.....	White Salmon	Wright, Ruth H.; Jr.....	Seattle
Woolsey, E. Fay; Fr.....	Seattle	Youell, Miriam; Fr.....	Portland, Ore.
Worboys, Helen Monfort; Fr.....	Seattle	Zacharias, Rose L.; Jr.....	Seattle
Worsham, Mary Lavinia; Jr.....	Evansville, Ind.	Zimmerman, Mary Lucile; Fr.....	Tono
Wrenthmore, Salena Elizabeth; Fr.....	Manila, P. I.	Zobrist, Mildred Elizabeth; Jr.....	Acme

## UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>	<i>Name of Student</i>	<i>Home Address</i>
Abrams, Inez Ruth.....	Seattle	Knowlton, Marian Ruby.....	Seattle
Aitchison, Marion.....	Spokane	Knudsen, Einar Mangus.....	Seattle
Akiyama, Riaki.....	Japan	Koetter, Elinor Ann.....	Seattle
Allen, Hazel.....	Seattle	Komoriyu, Tsuruya.....	Tokyo, Japan
Allen, Lorraine.....	Seattle	Lanning, Arnold Burdette.....	Missoula, Mont.
Anderson, F. Robert.....	Spokane	Lea, Margaret Josephine.....	Seattle
Arkley, Helen.....	Tacoma	Leech, Frank Clyan.....	Conrad, Mont.
Arnold, Eugene Kirkman.....	Seattle	Lipscomb, Pearl Irene.....	Seattle
Baltzer, Eugene Christian.....	Seattle	Loomis, Joseph M.....	Forest Grove, Ore.
Banks, Hugh Thomas.....	Tacoma	Ludgate, Alice May.....	Seattle
Barclay, Frances Esther.....	Seattle	Lurie, Rosabelle.....	Seattle
Beard, Dorothy Mae.....	Vancouver	MacGowan, Clara.....	Seattle
Benas, Clarisse Helen.....	East Seattle	MacLean, Katherine.....	Seattle
Benthien, Elsie Marie.....	Tacoma	McLeod, Helen Mary.....	Seattle
Betts, Genevieve Dillaye.....	Seattle	McMillan, William Marcus.....	Colville
Black, Dorothy Ernestine.....	Ellensburg	Madsen, Albert.....	Tacoma
Blumenthal, Rose.....	Seattle	Mathies, Silas F.....	Pomeroy
Britton, Hazel Margaret.....	Spokane	Maxwell, Bernice Erma.....	Seattle
Brown, Edith Olivia.....	Friday Harbor	Mehan, Lewis.....	Roy
Brown, Elgar Arthur.....	Auburn	Milks, Gladys Irene.....	Seattle
Brown, Ruth Pitman.....	Ashland, Ore.	Milner, John William.....	Seattle
Burdick, Esther Caroline.....	Seattle	Mitsunaga, Taiyu.....	Japan
Byrd, Bvelyn Lenore.....	Burns, Ore.	Mittelstadt, Anne.....	Seattle
Campau, Clifton Read.....	Seattle	Moran, Jessie.....	Seattle
Carter, Myrtle May (Mrs.).....	Seattle	Mottelson, Aaron.....	Butte, Mont.
Clark, Evva.....	Bellingham	Mullaney, Frances Marie.....	Tenino
Cochrane, Mavis Claire.....	Seattle	Munson, Richard Munrad.....	Seattle
Cook, Jennie Nixon.....	Burns, Ore.	Murray, Valois Agnes.....	Seattle
Cowell, Maude Nancy.....	Seattle	Ney, Esther, Marie.....	Seattle
Cunningham, Cregh James.....	Everett	O'Farrell, Kathleen.....	Seattle
Cunningham, Edith.....	Tacoma	O'Neill, Agnes Virginia.....	Spokane
Danielson, June Marie.....	Parkland	Paulhamus, Caroline.....	Sumner
Davis, Grace.....	Tacoma	Pearson, Audrey Belle.....	Yakima
Demro, Grace Winifred.....	Seattle	Perry, Dorothy Margery.....	Seattle
Dysart, Fern May.....	Seattle	Phillips, May A.....	Seattle
Eckart, W. Roland.....	Seattle	Pinkham, Ada D. (Mrs.).....	Seattle
Eckmann, Stella Rosena.....	Yakima	Powers, Irvin F.....	Parma, Ida.
Ehrlichman, Bertha.....	Seattle	Prettegiani, Mary J.....	Seattle
Eklund, Abel.....	Seattle	Puckett, Deyo Frances.....	Whitehorse, Y. T., Canada
Felitz, Vermita Caroline.....	Seattle	Ratcliffe, Kent E.....	Cheney
Finstrom, Carrie.....	Seattle	Richmond, Agnes N.....	Benton
Fleming, Geravere Helen.....	Portland, Ore.	Robertson, Cynthia.....	Seattle
Flumerfelt, Stephen.....	Seattle	Rodder, Abe L.....	Livingston, Mont.
Foster, Gilbert Branscombe.....	Spokane	Roadiger, Dorothy.....	Tacoma
Hall, Fleta.....	Pendleton, Ore.	Roon, Edna Elizabeth.....	Bellevue
Hall, Roy Jennings.....	Olympia	Russell, Rosa E.....	Oblong, Ill.
Hall, Verne Ruth.....	Seattle	Scheidt, Herbert Edmund.....	Hillsboro, Ore.
Henderson, Nell Frances.....	Seattle	Schindler, Lydia Jacqueline.....	Tacoma
Hendricks, Robert John.....	Gresham, Ore.	Schoenauer, Irene.....	Snohomish
Hieck, Baulah Grace.....	Bloomington, Wis.	Segel, Manuel M.....	Seattle
Hindle, Mildred Eleanor.....	Seattle	Shannon, George Edward.....	Spokane
Howe, Rose F.....	Seattle	Slye, Blanche.....	Yakima
Huff, James B.....	Yakima	Smith, Helen M. C. Cope.....	Seattle
Hummer, Helen Belle.....	Seattle	Smith, Max Nathan.....	Boise, Ida.
Irving, Margaret Jesse.....	Seattle	Smith, Stanford Valentine.....	Kalispell, Mont.
Jackson, Dorothea Mignonette.....	Seattle	Sohns, Clinton Elwell.....	Spokane
Jackson, Marian Louise.....	Seattle	Spannagel, Grace Howe.....	Tacoma
Jacobs, Emil Clayton.....	Yakima	Stuart, MacClelland.....	Seattle
Johnson, G. Adolph.....	Lake Bay	Sumbardo, Romea.....	Seattle
Johnson, Rodney Vivian.....	Fairbanks, Alaska	Swearingen, Daphne.....	Pendleton, Ore.
Jones, Grace.....	Seattle	Taylor, Margaret Mary.....	Baumclaw
Jones, Zenith Watkins.....	Seattle	Thompson, Aletha.....	Bellingham
Kellogg, Margaret Elizabeth.....	Los Angeles, Cal.	Totten, Vera Adalina.....	Spokane
Keasinger, Jennie Elizabeth.....	Seattle	Truebridge, John Kenneth.....	Tacoma
Kiefer, Lois.....	Seattle	Upton, Beatrice Margaret.....	Billings, Mont.
Kiehl, Miriam.....	Seattle	Van Patten, Paul.....	Ontario, Ore.
Kipp, Letha Julia.....	Seattle		

<i>Name of Student</i>	<i>Home Address</i>
Van Sicklin, Grace Mary	Welsler, Ida.
Vick, Huldah M.	Everett
Walker, Blanche D.	Kallispell, Mont.
Walker, Phyllis Harriet	Kallispell, Mont.
Waller, Donald G.	Seattle
Walter, Ruth H.	Portland, Ore.
Webb, Admiral Dewey	Wenatchee

<i>Name of Student</i>	<i>Home Address</i>
Wenner, Harriett Ann	Okanogan
Weston, Merle Millicent	Sacramento, Cal.
Weymouth, Blanche Noemi	Los Angeles, Cal.
White, H. Newman	Tacoma
Whitham, Myrtle	Seattle
Williams, Florence Marie	Gladstone, Ore.
Zamberlin, Carl	Olympia

## SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Benton, Paul A.	Seattle
Bergman, Florence Ozalla	Minneapolis, Minn.
Bordeaux, Russell	Seattle
Brewster, Pearl E.	Seattle
Brilliant, Albert	Seattle
Brown, N. Earl	Seattle
Bundy, Thomas Walter	Seattle
Burns, Frank B.	Seattle
Cahill, Mona	Chicago, Ill.
Carey, Henry Ames	Seattle
Cheatham, Selma	Seattle
Childs, Etta S. (Mrs.)	Seattle
Chisholm, Anne (Mrs.)	Seattle
Civish, Roy	Seattle
Clowes, Theodore Miles	Nome, Alaska
Colson, Belle Tyler	Seattle
Doherty, William Ernest	Seattle
Donahoe, Clara (Mrs.)	Seattle
Dowd, Dollie	Seattle
Ducasse, Neta	Seattle
Dunmore, Blanche	Seattle
Farmer, Ernest M.	Seattle
Fjaestad, Oke S.	Seattle
Flodin, Hazel May (Mrs.)	Seattle
Folk, Katherine B. (Mrs.)	Seattle
Foster, Howard Ellsworth	Seattle
Goodmanson, Hattie	Point Roberts
Johnson, George Childs	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Kane, Susan M.	Seattle
Karr, Day	Seattle
Laftman, A. G.	Seattle
Lewis, May	Seattle
Lingerman, Chauncey B.	Tacoma
Lyons, Charles T.	Seattle
McGill, Kittle Alice	Seattle
McIntosh, Elizabeth	Seattle
Martin, Mabel (Mrs.)	Seattle
Mendell, Caroline A.	Parsons, Kan.
Mills, Loren H.	Seattle
Moran, Albert J.	Seattle
Norton, Farris	Seattle
Norton, Rose Lee	Seattle
Ober, R. H.	Seattle
Peterson, Grace Howard	Seattle
Pond, Frank W.	Seattle
Stevensen, Lillie	Tacoma
Talmage, Pauline (Mrs.)	Portland, Ore.
Theodoro, Leopold F.	Santa Cruz, P. I.
Tibbels, Ursula	Bellingham
Van Doren, Martha (Mrs.)	Seattle
Walsh, George M.	Seattle
Webb, Verna Joyce	Seattle
White, Eugenia D. (Mrs.)	Seattle
Wilson, Emma J.	Seattle
Winn, Margaret Ellen	Seattle
Zan, Jewel Spencer (Mrs.)	Seattle

## College of Science

## ABBREVIATIONS

## CLASSES

Sr.—Senior  
Jr.—JuniorSo.—Sophomore  
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Abel, Lena Blanche; So.....	Montesano
Adam, Ralph; Fr.....	Hamilton
Allen, Beatrice Vergne; Fr.....	Seattle
Allen, Glenn Allica; Fr.....	Seattle
Allen, Mabel D.; So.....	Vancouver, B. C.
Anderson, R. Dorothy; Jr.....	Seattle
Anderson, Ray H.; So.....	Mount Vernon
Anderson, Rubert S.; So.....	Mount Vernon
Armstrong, Grace; Sr.....	Silvana
Atkin, Irene M.; Jr.....	Seattle
Ayers, Pearl; Fr.....	Wapato
Baker, Dorothy Jessa; So.....	Seattle
Baker, Florence A.; Fr.....	Seattle
Baker, Ruth Evangeline; Fr.....	Tacoma
Belknap, Wilford Hall; Jr.....	Prineville, Ore.
Berg, Gunnar Hansen; Fr.....	Kelso
Bergman, Eugene Elroy; Fr.....	Port Angeles
Bergren, Evelyn; Fr.....	Seattle
Bernhelm, Martha Julia; Fr.....	Spokane
Bissett, Rudolf Alfred; Fr.....	Vancouver, B. C.
Blumenfeld, Zipora B.; Fr.....	Seattle
Bodmer, Stella Nason; So.....	La Grande, Ore.
Boll, John; Jr.....	Seattle
Bolton, Wilbur Minnis; Fr.....	Antelope, Ore.
Boyce, Yeaser Arthur; So.....	Toledo
Bradley, Blythe Anita; Sr.....	Seattle
Brawnner, Nancy Everett; Fr.....	Livingston, Mont.
Brooks, Mildred; Sr.....	Bremerton
Brown, Earl T.; Sr.....	Centralla
Brown, Warren; So.....	Wilkesbarre, Pa.
Browne, M. Catherine; Fr.....	Selah
Burgess, Henrietta; So.....	Seattle
Burke, Florence J.; So.....	Anaconda, Mont.
Buschmann, Trygve Wedege; Sr.....	Seattle
Butcher, Bessie E.; Sr.....	Seattle
Byers, Kathryn; Jr.....	Seattle
Callahan, Mary Aletha; Fr.....	Mount Vernon
Cameron, Marion Brownlee; Sr.....	Port Huron, Mich.
Camp, Dorothy F.; Fr.....	Seattle
Campbell, Esther Mary; Jr.....	Seattle
Carlson, Agnes Naomi; Sr.....	Seattle
Carr, Eva Sabine; Fr.....	Selah
Chalmers, Isabel; Fr.....	Forest Grove, Ore.
Chamberlain, Percy Ira; So.....	Seattle
Chambreau, Wynifred Kurtz; Fr.....	Portland, Ore.
Church, Mabel Minerva; Sr.....	Pocatello, Ida.
Clarke, Ellnor; So.....	Seattle
Clarke, Margaret; Fr.....	Auburn
Claypool, John Cowles; So.....	Seattle
Collins, Nancy Elizabeth; Fr.....	Spokane
Covland, Lenore M.; So.....	American Lake
Colman, Kenneth B.; Fr.....	Seattle
Colton, Grace Edith; Jr.....	Seattle
Conboy, Carol Clara; Fr.....	Denver, Colo.
Condon, Dorothy; Jr.....	Port Gamble
Cooper, Evelyn Frances; Sr.....	Seattle
Cooper, Rebecca; Fr.....	Seattle
Corbett, Donald Glenn; Fr.....	Seattle
Corey, Esther M.; Jr.....	Tacoma
Corsike, Florence Beryl; Fr.....	Seattle
Countryman, Adele Eva; So.....	Methow
Crowder, Harriet L.; Fr.....	Seattle
Dammann, Marjorie Luse; So.....	Parkland
Davis, Dorothy Carvel; Fr.....	Seattle
Desmond, Margaret R.; Sr.....	Tacoma
Dickson, Florence Finch; So.....	Seattle
Dodge, Alice; Jr.....	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Dodge, Mildred Laura; So.....	Portland, Ore.
Dudley, Adele Lila; Fr.....	Mullan, Ida.
Dufall, Esther Frances; So.....	Tacoma
Dulgar, Gladys M.; Jr.....	Raymond
Eckhart, Robert Balsar; Fr.....	Enumclaw
Eckmann, Myrtle; Jr.....	Yakima
Einarson, Arthur Skogman; Fr.....	Stanwood
Elitel, George David; So.....	Seattle
Elliott, Mary Elisabeth; So.....	Walla Walla
Ellsworth, Paul; Jr.....	Seattle
Ennis, C. Owen; Fr.....	Three Forks, Mont.
Enyart, Grace May; Jr.....	Seattle
Farloy, Helen Maria; Fr.....	Seattle
Farrall, Nellie Russella; So.....	Seattle
Faubert, Alice M.; So.....	Seattle
Fay, Helen Frances; Fr.....	Seattle
Fisher, Eunice Helen; So.....	Kirkland
Foreman, Byron; So.....	Tacoma
Fraser, Alice Rosena; Sr.....	Burlington
Friars, Lola E.; Jr.....	Tacoma
Galligan, Glendon; So.....	Everett
Garratt, Eugenia Enid; Jr.....	Seattle
Garvey, Edmund J.; Jr.....	Seattle
Gearhart, Esther; Sr.....	Astoria, Ore.
Gilbert, Lois Marion; Sr.....	Yakima
Gilliland, William Lester; So.....	Harrington
Gilluly, James; So.....	Seattle
Gilman, Margaret Ethel; So.....	Seattle
Glenn, Margaret Ethel; So.....	Seattle
Goldsmith, Agnes A.; Fr.....	Tacoma
Good, Jane; Sr.....	Mount Vernon
Good, Stewart; Fr.....	Seattle
Goode, Helen Genevive; Jr.....	Hillyard
Goodenow, Curtis Halkier; Fr.....	Everett
Gray, Josephine; Fr.....	Arlington
Gregg, Ralph; So.....	Coulee City
Griffiths, Marion Alice; Sr.....	Yakima
Gunn, Elizabeth; Fr.....	Seattle
Gunn, Marjorie; So.....	Seattle
Gwilym, Cecll May; Fr.....	Seattle
Hague, Sigmund; Jr.....	Livingston, Mont.
Haley, Louisa; Fr.....	Seattle
Hamilton, Alleen Ames; Sr.....	Seattle
Harper, Le Roy; Fr.....	Seattle
Harrison, Catherine Elizabeth; Fr.....	Seattle
Harshman, Gertrude; Jr.....	Fall City
Hauck, Hazel Marie; Fr.....	Seattle
Haugum, Cyrus James; Sr.....	Seattle
Haworth, Elizabeth; Fr.....	Seattle
Hearne, Ruby D.; Fr.....	Goldthwaite, Tex.
Helmich, Merle L.; Fr.....	Yakima
Hendricks, Ruth Gladys; Fr.....	Seattle
Heywood, Carrie Agnes; So.....	Burke
Hicks, Donald Erwin; Fr.....	Lewiston, Ida.
Hicks, Harvard R.; So.....	Spokane
Higgs, Paul McClellan; Jr.....	Pine City
Hillis, Arnetta; Sr.....	Seattle
Hinman, Charles Lee; Fr.....	Yakima
Holman, Zelma; Sr.....	Tacoma
Holway, Esther Rose; Fr.....	Seattle
House, Louise Osceola; So.....	Port Townsend
Howes, Jessie; Jr.....	Hood River, Ore.
Huffard, Luzerne Edson; Fr.....	Seattle
Hughes, Anne; Sr.....	Osborn, Mo.
Hulburd, Marguerite Gassle; So.....	Lynden
Hurley, Douglas C.; So.....	Pecatonica, Ill.
Hutchinson Ruby Margaret; Fr.....	Mount Vernon
Indrison, Emma; Fr.....	Port Townsend
Inkster, Harry; Fr.....	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>	<i>Name of Student and Rank</i>	<i>Home Address</i>
Jackson, Edna Cosby; Jr.	Edison	Paust, Edna L. Berta; Jr.	Seattle
Jayne, Sadie Merrill; Fr.	Idaho Falls, Ida.	Pearson, Earl C. H.; Fr.	Mount Vernon
Jeans, Mildred; Sr.	Earlington	Peden, Barton Edward; Fr.	Yakima
Johnson, Ethel Helen; Sr.	Seattle	Pelz, Irma; Fr.	Seattle
Johnson, Harold Irwin; Fr.	Spokane	Pepper, Echo; So.	Seattle
Johnson, Martha R.; Sr.	Seattle	Peterson, Gladys Lorraine; Fr.	Eagle Bend, Minn.
Johnson, Ursula; So.	Seattle	Pettitt, Florence Elisabeth; Fr.	Port Angeles
Kahler, Herbert; Sr.	Tacoma	Payton, Eleanor Louise; So.	Spokane
Karrer, Rosella Mae; So.	Seattle	Phelps, Vera May; Fr.	Dryad
Kellner, Chester; Fr.	Hamilton	Phillips, Gertrude Anne; Sr.	Seattle
Kellogg, Avis Marguerite; Fr.	Seattle	Pieroth, John Philip; So.	Ellensburg
Kennedy, Mabel Josephine; Sr.	Tacoma	Pierrot, Marjorie; Sr.	Skamokawa
Keppel, Susan M. (Mrs.); Sr.	Seattle	Plummer, Elizabeth Esther; Fr.	Puyallup
King, Arthur Joseph; Jr.	Vashon	Pollard, Christine; Sr.	Benzien, Mont.
King, Dorothy; Fr.	Puyallup	Price, Frances Mary; Sr.	Sifton
Klingensmith, Clement E.; Fr.	Yakima	Pugsley, Walter H.; So.	Seattle
Klucsmann, Richard M.; So.	Spokane	Purvis, Lois Freda; Fr.	Sumner
Knickrehm, Marie Marguerite; Fr.	Yakima	Pyan, Carleton Parish; So.	Seattle
Knudson, Esther; Sr.	Rexford, Kan.	Rader, Grace L. McDonald; Jr.	Seattle
Kuehner, Arthur C.; Sr.	South Bend	Ransom, L. Rosamond; Jr.	Seattle
Lamoreux, Paul; So.	Burton	Rawson, Erroll W.; Jr.	Seattle
Langdon, Frances E. (Mrs.) —	Seattle	Raymond, Percy; So.	Seattle
Larson, Edwin Edward; Fr.	South Prairie	Raynor, George Emil; Sr.	Seattle
Larsen, Kirsten; Jr.	Seattle	Reekie, Jean; Jr.	Seattle
LaViolette, Melvin Francis; Sr.	Seattle	Rhodes, Marthens; So.	Seattle
Lay Doris Evelyn; So.	Seattle	Robb, Helen; So.	Seattle
Lease, Howard Stites; Fr.	Great Falls, Mont.	Roberts, Margaret; Sr.	Tacoma
Le Cocq, John Francis; Fr.	Lynden	Robinson, Bessie Veryl; Sr.	Seattle
Lee, Alice Margaret; So.	Seattle	Rodolf, Harold Albert; So.	Bellingham
Legg, Lols Cornelia; Jr.	Seattle	Roegner, Frederick A.; Fr.	Ellensburg
Levin, Ben Zion; Fr.	Spokane	Rowland, Ethalene C.; So.	South Carrollton, Ky.
Lewis, Anna; So.	Coulee City	Russell, Flora W. S.; Sr.	Weiser, Ida.
Lindblom, Florence Agnes; Jr.	Turlock, Cal.	Sanden, Arthur Gustav; Sr.	Bellingham
Linton, James R.; So.	Portage	Sargent, Winford G.; Sr.	Seattle
Linton, Robert E.; So.	Portage	Sartoris, George Bartholomew; Jr.	Eunuclaw
Little, Edward Milton; Sr.	Seattle	Sawamura, Shohel; So.	Japan
Lonke, Lillian Jensine; Jr.	Seattle	Schlanger, Manford; Fr.	Seattle
Low, Milton Wallace; Fr.	Seattle	Semon, Waldo Lonsbury; So.	Port Angeles
Ludwigs, Flora Emma; So.	Walla Walla	Shannon, Edward A.; Fr.	Seattle
Lundquist, Martha Elvira; So.	Seattle	Shiel, Howard; Fr.	Spokane
Lusby, Ruth Margaret; Sr.	Seattle	Shigaya, Paul Seikichi; Fr.	Kent
McDonald, Alice Louis; Fr.	Seattle	Shumway, Antoinette; Sr.	Granite Falls
McDonald, Mayme; Jr.	Seattle	Simpson, Helen; Sr.	Seattle
MacDougall, John Brock, Jr.; So.	Seattle	Simpson, Mary Alice; Fr.	Seattle
McGovern, William Palmer; So.	Tacoma	Sivertz, Victorian; Fr.	Victoria, B. C.
McIntire, Doris Helen; Sr.	Auburn	Slack, Jean Gertrude; Sr.	Waterville
McKinney, Eva; Sr.	Naches	Smith, Catharine Wright; So.	Puyallup
McLaren, Gay Elizabeth; Sr.	Seattle	Smith, Virginia Florence; Sr.	Pocatello, Ida.
MacMurray, Douglas; So.	Seattle	Snow, Iola; Fr.	Seattle
Mackey, Cora Lois; Sr.	Everett	Spaulding, Florence Louis; Jr.	Monroe
Mahony, Ethel Cecilia; Fr.	Seattle	Starr, Anita Elizabeth; Jr.	Walla Walla
Maloney, Gilbert Michael; Fr.	Everett	Stephens, Ruth Elizabeth; Fr.	Yakima
Mansfield, Thelma Grace; Fr.	Seattle	Stephenson, Marian Lucile; So.	Portland, Ore.
Martin, Frances Lora; So.	Seattle	Stevenson, De; So.	Seattle
Martinson, Esther; Jr.	Seattle	Stewart, Isabel Clarissa; So.	Seattle
Melgard, Christian; Fr.	Seattle	Stilson, Lenore A.; Sr.	Spokane
Mensor, Evelyn; Fr.	Seattle	Stocking, Louise; Fr.	Port Angeles
Merrill, Grant Warren; Fr.	Port Townsend	Strauss, Verla Gladys; So.	Yakima
Messer, Elizabeth B.; So.	Rolling Bay	Strommer, Eric; Fr.	Aberdeen
Metsker, Margaret Ream; Fr.	Seattle	Sturtevant, Emily; Fr.	Seattle
Miller, Wilhmetta E.; Jr.	Ellensburg	Sutherland, Ella; Fr.	Cove, Ore.
Monroe, Raleigh C.; So.	Port Columbia	Swain, Olive; Fr.	Tacoma
Moore, Alice; Sr.	Anacortes	Swanson, Alice; Fr.	Seattle
Morford, Helen Irene; Fr.	Seattle	Swegle, Adele; Sr.	Seattle
Moritz, Harold K.; Jr.	Seattle	Taylor, Margie W. W.; Sr.	Seattle
Morris, Erma; Jr.	Auburn	Thomas, Lenore; Jr.	Bellingham
Morris, Leotta Genevieve; Jr.	Seattle	Thompson, Effie; Sr.	Yakima
Morrow, Leona Marie; Fr.	Seattle	Thorne, Vivian Diana; Fr.	Seattle
Mulhern, Marie; So.	Pendleton, B. C.	Todd, Ruth M.; So.	Seattle
Myer, Thelma Anna Cecelia; So.	Seattle	Tower, Pearl Adella; Jr.	Seattle
Myers, Dorothy; Sr.	Seattle	Travis, Mary Katherine; Jr.	Battle Creek, Mich.
Nagler, Russell A.; Fr.	Selah	Tweed, Lucile; Jr.	Seattle
Nelson, Esther; Sr.	Monthorne	Ungersma, Bernadine; Jr.	Seattle
Nelson, Raymond Richard; So.	Seattle	Van Winkle, Katherine E. H.; Sr.	Oakville
Nogore, Martin; So.	Astoria, Ore.	Veldee, Harry; Fr.	Bremerton
Norman, Evelyn Minglis; Fr.	Seattle	Verd, Laura Maude; Fr.	Seattle
Northrup, Lulu; So.	Seattle	Ware, Sarah Amelia; Sr.	Seattle
Northon, Ruth Arvilla; Fr.	Seattle		
Osborne, Ralph Albert; So.	Seattle		
Osterud, Nena Dorothea; Fr.	Seattle		

<i>Name of Student and Rank</i>	<i>Home Address</i>
Watney, Helen Catherine; Fr.....	Seattle
Watrous, Genie Ida; So.....	Bellingham
Watson, Ruth Elizabeth; Fr.....	Seattle
Watson, Vivian L. (Mrs.); Jr.....	Seattle
Way, Lois Edith; Fr.....	Seattle
Weage, Winifred; Jr.....	Tulare, Cal.
Weston, Nellie C.; So.....	Seattle
White, Lydia; So.....	Seattle
Williams, Lowell Eugene; Sr.....	Seattle
Williamson, Mary Agnes; So.....	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Wilson, Alva; Sr.....	Grants Pass, Ore.
Wilson, Gwynn M.; Fr.....	Tacoma
Wisner, Francis; Jr.....	Berkeley, Cal.
Wold, Karen, Helene; Fr.....	Laurel, Mont.
Wood, Arthur Rollitt; Jr.....	Saratoga, Cal.
Woods, Eva Jessie; Jr.....	Seattle
Woodridge, Hazel B.; So.....	Fullman
Young, Alvia Gordon; Fr.....	Vancouver
Zickler, Irma Pauline; Jr.....	Zillah

## UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Arnold, Helen Florence.....	Seattle
Barnhart, Berta Roybar.....	Seattle
Bjorklund, Ellen Margaret.....	Tacoma
Cameron, Marion P.....	Yakima
Corbin, Ethel D.....	Seattle
Dickens, Gordon Marguerite.....	Silver City, Ida.
Donnell, Marjorie.....	Snohomish
DuBols, Ella Louise.....	Seattle
Flowers, Ruby.....	Chehalis
Floyd, Ruth Fulton.....	Walla Walla
Grinstein, Alexander.....	Seattle
Herman, Margaret Lomen.....	Seattle
Jewett, Juliet Louise.....	Seattle
Kellogg, Lillian Geneva.....	Seattle
Kingsbury, Emily Celeste.....	Butte, Mont.
Landes, Kenneth K.....	Seattle
Lane, James T.....	Chehalis
McKinstry, Edna Virginia.....	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Mahan, Roy C.....	Seattle
Mast, Lois.....	Seattle
Meek, Georgia Ella.....	Seattle
Miller, Charles John.....	Seattle
Moran, Mildred Jean.....	Seattle
Mulhern, Frances Adelia.....	Pendleton, B. C.
Ota, Hisa.....	Seattle
Patterson, Bernice Lillian.....	Puyallup
Perry, Violette M.....	Tacoma
Richardson, Alice May.....	Evanston, Ill.
Rogers, Sam Edward.....	Butte, Mont.
Schoen, Evelyn Henrietta.....	Hilo, T. H.
Smith, Mary Adelaide.....	Seattle
Thompson, Elizabeth R.....	Portland, Ore.
Ward, Alfred Hanson.....	Vashon
Watt, Mabel.....	Seattle
Wienir, Israel T.....	Seattle
Williams, Carrie Colver.....	Union, Ore.

## SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Heany, May.....	Butte, Mont.
Anderson, Martha.....	Seattle
Burnley, Rose Agnes.....	Seattle
Evenson, Ernst Verner.....	Bremerton
Gabrielson, Agnes Theodora.....	Vaughn
Gordon, Madge (Mrs.).....	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Jurgensohn, Eva.....	Seattle
McKensie, Herbert William.....	Seattle
Owsley, Joseph H.....	Seattle
Stickney, Lillian (Mrs.).....	Seattle
Wentworth, Mildred E. Coan (Mrs.).....	Seattle

## College of Education

## ABBREVIATIONS

## CLASSES

Sr.—Senior  
Jr.—Junior

So.—Sophomore  
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Abel, Marjory; So.	Montesano
Albin, Mary; Jr.	Seattle
Allen, Mildred Alice; Jr.	Seattle
Anderson, Frances Bertine; Fr.	Seattle
Arnell, Esther; So.	Seattle
Atkinson, Eva; Fr.	Seattle
Banzer, Desta Pinn; Fr.	Washougal
Barrows, Jeanette Virginia; Fr.	Seattle
Barry, Georgia C.; Jr.	Bellingham
Baxter, Kirk Sawyer; Sr.	Seattle
Bentley, Amelia Amanda; So.	Seattle
Bowden, Henrietta Lois; Jr.	Sand Point, Ida.
Bratcher, Carolyn; Fr.	Pomeroy
Brown, Beatrice Kathryn; So.	Seattle
Brown, Ruth; So.	Stanwood
Burnside, Catharine; Sr.	Raymond
Burr, Margaret; Jr.	Seattle
Burton, Jennie L.; Sr.	Seattle
Callaghan, Mary Angela; Jr.	Seattle
Calloway, Gertrude; Sr.	Seattle
Campbell, Veronica; Fr.	Seattle
Cassidy, Dorothy Catherine; So.	Seattle
Christianson, Fern Luella; Fr.	Seattle
Clarke, Ermine; Jr.	Bellingham
Claus, Christian E.; Sr.	Seattle
Cleland, Faith; Jr.	Seattle
Conner, Dorothy; So.	Seattle
Connors, Edna E.; Sr.	Seattle
Cook, Lois; So.	Snohomish
Cooney, Alta Carolyn; Fr.	Seattle
Copeland, Eunice D.; Fr.	Seattle
Covey, Helen Agnes; Fr.	Seattle
Crawford, Irene E.; Jr.	Puyallup
Culliton, Elaine Clazier; Sr.	Seattle
Cummings, Ardyce Helen; Fr.	Seattle
Currie, Vera Marie; So.	Bellingham
Dalton, Dorothy Ida; Fr.	Chinook
Devenish, Olive; So.	Calgary, Alta.
Dibble, Frances; So.	Berkeley, Cal.
Dirimple, Belle; Jr.	LaConner
Doty, Charlotte W.; Fr.	Chehalis
Downs, Winifred Corson; So.	Tacoma
Eagan, Frances; Fr.	Bremerton
Eastland, Edyth Marjorie; So.	Seattle
Eckles, Beulah Alice; So.	Cambridge, Ida.
Ederer, Pauline; Sr.	Seattle
Entley, Talitha Eldora; Fr.	Seattle
Ettinger, Dorothy; Fr.	Seattle
Filz, Mildred Edna; Fr.	Seattle
Fisher, Roberta Claire; So.	Seattle
Forrester, Louise; So.	Redmond
Fosnaugh, Mildred O.; Jr.	Kirkland
Foster, Charles Jacob; Jr.	Seattle
France, Alda May; So.	Montesano
Frankland, Lillian; Fr.	Seattle
Gamwell, Barbara Greene; Jr.	Seattle
Gardiner, Inez; So.	Baker, Ore.
Gilluly, Cora; So.	Seattle
Goodman, Leo; Sr.	Seattle
Goodrich, Haven G.; So.	Stockton, Mo.
Gourman, Mottie; Fr.	Seattle
Griffith, Phyllis; Jr.	Seattle
Gutteau, Robert George; Jr.	Thomas
Gunn, Catherine Elizabeth; Fr.	Seattle
Hague, Martha Olive; Jr.	Livingston, Mont.
Hamm, Florence Julia; So.	Sheridan, Wyo.
Hamm, Vida Irma; So.	Sheridan, Wyo.
Hanson, Dena Louise; Jr.	Seattle
Hardwick, Freda Phyllis; So.	Pinehurst

<i>Name of Student and Rank</i>	<i>Home Address</i>
Henderson, Evelyn Grace; Fr.	Seattle
Hermans, Thomas Gerald; Fr.	Chehalis
Hills, Elizabeth; So.	Seattle
Hindman, Edna; Jr.	Baker, Ore.
Hoare, Julia Catherine; So.	Seaview
Hoppock, Eleanor Rowena; So.	Seattle
Hosmer, Ruth Rachel; Sr.	Seattle
Hubbard, C. Andresen; Fr.	Portland, Ore.
Humphreys, Grace; Fr.	Colfax
Hyndman, Lucile Alva; Jr.	Seattle
Ingraham, Laura Winifred; Jr.	Astoria, Ore.
Jamieson, Cecil Byron; So.	Lynden
Jasperon, Agnes; So.	Seattle
Jones, Alice May Dowell (Mrs.); Sr.	Renton
Jorgensen, Marguerite; So.	Seattle
Jurgensohn, Gladys; So.	Seattle
Kamm, Charles J.; Fr.	Lynden
Knutson, Anna; So.	Seattle
Kohlman, Marjorie Xavier; Sr.	Seattle
Lawless, Bernice; Fr.	Seattle
Lawless, Grace; Fr.	Seattle
Lawson, Gay Lillian Sarah; So.	Seattle
Lawson, Peninnah Belle; Sr.	Seattle
Lie, Borghild C.; Jr.	Seattle
Lilly, Dorothy Carmella; Fr.	Seattle
Little, Dorothy Vernon; Fr.	Seattle
Logg, Frank Stanley; Fr.	Seattle
Lokke, Carl L.; Fr.	Olympia
Lovegren, Elvey Theresa; So.	Poulsbo
Lynch, Angeline; Fr.	Butte, Mont.
Lynch, Anna M.; Jr.	Butte, Mont.
McCausland, Lelon; So.	Seattle
McCormick, Helen; So.	Gresham, Ore.
McCroskey, Lois; So.	Colfax
McFee, Jenn; Sr.	Seattle
McLean, Margaret C.; Jr.	Fort Steilacoom
McVay, Vilo Catherine; Fr.	Seattle
Magowan, Hazel Mae; Jr.	Hot Springs, S. D.
Marchildon, Maria; So.	Yakima
Martinson, Ruth Linnea; Fr.	Mount Vernon
Meenach, Gladys M.; Jr.	Seattle
Merrill, Mary Honor; Fr.	Seattle
Meyer, Louise; So.	Seattle
Michael, Sadie; Sr.	Seattle
Micha, Marie Antoinette; Fr.	Seattle
Miles, Alice; Jr.	Seattle
Miller, Helen Marie; Jr.	Seattle
Mottman, Elizabeth Anne; Jr.	Bellingham
Muller, Mary Christie Allester; Fr.	Seattle
Nangle, Fern Elizabeth; So.	Seattle
Neil, Vera; So.	Port Gamble
Ness, Nils Arthur B.; Jr.	Tacoma
Nicholson, Margaret; So.	Seattle
Oakley, Eldora Viola; Jr.	Seattle
O'Brien, John Henry; Fr.	Seattle
Olmstead, Vera; Jr.	Medford, Ore.
Olsen, Selma; So.	Chinook
Orell, Jessie; Fr.	Seattle
Otaka, Ray K.; Jr.	Seattle
Parchman, Alice De Sumner; So.	Ancortes
Parker, Frances Estella; Sr.	Seattle
Peoples, Margaret; Fr.	Seattle
Perigoy, William H.; Fr.	Nehalem, Ore.
Perkins, Wendolyn; So.	Seattle
Pershing, Helen Gene; So.	Seattle
Peterson, May Anita; Fr.	Tacoma
Redding, Bernice E. E.; Fr.	Seattle
Reed, Jennie M.; Jr.	Tacoma

<i>Name of Student and Rank</i>	<i>Home Address</i>
Riddle, Rosamond Stanley; Jr.	Seattle
Riddle, William Stanley; Jr.	Seattle
Robinson, Vida; Fr.	Seattle
Roy, Clinton Glenn; Fr.	Seattle
Rugh, Ruby Pearce (Mrs.); Jr.	Walla Walla
Sakamoto, Mine; Jr.	Seattle
Scheurer, Genevieve; Sr.	Long Beach, Cal.
Schussler, Margaret; Fr.	Sunnyside
Shumway, Ruth Katherine; So.	Granite Falls
Skagerlind, Frances Louise; So.	Seattle
Smith, Margaret Lucy; So.	Tacoma
Spieseke, Daisy Marietta; So.	Seattle
St. Clair, Esther Anna; Jr.	Silverdale
Steele, Elsie; So.	Seattle
Stolp, Rose Marie; Jr.	Sprague
Sully, Helen Margaret; Jr.	Seattle
Tait, Eva C. (Mrs.); So.	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Tanzer, Alice; So.	Seattle
Taylor, Ellen; Fr.	Spokane
Theiberg, Evelyn Elizabeth; Jr.	Seattle
Thoren, Amy Johanna Aurelia; Fr.	Seattle
Tift, Lillian Bryce; Sr.	Friday Harbor
Troth, Dennis C.; Jr.	Centralla
Tunander, Ruth Viola; Jr.	Seattle
Van Horne, Esther; Jr.	Richland
Warner, Erma S.; Jr.	Seattle
Weage, Avery D.; So.	Seattle
Weage, Esther Anna; Fr.	Seattle
Werby, Helena J.; So.	Seattle
Whealdon, M. Fay; Jr.	Seattle
Wood, Maricl; Jr.	Snohomish
Worthen, Clifton Boyd; So.	Lynden
Yatsunoff, Conny; Fr.	Seattle
Yoshimura, Tamekichi; Fr.	Seattle

UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Anderson, Evelyn K.	Seattle
Burrows, Fannie E.	Seattle
Conboy, Irene Kathryn	Denver, Colo.
Gose, Gladys	Walla Walla
Hanna, Lena E.	Olympia
Herriott, Julia Martha	Vernal, Utah
Kellogg, Mary Pauline Hoag	Seattle
Kessinger, Ethel R.	Seattle
Kingsbury, Fannie	Portage
McIlravy, David B.	Everett

<i>Name of Student</i>	<i>Home Address</i>
Mallahan, Norval E.	Bothell
O'Brien, Mary	Black River Falls, Wis.
Overmeyer, George William, Jr.	Seattle
Patchin, Wilber Harmon	Shawnee, Okla.
Pease, Ira J.	Seattle
Potter, Charles	Seattle
Rabenau, Catherine C. (Mrs.)	Colbert
Scott, Marion Helen	Tacoma
St. John, William Monroe	Riverside
Wallin, Irene Violet	Seattle

SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Anderson, Edward Garrett	Seattle
Falkoff, Anna L.	Seattle
Fringer, Emma (Mrs.)	Seattle
Metsker, Charles W.	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Minnick, Nelle H.	Sumas
Simonds, Henry Austin	Bothell
Virucda, Amadeo	Log, P. I.

Library School

ABBREVIATIONS

CLASSES

Sr.—Senior  
Jr.—Junior

So.—Sophomore  
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Arney, Mary; Sr.	Thomas
Bateman, Stella; Sr.	Helena, Mont.
Bergh, May Alice; Jr.	Seattle
Cleaves, Edith L.; Sr.	Seattle
Clement, Vera L.; Sr.	Seattle
Coleman, Louise; Sr.	Seattle
Corblitt, Helen D.; Sr.	Seattle
Dickson, Laura; Jr.	Tacoma
Donley, Helen Irene; Jr.	Seattle
Donnell, Georgia Marie; Sr.	Snohomish
Ebright, Eloise; Jr.	Seattle
Erchinger, Hazel Hildegard; Jr.	Tacoma
Frew, Rosamond; Sr.	Seattle
Giudici, Pauline; Sr.	Dillon, Mont.
Hawkins, Elma; Jr.	Seattle
Hayes, Dorothy; Sr.	Seattle
Hedden, Eleanor; Jr.	Seattle
Henty, Elizabeth Gillette; Sr.	Seattle
Hitchcock, Jeannette M.; Sr.	Tacoma
Hoff, Doris Leonora; Sr.	Lakota
Holman, Norma Burnett; Jr.	Oregon City, Ore.
Hudson, Dorothy Sewall; Jr.	Seattle

<i>Name of Student and Rank</i>	<i>Home Address</i>
Keith, Emily Hazlewood; Jr.	Seattle
Koller, Helen; Jr.	Seattle
Lee, Marion Winnifred; Jr.	Tacoma
Lewis, Marion; Jr.	Edmonds
Martin, Margaret Belle; Sr.	Seattle
Mathis, Floy Gladys; Sr.	Seattle
Miller, Amelia Aurora; Jr.	Lebanon, Ore.
Monk, Edith Mary; Sr.	Seattle
Owen, Eleanor M.; Sr.	Seattle
Plimmer, Hilda More; Sr.	Brooklyn, N. Y.
Seely, Anne Shepard; Jr.	Seattle
Seely, Harriet; Sr.	Seattle
Skewis, Shirley Martin; Jr.	Tacoma
Stanton, Kathryn; Sr.	Seattle
St. John, Ivalon Edith; Sr.	Seattle
Stone, Helen Morrill; Sr.	Seattle
Tully, Irene A.; Jr.	Tacoma
Unger, Nell Avery; Sr.	Tacoma
Wallace, Edith; Sr.	Seattle
Walsworth, Esther; Sr.	Butte, Mont.
Welty, Consuelo; Jr.	Seattle

## College of Business Administration

## ABBREVIATIONS

## CLASSES

Sr.—Senior  
Jr.—JuniorSo.—Sophomore  
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Brueggerhoff, Marguerite; Jr.	Seattle
Coleman, Donald J.; Sr.	Seattle
Clausen, Ada; Jr.	Seattle
Flagg, Donald H.; Jr.	Olympia
Gardner, Raymond Locke; Sr.	Seattle
Graves, Orville R.; Sr.	Ellensburg

<i>Name of Student and Rank</i>	<i>Home Address</i>
Kortemeyer, Clara D.; Jr.	Mabton
McGovern, Foster Lincoln; Sr.	Tacoma
McKee, George Meade; Jr.	Seattle
Murphy, Ernest Cullen; Sr.	Seattle
Thompson, Richard A.; Sr.	Okanogan
Wong, Shin Kel; Jr.	Canton, China

## College of Engineering

## ABBREVIATIONS

## CLASSES

Sr.—Senior  
Jr.—JuniorSo.—Sophomore  
Fr.—Freshman

## COURSES

Ch. E.—Chemical Engineering  
C. E.—Civil EngineeringE. E.—Electrical Engineering  
M. E.—Mechanical Engineering

<i>Name of Student, Rank and Department</i>	<i>Home Address</i>
Adams, John Middleton; Sr., C. E.	Bellingham
Alben, Arthur Otto; Fr., Ch. E.	Vancouver
Almquist, Paul Bernhard; Jr., E. E.	Seattle
Ammon, Laurence; So., E. E.	Edmonds
Augerson, Harold Wilbur; Fr., M. E.	Seattle
Axman, Ernest; Fr., E. E.	Seattle
Bach, Roy Odell; Jr., E. E.	Seattle
Bachtold, Herbert Alfred; Fr., Ch. E.	Seattle
Badger, William Robert; Fr., M. E.	Nooksack
Bakke, Oscar; Fr., E. E.	Bellingham
Barnes, Bradford Bruce; Fr., Ch. E.	Olympia
Barnhart, Earl Lawrence; Fr., E. E.	Seattle
Beem, Aubrey B.; Jr., E. E.	Farmington
Bennett, A. Lee.; So., Ch. E.	Seattle
Benson, Willis Clendenning; Fr., C. E.	Seattle
Biner, George Michael; So., M. E.	Seattle
Blake, Buel B.; So., M. E.	Phoenix, B. C.
Bolcom, Henry Marfield; So., C. E.	Seattle
Bolton, Edwin; Fr., M. E.	Seattle
Brengan, Samuel McClure; Fr., Ch. E.	Seattle
Brisack, Floyd Raymond; Jr., E. E.	Seattle
Brook, Frank N.; Fr., E. E.	Seattle
Brown, Earl; Fr., Ch. E.	Custer
Brown, Frank; Fr., C. E.	Gresham, Ore.
Brugger, Andrew J.; Fr., C. E.	Gresham, Ore.
Bukowsky, Harry William Emil; Sr., M. E.	Portland, Ore.
Busfield, John M.; Fr., E. E.	Meadowdale
Buzard, James A.; Fr., M. E.	Seattle
Calvin, Samuel Everett; Fr., C. E.	Seattle
Campbell, Arthur Talbot; Fr., E. E.	Miles City, Mont.
Campbell, Joseph Addison; So., Ch. E.	Seattle
Campfield, Ralph Edward; Sr., Ch. E.	Seattle
Carl, Emil Henry; So., Ch. E.	Seattle
Carlson, Carl A.; Fr., M. E.	Wrangell, Alaska
Carlson, Floyd Everett; Fr., Ch. E.	Seattle
Carr, Howard Maynard; Jr., Ch. E.	Tacoma
Carroll, Frank Samuel; Fr., E. E.	Seattle

<i>Name of Student, Rank and Department</i>	<i>Home Address</i>
Catlett, James T.; So., E. E.	Seattle
Charles, Perry L.; Sr., Ch. E.	Seattle
Charlton, Chase Wilson; Fr., E. E.	Anaconda, Mont.
Chin, June Kee; Sr., E. E.	Seattle
Chittenden, Hiram M.; Jr., C. E.	Seattle
Clifton, Clarence Catcart; So., Ch. E.	Seattle
Cline, Felix; So., Ch. E.	Seattle
Clulow, John W.; Jr., Ch. E.	Newcastle
Coats, George Franklin; Fr., M. E.	Seattle
Coffinberry, Clarence Milton; So., E. E.	Seattle
Cohen, George; Fr., Ch. E.	Chester, Mont.
Coleman, Frederick William; Fr., E. E.	Seattle
Colesworthy, Joseph Bicknell; Jr., E. E.	Seattle
Crabtree, Harley W.; Fr., M. E.	Pendleton, Ore.
Crombie, Frederick Walter; Fr., Ch. E.	Olympia
Culliton, John; Fr., E. E.	Spokane
Dahl, Clifford Alvine; Fr., E. E.	Spokane
Dailey, Arthur Charles; Fr., E. E.	Coeur d'Alene, Ida.
Daly, Milton Joseph; Fr., E. E.	Everett
Dautoff, Victor; Jr., C. E.	Ketchikan, Alaska
Delong, Abe J.; Fr., E. E.	Portland, Ore.
Denny, Robert Orr; Fr., E. E.	Seattle
Dickinson, Phillips; So., E. E.	Seattle
Dimock, Stuart M.; Fr., C. E.	Seattle
Donovan, William McKinley; Fr., E. E.	Seattle
Dreyer, Osden Edwin; So., E. E.	Seattle
Driscoll, Thomas J.; Sr., C. E.	Missoula, Mont.
Durgan, Walter A.; Fr., Ch. E.	Bremerton
Durham, Wendell; Fr., Ch. E.	Seattle
Duwe, Willard Byron; Fr., M. E.	Seattle
Edquist, Paul Englebrecht; Jr., E. E.	Spokane
Edwards, George Washington; Fr., E. E.	Seattle

<i>Name of Student, Rank and Department</i>	<i>Home Address</i>
Edwards, Schuyler B.; Jr., C. E. ....	Port Townsend
Elliot, John Turner; Fr., C. E. ....	Astoria, Ore.
Elliott, Oliver C.; Fr., M. E. ....	Seattle
Elvidge, Earle Charles; Fr., M. E. ....	Seattle
Falconer, Roderic; Fr., E. E. ....	Monroe
Ferguson, James Milne; Fr., E. E. ....	Conrad, Mont.
Fisher, Phillip McKay; Fr., Ch. E. ....	Dupont
Fisher, Raymond Chandler; Fr., E. E. ....	Tacoma
Fox, Robert E., Jr.; Fr., M. E. ....	Seattle
Frahm, Lawrence W.; Fr., E. E. ....	Waterloo, Ia.
Fransen, Walter C.; So., C. E. ....	Seattle
Frazier, Raywood; Fr., M. E. ....	Seattle
Frederick, George Dewey; Fr., E. E. ....	Spokane
Fredericksen, Matthew; Fr., Ch. E. ....	Poulsbo
Frederickson, Albert P.; Fr., Ch. E. ....	Seattle
Fukuzawa, Tanizo; Sr., Ch. E. ....	Seattle
Garrison, Clarence W., Jr., Ch. E. ....	Seattle
Gatewood, Joseph Strong; Fr., C. E. ....	Seattle
Gayne, James Donald; Fr., E. E. ....	Seattle
Gibney, Eugene L.; So., E. E. ....	Seattle
Gill, Stanley Harold; So., Ch. E. ....	Seattle
Glazier, Ward; Fr., M. E. ....	Yakima
Glidden, Joseph H.; Jr., C. E. ....	Ellensburg
Goodner, Ernest Francis; So., Ch. E. ....	Seattle
Goodrick, Ralph Edward; Fr., Ch. E. ....	Bellingham
Gordon, Douglass Dewey; Fr., Ch. E. ....	Seattle
Horst, Howard; Fr., Ch. E. ....	Seattle
Graham, Francis Carroll; Fr., E. E. ....	Okanogan
Graves, Mark A.; So., M. E. ....	Puyallup
Green, Clarence Corleson; Fr., E. E. ....	Oakland, Cal.
Greenleaf, Sidney Nelson; So., Ch. E. ....	Seattle
Gruger, William S., Jr.; Fr., Ch. E. ....	Seattle
Grwell, Fred N.; Fr., E. E. ....	Bremerton
Gundlach, Wilford Richardson; Fr., Ch. E. ....	Wallace, Ida.
Hankons, Hugo R.; Jr., E. E. ....	Seattle
Haase, Herman Henry; So., C. E. ....	Clarkston
Hagmoce, Albert Munson; Fr., E. E. ....	Seattle
Hamblet, Edwin Stephen; Fr., C. E. ....	Portland, Ore.
Hamerly, Laurence Raymond; Fr., E. E. ....	Spokane
Hamilton, James Balser; Sr., C. E. ....	Seattle
Handforth, Stanley Loughheed; Sr., Ch. E. ....	Tacoma
Hardy, William A.; So., Ch. E. ....	Seattle
Hatlen, Charles Bernard; Fr., E. E. ....	Everett
Haug, Andrew J.; Fr., E. E. ....	Seattle
Hawkins, Harry; Fr., Ch. E. ....	Seattle
Hawley, Lyle T.; So., Ch. E. ....	Seattle
Hawley, Sydney James; So., Ch. E. ....	Seattle
Hecht, Howard Amos; Fr., E. E. ....	Seattle
Hedrick, Langdon Bruce; Sr., Ch. E. ....	Seattle
Heintz, Wallace P.; Fr., Ch. E. ....	Yakima
Hervin, Albert W.; Jr., C. E. ....	Seattle
Hitchings, Allen; Jr., C. E. ....	Seattle
Hoffman, Valentine; Sr., M. E. ....	Walla Walla
Hoffmire, DeMuth Ray; So., Ch. E. ....	Portland, Ore.
Hofmann, H. Lee; So., Ch. E. ....	Portland, Ore.
Hunt, Ernest Russell; Fr., C. E. ....	Bridgeport
Hunt, Laurence Wilbur; Fr., Ch. E. ....	Burlington
Hunt, Ozro Harold; So., E. E. ....	Kennedydale
Hunter, Alfred; Fr., M. E. ....	Goldendale
Hunter, Basil Leslie; Jr., Ch. E. ....	Edmonds
Ide, Wilson Glen; So., Ch. E. ....	Seattle
Ishiyama, Eitsui; Fr., E. E. ....	Japan
Iyesaka, Shohel; So., E. E. ....	Japan
James, Gordon; So., Ch. E. ....	Tacoma
Johnson, Frank O.; Fr., E. E. ....	Amboy
Johnson, Halton J.; So., M. E. ....	Mount Vernon
Johnson, Hilding; Fr., E. E. ....	Seattle
Johnson, Hugo N.; So., M. E. ....	Lynden
Jones, Clare T.; Fr., C. E. ....	Seattle
Jones, Elbert C.; Fr., M. E. ....	Wesler, Ida.

<i>Name of Student, Rank and Department</i>	<i>Home Address</i>
Jones, Walter Richard; Fr., M. E. ....	Seattle
Kamholz, William Elmer; Fr., E. E. ....	Goldendale
Kane, Arthur Thomas; Fr., M. E. ....	Edison
Kelley, Cecil Starr; Fr., Ch. E. ....	Seattle
Kemp, Richard Lee; Fr., M. E. ....	Port Orchard
Kief, Caswell Ward; Fr., M. E. ....	Mountain Home, Ida.
Kleist, Walter Albert; Jr., E. E. ....	Tacoma
Kongsted, Ludvig Petersen; Sr., E. E. ....	Seattle
Kronfield, David; Jr., Ch. E. ....	Seattle
Kronfield, Harry; Jr., Ch. E. ....	Seattle
Kuehnert, J. Frank; Fr., M. E. ....	Seattle
Larsen, Axel Martin; Sr., E. E. ....	San Francisco, Cal.
Larsen, Walter E.; So., C. E. ....	Port Townsend
Lee, Fairman B.; Jr., M. E. ....	Seattle
Lee, Tang Lum; Jr., E. E. ....	China
Liston, Terry A.; So., C. E. ....	Orillia
Lloyd, William J.; So., E. E. ....	Seattle
Loomis, Alvin J.; Jr., E. E. ....	Seattle
Lorah, James Richard; Fr., Ch. E. ....	Seattle
Loss, George C.; Fr., E. E. ....	Burnett
Loss, Paul Everett; Fr., E. E. ....	Carbonado
Loughney, Alan William; So., E. E. ....	Bonnors Ferry, Ida.
Loundagin, Fred G.; So., Ch. E. ....	Garfield
Lubcke, Charles M.; Sr., E. E. ....	Bellingham
Luft, Ernest Walter; So., E. E. ....	Bremerton
Luft, Herman; Fr., M. E. ....	Bremerton
Luithe, Edmund Julius; Fr., Ch. E. ....	Seattle
McKee, William G.; Fr., E. E. ....	Amboy
MacKenzie, Robert Gregor; Fr., M. E. ....	Everett
McLeod, Lester R.; Jr., M. E. ....	Tacoma
Macfarlane, Alan Walter; Fr., C. E. ....	Seattle
Magill, Fulton; So., M. E. ....	Tacoma
Martin, Earle Vincent; So., Ch. E. ....	Portland, Ore.
Martin, Leonard A.; Sr., Ch. E. ....	Portland, Ore.
Matsumoto, Takao; Jr., Ch. E. ....	Yakami, Japan
Mattson, Nels, Emanuel; Fr., E. E. ....	Redmond
Mellish, John Frederick; Sr., C. E. ....	Vancouver, B. C.
Metzger, Frank D.; Fr., Ch. E. ....	Livingston, Mont.
Meyers, Leslie M.; Fr., Ch. E. ....	Conconully
Moore, Lynn, Clarence; Fr., E. E. ....	Wenatchee
Moore, Talcott; Sr., C. E. ....	Seattle
Morris, Walter; Fr., E. E. ....	Seattle
Murane, Millard C.; So., M. E. ....	Seattle
Myhrwell, Reynold Lawrence; Fr., C. E. ....	Seattle
Nelson, Carl V.; Jr., C. E. ....	Winslow
Nelson, George Helmer; Fr., M. E. ....	Bellingham
Nelson, James Burton; Fr., M. E. ....	Indianapolis, Ind.
Nelson, Wesley Roy; Sr., C. E. ....	Tacoma
Nevelle, John Adrian; Fr., Ch. E. ....	Sumner
North, Eugene; Fr., E. E. ....	Quinault
Oertel, Charles Lawrence; Fr., M. E. ....	Blaire
O'Leary, Frank; Fr., Ch. E. ....	Seattle
O'Neil, Henry Clay; Fr., C. E. ....	Portland, Ore.
Ormsby, Arthur Hopkins; Fr., E. E. ....	Seattle
Ostrander, Allen Cooper; Fr., E. E. ....	Outlook
Ottestad, August Zellitz; Fr., M. E. ....	Everson
Packer, Francis A.; Sr., M. E. ....	Seattle
Parker, Howard Tennis; So., M. E. ....	Tacoma
Peacock, Louis Frederick; Fr., Ch. E. ....	Seattle
Peers, Rufus I.; Fr., M. E. ....	Wenatchee
Pendergast, Hugh W.; Sr., M. E. ....	Seattle
Pennock, Colman; Fr., E. E. ....	Clarkston
Persons, George Allan; Fr., E. E. ....	Clarkston
Petersen, Axel H.; So., Ch. E. ....	Tacoma
Peterson, Charles Wallace; Sr., E. E. ....	Seattle
Peterson, Clifford Arthur; Fr., E. E. ....	Seattle
Phelps, Tylar Eugene; Fr., E. E. ....	Seattle
Pioda, Ferdinand Charles Reno; Sr., C. E. ....	Seattle

<i>Name of Student, Rank and Department</i>	<i>Home Address</i>
Putnam, Lawrence E.; Fr., M. E.	Winslow
Pyle, Mark; Fr., Ch. E.	Wenatchee
Redmond, Harold Vincent; Fr., C. E.	Seattle
Reed, Alfred W., Jr.; Fr., M. E.	South Bend
Rees; Ralph Beebe; So., E. E.	Portland, Ore.
Reynolds, William; So., E. E.	Seattle
Rice, George Russell, Jr.; E. E.	Tacoma
Richardson, Ralph Sterling; Fr., M. E.	Spokane
Rigor, Macario T.; Fr., M. E.	La Paz, P. I.
Ringstad, Myron Henry; Sr., Ch. E.	Seattle
Rogers, Nathaniel S.; So., Ch. E.	Auburn
Roos, Albert H.; So., E. E.	Lewiston, Ida.
Ruffner, Edmund Birch; Fr., E. E.	Seattle
Rummel, Corwin P.; Jr., M. E.	Tacoma
Rutledge, Rollin Ashton; Fr., E. E.	Seattle
Sallee, H. Bland; Jr., M. E.	Tumwater
Sankela, Nell John; So., E. E.	Ilwaco
Savannah, Edward Jack; Jr., Ch. E.	Victoria, B. C.
Schadt, John Raymond; Fr., E. E.	Seattle
Schneider, Leonard H.; So., E. E.	Seattle
Sellick, Harry; Sr., C. E.	Portland, Ore.
Shaw, Cyril Nile; So., E. E.	Great Falls, Mont.
Shepherd, Paul Edward; Fr., E. E.	Hillyard
Shostrom, Oscar E.; Jr., Ch. E.	Tacoma
Simpson, James Richmond; Fr., E. E.	Stevensville, Mont.
Simpson, Paul Raymond; Jr., Ch. E.	Stevensville, Mont.
Sinclair, Bliss Gleed; Sr., E. E.	Seattle
Singer, Fred John; So., E. E.	Seattle
Sisler, Roland Whitmarsh; Fr., M. E.	Seattle
Skotland, Wilhelm August; So., C. E.	Seattle
Smith, Ralph M.; Fr., E. E.	Livingston, Mont.
Smith, Sherwood H.; Fr., C. E.	Seattle
Soice, Alva Lee; Fr., E. E.	Stafford, Kan.
Somerville, David Annesley; Jr., Ch. E.	Lewiston, Ida.
Southard, John Henry; Fr., Ch. E.	St. Helens, Ore.
Sparling, Frederick A.; Fr., C. E.	Newcastle
Sparling, George William; Fr., C. E.	Newcastle
Sparrow, William Thomas; Fr., E. E.	Seattle
Spencer, Rhodes V.; So., E. E.	Seattle
Stewart, Arthur W.; So., M. E.	Seattle

<i>Name of Student, Rank and Department</i>	<i>Home Address</i>
Stigenwalt, Alpha Lee; Fr., E. E.	Shewelah
Stillson, Merle O.; So., Ch. E.	Seattle
Stone, Austin; Fr., M. E.	Sumner
Strube, Charles Gustav, Jr.; Fr., M. E.	Portland, Ore.
Sumarildason, Franklin; So., E. E.	Tumwater
Talbot, Reginald Stowell; Fr., Ch. E.	Spokane
Talmadge, Walter Heath; Fr., M. E.	Seattle
Taylor, Colin Alexander; Fr., E. E.	Seattle
Taylor, Willfred Y.; Fr., M. E.	Seattle
Thies, William A.; Jr., C. E.	Seattle
Thomas, Waldo; Fr., M. E.	Seattle
Thoreson, Wallace; Fr., Ch. E.	Seattle
Tipton, Richard Randolph; Sr., C. E.	Seattle
Toimie, Jack Roderick; Jr., E. E.	Seattle
Turnbull, Archie John; Fr., M. E.	Vancover, B. C.
Turnbull, Benjamin Frank; Sr., C. E.	Everett
Tusler, Charles Harold; Fr., M. E.	Wilbur
Vevelstad, Carl; Fr., C. E.	Seattle
Von Normann, Alfred G.; Fr., E. E.	Seattle
Wait, John H.; Fr., E. E.	Cle Elum
Wakefield, Merton Jeffrey; Fr., E. E.	Chehalis
Walcher, Raymore Bland; Fr., C. E.	Braman, Okla.
Walker, Glenn H.; So., E. E.	Seattle
Wallace, Allan Reese; Fr., E. E.	Seattle
Waller, Harold H.; Sr., C. E.	Seattle
Wassberg, Clarence E.; Sr., Ch. E.	Seattle
Weber, Frederick Karl; Fr., E. E.	Cle Elum
Weber, Walter Herman; Jr., E. E.	Yakima
White, Warren E.; So., E. E.	Manette
Whiting, Edward P.; Jr., E. E.	Seattle
Whitman, Mortimer Augustus; Jr., E. E.	Seattle
Williams, Clarence Charles; Fr., E. E.	Eatonville
Wilson, Edwin D.; Jr., Ch. E.	Olympia
Wilson, Thomas Hugh; Fr., E. E.	Seattle
Wolcott, Winfield D.; Fr., Ch. E.	Clyde Park, Mont.
Womack, Jasper; Fr., E. E.	Seattle
Woolfolk, Paul Albert; Sr., C. E.	Southworth
Worthey, Charles Bond; Fr., E. E.	Tacoma
Wright, Allen Carpenter; Fr., E. E.	Richland, Ore.
Zaugg, Felix R.; Sr., E. E.	Tacoma

## UNCLASSIFIED STUDENTS

<i>Name of Student and Department</i>	<i>Home Address</i>
Avila, Romulo; C. E.	Vigan, P. I.
Bissett, Ernest Eugene; M. E.	Seattle
Bogoyavlensky, Boris; C. E.	Seattle
Carlsen, Arthur G.; E. E.	Tacoma
Cline, Matthew; E. E.	Tacoma
Conover, Tallmadge; M. E.	Seattle
Ewing, James Reid, Jr.; M. E.	Bremerton
Foster, Julian Carroll; E. E.	Seattle
Fredlund, Reynold; E. E.	Seattle
Gibson, Walter Charles; E. E.	Vashon
Harvey, Edwin; M. E.	Sedro Woolley
Judd, Henry Clay; C. E.	Pendleton, Ore.
Koucherenco, Xenophone; C. E.	Moscow, Russia

<i>Name of Student and Department</i>	<i>Home Address</i>
Kurtzman, Henry Allan; E. E.	Pasco
Lewis, Rubin; M. E.	Butte, Mont.
McDonald, William Lewis; M. E.	Seattle
McMorris, Harold Edgington; C. E.	Seattle
Mason, Harold L.; Cr. E.	Seattle
Olsen, Oscar M.; E. E.	Chinook
Quiney, Roy Percy; M. E.	Goldendale
Rankin, Park W.; Ch. E.	Yakima
Redington, Bryan; Ch. E.	Thomas
Roe, Frank Hobson; C. E.	Grafton, W. Va.
Ross, Harry Erwin; Ch. E.	Benton Harbor, Mich.
Ross, Orrin Everette; E. E.	Terry, Mont.
Trumbull, William L.; E. E.	Seattle

## SPECIAL STUDENTS

<i>Name of Student and Department</i>	<i>Home Address</i>
Adamson, Everett D.; E. E.	Seattle
Albertson, Carl L.; C. E.	Omak
Baes, Bernard J.; E. E.	Seattle
Bain, John J.; M. E.	Seattle
Baxter, John; M. E.	Seattle

<i>Name of Student and Department</i>	<i>Home Address</i>
Bertsch, Louis J.; E. E.	Seattle
Booker, Walter; M. E.	Seattle
Burque, Leroy Arthur; M. E.	Seattle
Christoferson, O.; M. E.	Seattle
Clausen, Wells H.; E. E.	Yelm

<i>Name of Student and Department</i>	<i>Home Address</i>
Coffin, Roy William; E. E.	Seattle
Cooley, Frank N.; E. E.	Seattle
Davies, George; M. E.	Seattle
DesCamp, Edwin J.; E. E.	Seattle
Dowachter, John; E. E.	Tacoma
Dickens, W. A.; M. E.	Seattle
Dunawar, C. F.; M. E.	Seattle
Fick, Truman F.; E. E.	Seattle
Frederickson, C. J.; M. E.	Seattle
Gray, Harold E.; E. E.	Seattle
Guns, A. F.; M. E.	Seattle
Hanger, William C.; E. E.	Seattle
Hanson, A. M.; M. E.	Seattle
Henman, Ray; M. E.	Seattle
Hitchings, Eben G.; C. E.	Seattle
Hoagland, G. L.; M. E.	Seattle
Hougen, Kenton; Ch. E.	Matzqui, B. C.
Hudson, Cromwell Jesse; E. E.	Seattle
Jameson, Roy C.; E. E.	Seattle
Joseph, John; M. E.	Seattle
Kelling, Phil; M. E.	Seattle
Kragland, F. B.; M. E.	Seattle
LaFore, William L.; M. E.	Seattle
Leith, Robert Elsworth; E. E.	Seattle
Lind, B. P.; M. E.	Seattle
Locker, Rezin Labau; E. E.	Colby
Maclean, James Matthew; M. E.	Vancouver, B. C.

<i>Name of Student and Department</i>	<i>Home Address</i>
Matzinger, Walter; E. E.	Seattle
May, Jesse; M. E.	Seattle
Milligan, Frank G.; M. E.	Seattle
Moore, C. W.; M. E.	Seattle
Nordstern, Al; M. E.	Seattle
Olsen, Edwin; E. E.	Seattle
Pilgrim, H. A.; M. E.	Seattle
Polk, J. L.; M. F.	Seattle
Rasmussen, Robert James; E. E.	Forest Grove, Ore.
Revelle, R. W.; M. E.	Seattle
Ridpath, J. S.; E. E.	Seattle
Roberts, Walter W.; E. E.	Seattle
Ruynan, V. L.; E. E.	Seattle
Sanders, Thornton E.; E. E.	Seattle
Scydell, C. P.; M. E.	Seattle
Slowinski, John; M. E.	Seattle
Stahl, Charles; E. E.	Seattle
Supansick, Arthur; E. E.	Newcastle
Turner, Edward J.; E. E.	Seattle
Valentine, Harold; E. E.	Seattle
Verhulst, J. C.; M. E.	Seattle
Weaver, J. J.; M. E.	Seattle
Wels, Frank; M. E.	Seattle
Whitlatch, Hugh; M. E.	Seattle
Wilkinsin, David; M. E.	Seattle
Wilson, E. C.; M. E.	Seattle
Zapadensky, Orsel; M. 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>
Addy, Helen Frances; Fr.	Seattle
Anderson, Arthur William; Sr.	Colton, Ore.
Anderson, Mildred Aurora; Jr.	Mount Vernon
Anthes, Cora Leola; Jr.	Everett
Arnold, Esther Kathryn; Fr.	Naches
Arnold, Ruth Louise; Fr.	Naches
Aronson, Alice Therese; So.	Seattle
Avery, Marjorie Anvulla; Fr.	Seattle
Ayer, Elizabeth; Fr.	Tumwater
Badley, Wilbur F.; Fr.	Seattle
Barron, Beatrice; Fr.	Seattle
Baumgartner, Grace; So.	Seattle
Benton, Louise Dow; Jr.	Seattle
Billings, Rhea Ramona; So.	Tacoma
Bonell, Aura; Sr.	Fall City
Bonham, Fernie; So.	Kellogg, Ida.
Bonnell, Jenness Mildred; Fr.	Tacoma
Bonner, Pearl; Fr.	Centralia
Booth, Charlotte Leah; Fr.	Seattle
Bordeaux, Lucille; Fr.	Seattle
Bowman, Louise M.; Fr.	Seattle
Braid, Frances Mae Hartwick; Fr.	Seattle
Brehm, Helen Louise; Fr.	Seattle
Brown, Lucille; Fr.	Fossil, Ore.
Brown, Margaret E.; Jr.	Seattle
Brown, Rhemie L.; Jr.	Seattle
Calhoun, Helen; So.	Seattle
Cameron, Fawn; So.	Ellensburg
Canfield, Iris; Fr.	Seattle
Carr, Burton Kenneth; Jr.	Seattle
Carroll, Geneva; So.	Seattle
Chamberlin, Isabel; Fr.	Seattle
Chinn, Margaret; Fr.	Seattle
Chinn, Wing Sam; So.	Seattle
Colbert, William Austin; So.	Prosser
Cole, Thelma Nadine; So.	Sprague

<i>Name of Student and Rank</i>	<i>Home Address</i>
Cook, Etha M.; Jr.	Seattle
Cook, Marjorie Virginia; Fr.	McKenna
Corbett, Alexander Hazen; So.	Yakima
Craver, Eugenia M.; Jr.	Seattle
Culver, Marjorie Helen; Fr.	Spokane
Cutts, Laura Louise; Jr.	Seattle
Davis, Alpha Venus; Fr.	Seattle
Davis, Winnifred; Jr.	Enumclaw
Dean, Josephine Almyra; Fr.	Seattle
Declus, Florence May; Fr.	Boise, Ida.
Denny, Inez Louisa; So.	Seattle
Donohue, Merle Childs (Mrs.); So.	Seattle
Edwards, Esther; Fr.	Seattle
Ely, John Carl; Fr.	Seattle
Erickson, Dorothea Kristine; Fr.	Bothell
Eriand, Gladys Marie; Fr.	Seattle
Ferguson, Ernest E.; Fr.	Seattle
Ferryman, Helen Louise; Sr.	Wenatchee
Foster, Doris; So.	Seattle
Freyd, Bertha Irene; So.	Seattle
Frberg, Louis William; Fr.	Portland, Ore.
Fridlander, Clara; Fr.	Cosmopolis
Gardner, Miriam N.; So.	Seattle
Gerry, Lillian; Sr.	Vashon
Gilmer, Josephine; So.	Seattle
Gorospe, Eugenio A.; Fr.	Lapog, P. I.
Graham, Louise Janet; Fr.	Seattle
Grandstrand, Elmer Waltermer; So.	Walla Walla
Gutmann, Viola; So.	Seattle
Haggen, Lura Stone (Mrs.); Fr.	Bellingham
Hall, Emily; Sr.	Seattle
Harned, Zillah Hester; Fr.	Seattle
Heathman, Norma; Fr.	Almira
Hlatt, Maurine; So.	Seattle
Hinman, Mary Albertine; Fr.	Everett

<i>Name of Student and Rank</i>	<i>Home Address</i>
Honey, Katherine Mead; Jr.	Gresham, Ore.
Hood, Helen Rowena; Fr.	Puyallup
Huntley, Leta Eunice; Fr.	Spokane
Ives, Doris W.; So.	Seattle
Jertson, Edith Viola; So.	Charleston
Kahan, Viola; Fr.	Spokane
King, Muriel; Fr.	Seattle
Klocker, Rosetta Pink; So.	Port Townsend
Koren, Helen; Sr.	Spokane
LaViolette, Helen Louis; So.	Seattle
Leighton, Elizabeth; Fr.	Weiser, Ida.
Lewis, Blodwen; So.	Coulee City
Lewis, Ruth A.; So.	Seattle
Lockman, Frederick V.; Jr.	Seattle
McClung, Mildred Ellen; So.	Portland, Ore.
McGoran, Irene Marion; So.	Merritt, B. C.
McHale, Anne Louise; Fr.	Boise, Ida.
MacKinnon, Frances T. (Mrs.); Sr.	Seattle
McMorran, Jean Pauline; Fr.	Seattle
Manson, Gladys A. C.; Sr.	Seattle
Markus, Helen Elizabeth; So.	Seattle
Marsh, Constance; Sr.	Arlington
Mason, Lela Ernestine; Fr.	Seattle
Matheson, Johanna Brox; Fr.	Seattle
Moore, Doris; Fr.	Seattle
Near, Margaret; Fr.	Seattle
Osborne, Ruth Frye (Mrs.); Jr.	Seattle
Pattison, Evelyn; Fr.	Seattle
Pease, Katharine Marguerite; So.	Langley
Pinkham, Evelyn Alice; So.	Seattle
Radford, Zilpha Fenton (Mrs.); Fr.	Seattle
Reeves, Marie Adele; So.	South Bend
Rehlaender, Marguerite Roberts (Mrs) Fr.	Seattle
Reist, Robert John; Jr.	Dayton, O.

<i>Name of Student and Rank</i>	<i>Home Address</i>
Requa, Dorothy; Fr.	Everett
Rice, Helen Cathryn; Fr.	Bellingham
Richards, Helen Estelle; Fr.	Tacoma
Robe, Vivian Moore; Fr.	Granite Falls
Rueger, Charles Vernon; Jr.	Birdsview
Schnatterly, Zola Virginia; So.	Seattle
Schrock, Ethel Grace; Fr.	Okanogan
Schumacher, Josie Belle; Fr.	Seattle
Sheppard, Violet A.; So.	Yakima
Sherry, Louise Antoinette; Fr.	Seattle
Slipper, Doris Braydestone; Fr.	Hamilton
Small, Mary F.; Fr.	Seattle
Smith, Virginia Hull; Fr.	Seattle
Sorber, Gladys D.; Fr.	Seattle
Streng, Wallace Armstrong; So.	Portland, Ore.
Swezea, Vermita Addella; Fr.	Seattle
Talcott, Louise Doris; Fr.	Seattle
Tibbits, Marlon Manilla; So.	Seattle
	Richmond Heights
Turner, Avis; Fr.	Livingston, Mont.
Turner, Lorna Frost (Mrs.); Jr.	Seattle
Unbewust, Marie Emelyn; Fr.	Spokane
Van Lew, Charles Barnes; Fr.	Seattle
Vinsonhaler, Sara Rea; Sr.	Seattle
Voelker, Helen Olga; Jr.	Spring Valley
Wagoner, Ruth Mary; Jr.	Seattle
Wallin, Evelyn A.; Fr.	Seattle
Warner, Ruth; Fr.	Medford, Ore.
Weinstein, Sylvia; Fr.	Portland, Ore.
Wetzel, Hilda; Jr.	Seattle
Wheeler, Anita Merry; Fr.	Tacoma
Whipps, Carol Louise; Fr.	Kalispell, Mont.
Windus, Harold Leslie; Fr.	Hot Lake, Ore.
Young, Iniz Marie; Fr.	Aberdeen

## UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Bacher, Annette Gladys	South Prairie
Barber, Mercedes	Medford, Ore.
Brown, Virginia Hazel	Seattle
Campbell, Alice Atwood	Mobridge, S. D.
Clarke, Alta M.	Portland, Ore.
Cole, Gladys Genevieve	Seattle
Douglas, Lucille Eva	Seattle
Edwards, Marian	Seattle
Engstrom, Eva Isabel	Seattle
Graham, Marguerite Doris	Seattle
Greenberg, Lillian Frances	Seattle
Gwynn, Leonna	Bellingham
Hall, Dessie	Seattle
Holman, Alice Naomi	Oregon City, Ore.
Holt, May Golda	Seattle
Huff, Ruth June	Sumner
Huntley, Elva Deane	Spokane
Jennison, Lucile Clara	Seattle
Johnson, Fern G.	Kennewick
LaGrave, Gertrude Marguerite	Seattle
Loomis, Mamie Elizabeth	Forest Grove, Ore.

<i>Name of Student</i>	<i>Home Address</i>
Lyon, Rena Mae	Buckley
Mann, Elizabeth	Seattle
Miller, Louise H. (Mrs.)	Seattle
Moloney, Jack	Auburn
Mulkey, Lucile	Seattle
Neft, Fannie	Seattle
Pickering, Mabel Lisle	Seattle
Robertson, Emma Grace	Seattle
Sherman, Emma Louise M.	Juneau, Alaska
Sinclair, Vera Irma	Hoquiam
Smith, Dorothy	Gold Hill, Ore.
Smith, Fan E.	Hillsdale, Wyo.
Thurston, Ruth Frances	Spokane
Tidmarsh, Phebe Nell	Seattle
Todd, Rita Florence	Centralia
Tucker, Margaret L.	Seattle
Van Duzer, Edwina May	Kalispell, Mont.
Wilkie, May Belle	Seattle
Woods, Margaret Myrle	Seattle
Young, Laverne	Seattle

## SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Bickel, Katharine	Seattle
Dickey, Hester Maud	Landlock, Alaska
Eade, Amelle S.	Seattle
Greenwalt, Louise Frances	Yakima
Henry, Lillian W.	Seattle
Hickman, Edna	Seattle
Lamb, Rose Eugenia	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Meyers, Marie Edna	Spokane
Mousseu, Elizabeth	Seattle
Nichols, Helen Evelyn	Briarcliff Manor, N. Y.
Oakley, June	Seattle
Skog, Joe L.	Seattle
Stephens, Andrea Dee	Crookston, Minn.
Stillwell, Myrtle E.	Seattle

College of Forestry

ABBREVIATIONS

CLASSES

Sr.—Senior  
 Jr.—Junior  
 Sp.—Special

So.—Sophomore  
 Fr.—Freshman  
 S.C.—Short Course

<i>Name of Student and Rank</i>	<i>Home Address</i>
Adamson, John Quincy; Fr.	Sherman, Tex.
Andrews, Selden Spencer; Fr.	Walsenburg, Colo.
Bozarth, Clifford C.; So.	Woodland
Brandstrom, Axel J. F.; Jr.	Seattle
Briem, Alfred; Jr.	Orillia
Byerly, Oliver Finley; Fr.	Portland, Ore.
Clark, Carroll Clifton; Fr.	Kent
Dretzler, Ralph F.; So.	Suquamish
Durland, William Davies; Jr.	Seattle
Fogelquist, Charles Fridolph; Fr.	Selah
Gamm, Irvin William Otto; So.	Watertown, Wis.
Gillespie, James Thomas; Sr.	Albany, Mo.
Hall, Jeff M.; Fr.	Sherman, Tex.
Hogan, Elwood D.; Fr.	Cosmopolis
Lind, Harry Milton; Jr.	Seattle
Lindsay, William Klippel; So.	Idaho Falls, Ida.
McGaffey, Wesley Frederick; Fr.	Everett

<i>Name of Student and Rank</i>	<i>Home Address</i>
Morgan, William E.; So.	Marysville
Murphy, Harry; Fr.	Portland, Ore.
Nesbitt, Herbert Cedric; Fr.	Goldendale
Oass, Alfred; Sr.	Seattle
O'Brien, George William; Sr.	Vancouver, B. C.
Pearce, John Kenneth; Fr.	Bridal Veil, Ore.
Pickens, Sarah Grace; Fr.	La Grande, Ore.
Renner, Frederic George; Fr.	Wenatchee
Rogge, G. George; Fr.	Seattle
Schafer, A. Carl; So.	Satsop
Schmidt, Ronald F.; Fr.	Seattle
Schmoe, Floyd Wilfred.	Wichita, Kan.
Smith, J. H. Bronson; Fr.	Seattle
Smith, Richard M.; So.	Washougal
Sprague, Delbert Willis; Fr.	Seattle
Whipple, Donald McCrum; So.	Cheyenne, Wyo.
Whiting, Preston; Fr.	Portland, Ore.
Wilson, George Dewey; Fr.	Aberdeen
Zeller, Earl Henry; Sr.	Lebanon, Pa.

UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
DeSpain, Samuel Harold.	Palmer, Ore.
Hughes, Robert William.	Omaha, Neb.
Price, William Howard.	Republic
Scott, Walter De Hon.	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Shorey, Samuel Arthur.	Montesano
Sims, Lester Knowlton.	Enumclaw
Wood, W. Russell.	Snohomish

SPECIAL AND SHORT COURSE STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Boe, Justus Henry; S.C.	Paisley, Scotland
Muir, Joseph Edward Lewis; S.C.	Nanaimo, B. C.

<i>Name of Student</i>	<i>Home Address</i>
Sylvén, Helge; S.C.	Trollhattan, Sweden

School of Law

ABBREVIATIONS

CLASSES

3rd.—Third Year

1st.—First Year

2nd.—Second Year

<i>Name of Student and Rank</i>	<i>Home Address</i>
Allen, John M.; 1st.	Seattle
Backus, Leroy M.; 3rd.	Seattle
Baumgartner, Walter Louis; 3rd.	Okanogan
Beardsley, George; 2nd.	Yakima
Carmichael, George Albert; 1st.	Bloomfield, Ia.
Case, Edson M.; 1st.	Puyallup
Coffee, John M.; 1st.	Tacoma
Ellis, Floyd E.; 2nd.	Spokane
Gilbert, Warren; 2nd.	El Reno, Okla.
Hoard, Mary Gladys; 3rd.	Seattle
Hodge, Walter Hartman; 2nd.	Seattle
Hollander, Tyre Harrington; 1st.	Edgemont, N. C.
Hovey, Joseph Chester; 1st.	Ellensburg
Johnson, Esther Victoria; 1st.	St. Paul, Minn.

<i>Name of Student and Rank</i>	<i>Home Address</i>
Johnson, Ofell H.; 1st.	Seattle
Kolmitz, Charlotte; 3rd.	Seattle
Lafromboise, Arthur A.; 2nd.	Enumclaw
Langenbach, John Joseph; 3rd.	Malone
McLaughlin, Earl B.; 1st.	Seattle
O'Connell, William Patrick; 2nd.	Seattle
Richardson, George Frederick, Jr.; 3rd.	Ellensburg
Rosling, Edward Lincoln; 1st.	Seattle
Savage, Lloyd Reuben; 3rd.	Seattle
Stahlem, M. Florence; 1st.	Valley City, N. D.
Tucker, Glyde; 1st.	Tacoma
Van Slatte, Eloise; 2nd.	Spokane
Ward, Frank Donlon; 3rd.	Seattle
Watanabe, Harley Shulchi; 3rd.	Seattle

## UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Hoard, Charles Vere.....	Seattle
Beardsley, Arthur Sydney.....	Yakima
Bennett, Elmer Lloyd.....	Montesano
Courtney, C. Edwin.....	Seattle
Dykeman, Roe.....	Orillia
Hamlin, Harris Howard.....	Seattle
Hannan, Mark.....	Seattle
Hartman, Albert Gus.....	Victoria, B. C.
Healy, Timothy.....	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Martin, Philip Lyle.....	Castle Rock
Morris, John Vincent.....	Seattle
Neergaard, John H.....	Oakedale
Oertel, Daniel Theodore.....	Blaine
Peterson, Julius.....	Seattle
Rogers, Charles L.....	Colville
Stewart, Sarah B.....	Chehalis
Vandercook, M. William.....	Seattle

## SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Brooks, John B.....	Seattle
Conklin, Grover A.....	Seattle
Elridge, Ford Quint.....	Seattle
Horiuch, George S.....	Seattle
Lechner, Leslie A.....	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Park, Thomas Mayborne.....	Seattle
Selridge, George W.....	Anburn
Wein, Clara G.....	Seattle
Wymond, Hawley.....	KallsPELL, Mont.

## College of Mines

## ABBREVIATIONS

## CLASSES

Sr.—Senior  
 Jr.—Junior

So.—Sophomore  
 Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Anderson, A. Elmer; So..	Fairbanks, Alaska
Baggett, William J.; Fr.....	Amboy
Bird, Byron M.; Sr.....	Seattle
Burson, Paul Leroy; Fr.....	Seattle
Bullard, Lloyd Francis; Sr.	Vancouver, B. C.
Culow, William Montgomery; Sr.	Wenatchee
Coats, Marvin; Fr.....	Raymond
Davis, Donald Jerome; Fr.....	Seattle
Davis, Dwight; Fr.....	Port Orchard
Hansen, Einar Henry; Fr.....	Seattle
Hutchinson, Archie L.; Fr.....	Tacoma
Johnson, John Dow; Jr.....	Hobart, Ind.
Johnson, Walter W.; Jr.....	Spokane
Joy, Anderson Stickney; Fr.....	Medford, Ore.
Nelson, Eugene Gerald; So.....	Juneau, Alaska
Nelson, George Earl; So.....	Juneau, Alaska

<i>Name of Student and Rank</i>	<i>Home Address</i>
Nightingale, William Thomas; So.....	Portland, Ore.
Opperman, Conrad J.; Sr.....	Tacoma
Fatty, Ernest Newton; Fr.....	La Grande, Ore.
Ruegg, Clyde A.; Fr.....	Gresham, Ore.
Rumberger, George Howard; Fr.....	Houtzdale, Pa.
Slack, Albert E.; Sr.....	Seattle
Talbot, Henry H.; Sr.....	Jefferson, Ore.
Thomadsen, Leroy Nelson; So.....	Seattle
Thompson, John H.; Jr.....	Seattle
Willcox, H. Glen; So.....	Seattle
Williams, Joseph Augustin; Sr.....	Whitehorse, Y. T., Canada
Woelber, Harry John; So.....	Seattle
Wong Chi Fun; Fr.....	Kwangtung, China

## UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Dickey, Frank Heald.....	Latouche, Alaska
Knudson, Roy G.....	Ponoka, Alta., Canada

<i>Name of Student</i>	<i>Home Address</i>
Schofield, Alfred Guy.....	Seattle
Schwiesow, Will H.....	Tacoma

## SPECIAL AND SHORT COURSE STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Byler, Raymond E.; S. C.....	Spokane
Cameron, Donald William; S. C.....	Alice Arm, B. C.
Cowen, John Robert; S. C.....	Clinton
Dalley, James E.; S. C.....	Olympia
Daniels, Harry Carroll; S. C.....	Thane, Alaska
Foran, William; Sp.....	Seattle
Holbrook, Ray; Sp.....	Seattle
Hoyland, John; S. C.....	Seattle
Johnson, John Helmer; S. C.....	Seattle
Kemp, Thomas Jefferson; S. C.....	Wabash, Ind.
MacKenzie, Elijah Herbert; Sp.	Honolulu, T.H.

<i>Name of Student</i>	<i>Home Address</i>
Pederson, Gerth Randolph John; S. C.....	Tacoma
Randall, Bethel; S. C.....	Prescott
Rede, Max; S. C.....	Dan Creek, Alaska
Reiter, Edward De Witt; S. C.....	Seward, Alaska
Schulze, Carl Henry; S. C.	McCarthy, Alaska
Simon, Andrew; S. C.....	Lithania, Russia
Trimble, Raleigh P.; S. C.....	Portland, Ore.
Warner, Emerson M.; S. C.....	Seattle
Wilson, Amme Anerol; S. C.....	Belmont, N. C.
Winkler, George Edgar; S. C.....	Victoria, B. C.

College of Pharmacy

ABBREVIATIONS

CLASSES

Sr.—Senior  
Jr.—Junior

So.—Sophomore  
Fr.—Freshman

<i>Name of Student and Rank</i>	<i>Home Address</i>
Ahrens, Linda Claire; So.....	Seattle
Ayres, Harry Warner; Jr.....	Seattle
Bennington, C. Edith; Fr.....	Brainerd, Minn.
Biggs, Loddie; Sr.....	Seattle
Boyd, Alice S.; Fr.....	Bremerton
Clark, Geraldine Delacour; Fr.....	Bremerton
Clothier, Lyle Bell; So.....	Bellingham
Curry, Mark Elmore; So.....	Seattle
Fild, Ruth Eugenie; Fr.....	Centralia
Filz, Franklin; Fr.....	Centralia
Fletcher, Charles N.; Fr.....	Seattle
Gilbert, Geraldine; Fr.....	Seattle
Greene, Earle C.; Fr.....	Etna Mills, Cal.
Heron, George M.; Fr.....	Ellensburg
Hurwitz, Milton S.; Fr.....	Seattle
Kracower, Bella; So.....	Seattle
Land, Perry; Fr.....	Seattle
Lee, Richard; Fr.....	Seattle
Lemon, Charles E.; So.....	Everett

<i>Name of Student and Rank</i>	<i>Home Address</i>
Estle, Curtis McFarland; Fr.....	Keelo
McGahn, Ellen Dolores; Fr.....	Seattle
Madden, Kathryn Olive; So.....	Seattle
Molin, Morris James; Fr.....	Seattle
Needham, George Herbert; Fr.....	Seattle
Norman, Harry E.; Sr.....	Charleston
Orosa, Maria Y.; Jr.....	Batangas, P. I.
Rawson, Merrill Oliver; Jr.....	Oakland, Cal.
Roberts, Elizabeth; Fr.....	Seattle
Rodgers, Merry Jesse; Fr.....	Pinehurst
Sells, Anthony Joseph; Jr.....	Seattle
Simonson, Charles; Fr.....	Stanwood
Smith, Gertrude; So.....	Hamilton
Smith, Truman W.; Sr.....	Seattle
Taylor, J. E. Rex; Fr.....	St. Maries, Ida.
Wilkes, Jean Robin; So.....	Seattle
Wold, Rudolph; Fr.....	Grandview
Wong, Ying Chun; So.....	Canton, China
Zenler, Theodore William; So.....	Asotin

UNCLASSIFIED STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Anderson, Edgar.....	Ketchikan, Alaska
Clark, Gwendolen Doloros.....	Bremerton
Gates, George Marion.....	Tacoma

<i>Name of Student</i>	<i>Home Address</i>
Janeck, Roland F.....	Yakima
Millard, Bertha G. Newhouser (Mrs.)...	Seattle

SPECIAL STUDENTS

<i>Name of Student</i>	<i>Home Address</i>
Allibone, Pearl Hannah.....	Bucoda
Gallman, Alfred E.....	Milton
Gunther, Earl J.....	Seattle
Hammarlund, Edwin Ferdinand.....	Gig Harbor
Hills, William Edward.....	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Murphy, Wynnie Mary.....	Kalma, Mont.
Riddell, Chester.....	Sumner
Snyder, Fred H.....	Anacortes
Spongole, Emma A. (Mrs.).....	Port Orchard
Wiekenkamp, William Henry.....	Seattle

Summer Session Students—1917

<i>Name of Student</i>	<i>Home Address</i>
Acklin, Helen.....	Seattle
Adams, Cora M.....	Tacoma
Agassiz, M. Florence.....	Seattle
Ainslie, Elsie.....	Seattle
Allen, Harold Beckwith.....	Seattle
Allen, Mabelle.....	Pendleton, Ore.
Allen, Matilda Florence.....	Kallispell, Mont.
Allen, Mildred A.....	Seattle
Anderson, Gudrun C.....	Seattle
Anderson, Ethel May.....	Seattle
Anderson, Hilda.....	Spokane
Anderson, Lou Eastwood (Mrs.).....	Seattle
Anderson, Martha.....	Seattle
Andrew, Alice Verna.....	Coeur d'Alene, Ida.
Andrews, Cornelius B.....	Seattle
Antonella, Sister M.....	Seattle
Argyle, William Robertson.....	Spanish Fork, Utah
Armstrong, Augustus.....	Seattle
Armstrong, Grace.....	Silvana
Arnell, Esther.....	Seattle
Arneson, Ruby.....	Seattle
Arshun, Mabel.....	Seattle
Ashley, Mabel.....	Seattle
Aspinwall, Mabel G.....	Seattle
Attebery, Hester Josephine.....	Seattle
Austin, George Ray.....	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Avery, Marjorie Arvilla.....	Seattle
Babcock, Edna Elaine.....	Seattle
Backus, LeRoy M.....	Seattle
Bacon, Lula.....	Earlington
Bader, Gertrude Parker.....	Seattle
Bagley, Walter Ethan.....	Seattle
Bailey, Bernice Elnora.....	Everett
Bain, Shirley E.....	Boise, Ida.
Bair, Beatrice Serson.....	Stellacoom
Balsden, Zula D. Z.....	Wapato
Baker, Dora E.....	Forest Grove, Ore.
Baker, Dorothy Jesa.....	Hood River, Ore.
Baker, Mary Nelkirk.....	Seattle
Baker, Thirna E.....	Tacoma
Baldwin, Anna L.....	Seattle
Baldwin, R. J.....	Vancouver
Baldwin, Stephen J.....	Jesup, Iowa
Ball, Alma Irene.....	Tacoma
Ballenger, Zula A.....	Twin Falls, Ida.
Baltzer, Eugene Christian.....	Seattle
Banhill, James Harley.....	Nooksack
Bangs, James Arthur.....	Bonnors Ferry, Ida.
Bankhead, Bessie Walker.....	Houston, Tex.
Barber, David A.....	Tenino
Bardon, Norma.....	Parkland
Bardon, Peter Jeremiah.....	Parkland

<i>Name of Student</i>	<i>Home Address</i>
Barnard, Rhea	Bellingham
Barndt, Gertrude Idell	Walla Walla
Barrett, Emma B.	Seattle
Barrett, Frederick W.	Seattle
Bartel, Anne M.	Seattle
Bartley, Georgia Lulu	Waterloo, Iowa
Bateman, Stella	Helena, Mont.
Baughman, Pearl	Seattle
Beall, Bessie	Kelso
Bean, Frances Lorraine	Seattle
Beardley, Clare	Elma
Beaver, Loretta	Port Orchard
Bechtel, Alice M.	Wooster, O.
Beckwith, Hortense	Seattle
Beecham, Elma	Everett
Beldan, Bernice (Mrs.)	Spokane
Belden, Bonnie B.	Port Townsend
Belle, Emma C.	Seattle
Bell, Grace E.	Spokane
Bell, Kate Tuttle	Spokane
Belwick, Emily Louise	Seattle
Benham, Bess	Seattle
Bennett, Mabel A.	Kalama
Bennett, William Merle	Sliries, Ore.
Bennink, May A. G.	Everett
Benson, Ella Marie	Seattle
Berg, Ida Blanche	Missoula, Mont.
Bergh, Florence	Seattle
Bergh, May Alice	Seattle
Berger, Flora	Kellogg, Ida.
Bergstrom, Olga	Bellingham
Bervilaqua, Mary	Roslyn
Bickel, Katharine	Seattle
Bickford, Ernest Dearle	Seattle
Bigford, Grace Elizabeth	Yakima
Bihler, Mary Louise	Ogden, Utah
Bird, Emma M.	Seattle
Birks, Margaret E.	Tacoma
Bjorklund, Irene Eleanor	Seattle
Bjorneby, Emily Sicelia	Kalispell, Mont.
Black, Mary Adelaide (Mrs.)	Seattle
Blaine, William D.	Pueblo, Colo.
Blanchard, Mary Ellen	Seattle
Blanchard, Myra B.	Spokane
Blashfield, Harriet (Mrs.)	Hood River, Ore.
Blieg, Hedwig	Hillsdale, Ore.
Bliss, Ralph	Seattle
Bloomquist, Edna D.	Kingston
Blosser, Stella Bell	Sultan
Bluth, Edith F.	Spokane
Boardman, Reda Spence	New Richmond, Wis.
Boening, Rose M.	Seattle
Bohannan, G. W. N.	Wenatchee
Bohn, Herman Carl	Lawrence
Bolinger, Blanche Elizabeth	Methow
Bolton, Genevieve	Seattle
Bonar, Leonard E.	Seattle
Bondeson, Selma	Havre, Mont.
Bonell, Hannah Elizabeth	Fall City
Bonney, Caroline Emma	Pendleton, Ore.
Bonney, Zaidu Elizabeth	Tacoma
Bourgrette, Viola M.	Seattle
Bowditch, Blanche Virginia	Bremerton
Bowie, Anna M.	Roslyn
Bowie, Frances	Roslyn
Boxeth, Thora M.	Seattle
Brackett, Anson Wendell	Seattle
Bradley, Florence	Spokane
Bramble, Kittle A.	Havre, Mont.
Brayton, Annie C.	Seattle
Breen, Elizabeth E.	Cadillac, Mich.
Breen, Margaret J.	Seattle
Brenholts, Mary	Seattle
Brenneman, Jane Ellen	Juneau, Alaska
Brinck, Raoul Alphonse	Anacortes
Brinck, Stephen M.	Seattle
Brinkolf, Clark D.	Seattle
Brock, Clark D.	Wallace, Ida.
Broomhall, Edith Jane	Spokane
Brophy, Florence	Coeur d'Alene, Ida.
Brown, Cora May	Bickleton

<i>Name of Student</i>	<i>Home Address</i>
Brown, Earl Theodore	Centralia
Brown, S. Elizabeth	York, Neb.
Brown, Leland P.	Auburn
Browne, Carrie Olive	Omaha, Neb.
Browne, Elsie	Ripon, Cal.
Browne, Harriet M.	Seattle
Bruce, Helen Roslyn	Seattle
Bryden, Catherine T.	Moscow, Ida.
Buchanan, Nina O.	Seattle
Buchanan, Victor	Seattle
Budde, C. A.	Skykomish
Burgess, Edith Luella	Seattle
Burleigh, Bess M.	Seattle
Burnett, C. P. (Mrs.)	Seattle
Burns, Fern Elizabeth	Thorp
Burns, Lenna F.	Seattle
Burns, Omar Allen	Seattle
Burr, Sadi P.	Walla Walla
Burton, Jennie L.	Seattle
Buskett, Mary Page	Edmonds
Butcher, Bessie T.	Seattle
Butler, Anna De Vere	Butte, Mont.
Butler, Jessie Eloise	Seattle
Cade, Vera J.	Seattle
Cady, Osman H.	Seattle
Calder, Mary Etta	Kimberly, Ida.
Cales, Tony Foster	Seattle
Calhoun, Helen	Seattle
Calkins, Grace B.	Sunnyside
Calkins, Maude Joe	Stevensville, Mont.
Callaghan, Dennis Milton	Spokane
Callaghan, Mary A.	Seattle
Campbell, Agnes Sara	Seattle
Campbell, M. Veronica	Seattle
Canfield, Luzelle	Bellingham
Canton, Gerald T.	Seattle
Carey, Vincent	Seattle
Carleton, Lillian G.	Seattle
Carlisle, Isabelle	Seattle
Carlson, Agnes Naomi	Seattle
Carney, William H.	Port Gamble
Carpenter, Clifford	Mount Vernon
Carpenter, Janet Louise	Hastings, Neb.
Carpenter, Vivian Marot	Mount Vernon
Carr, Margaret C.	Spokane
Carroll, Joseph D.	Seattle
Cary, Miles E.	Edmonds
Cave, Gordon Luther	Seattle
Cassidy, F. L.	Seattle
Chamberlain, Ruth	Portland, Ore.
Chamberlin, James Edwin	Auburn
Chambers, Vera	Yelm
Chan, Kay Pun	Canton, China
Chappelle, Gladys Juanita	Seattle
Chariton, Harriet J.	Chehalis
Charroin, Florence A.	Seattle
Chen, Ta	Hangchow, China
Childs, Merle Stone	Seattle
Christensen, Clara M.	Parkland
Churches, A. Evelyn	Everett
Clague, Frances Elizabeth	Anaconda, Mont.
Clague, Margaret E.	Seattle
Clark, B. M.	Seattle
Clark, Ethel	Pasadena, Cal.
Clark, Levi (Mrs.)	Colville
Clark, Levi C.	Colville
Clark, Virginia Caroline	Wrangell, Alaska
Clark, Virginia May	Seattle
Clarke, Caroline Finfield (Mrs.)	Seattle
Clarke, Ellnor	Seattle
Cleaves, Edith Lorena	Seattle
Clemens, Isabelle Edna	Vancouver, B. C.
Cobb, Tina Marie	Richmond Beach
Cochel, Frances G.	Bellingham
Coe, Franzelt	Seattle
Coffin, Margaret	Yakima
Coffinberry, Pearl S.	Chester, Mont.
Coffman, Mabel M.	Bellingham
Cogswell, Caroline Dustin	Seattle
Coeleman, Bertha May	Spokane
Collinson, Esther	Seattle

<i>Name of Student</i>	<i>Home Address</i>	<i>Name of Student</i>	<i>Home Address</i>
Colson, Belle T. ....	Seattle	Dunham, Rachel E. ....	Auburn
Colter, Josephine Hamilton .....	Seattle	Dunmore, Blanche .....	Seattle
Combs, Uialla Ruth .....	Seattle	Dunn, Helen Haslett .....	Sunnyside
Conoway, M. Gall .....	Seattle	Durham, Hazel Agnes .....	Colville
Conley, Marie Elizabeth .....	Anaconda, Mont.	Duskin, Bernard S. ....	Castle Rock
Conney, Anna Louise .....	Sedro-Woolley	Dutcher, Lila .....	Appleton, Wis.
Connell, Helen, Loretto .....	Seattle	Earhart, Blanche V. ....	Seattle
Connors, Edna E. ....	Seattle	Eaton, Franc Laura .....	Honolulu, T. H.
Constantine, Dorothy Edna .....	Seattle	Ebright, Eloise .....	Seattle
Cook, David L. ....	Newberg, Ore.	Eckert, Ruth .....	Detroit
Cook, Helen Adelia .....	Seattle	Eddy, Nona B. (Mrs.) .....	Helena, Mont.
Cooper, Elizabeth Ann .....	Seattle	Ehle, Bernice Frances .....	Auburn
Cooper, Evelyn F. ....	Seattle	Ehlers, Theo .....	Seattle
Cootes, Sarah Marian .....	Medina	Ehmsen, Ella .....	Portland, Ore.
Cope, H. F. ....	Palmerton, Pa.	Eichholzer, Rupert .....	Seattle
Corsike, James M. ....	Seattle	Einaisson, N. H. (Mrs.) .....	Seattle
Cramlet, Clyde Myron .....	Seattle	Elder, Lucile .....	Coeur d'Alene, Ida.
Craske, Fred Holdaway .....	Bellingham	Elder, Mae (Mrs.) .....	Skykomish
Craver, Eugenia .....	Seattle	Elder, Wilbur Lee .....	Skykomish
Crawford, Bertha E. ....	Tacoma	Elbridge, Lena (Mrs.) .....	Tularosa, N. M.
Crawford, Irene E. ....	Puyallup	Elliott, Florence Ray .....	Seattle
Crawford, Leslie G. ....	Cheney	Elliott, Hiram Woodard .....	Port Orchard
Cremer, Henry .....	Seattle	Ellison, Herbert B. ....	Wenatchee
Crippen, Maida .....	Seattle	Ellis, Ida Myra .....	Tacoma
Crosno, Olive V. ....	Seattle	Elvidge, Ford Quint .....	Seattle
Crossland, M. Luella .....	Pullman	Emerson, Frances .....	Whitehall, Mont.
Crump, John Kennan .....	Bremerton	Emery, Cora V. E. ....	Denver, Colo.
Cummings, Nell .....	Snohomish	Emery, Ethel A. ....	Seattle
Currey, Mauryce Louise .....	Olympia	Erchinger, Hazel .....	Tacoma
Currie, Ina .....	Cashmere	Erickson, Elsie .....	Seattle
Cushman, Thomas J. ....	Seattle	Eustis, Stella .....	Excelsior, Minn.
Daggett, Roma .....	Lenore, Ida.	Eva, Mary M. ....	Seattle
Dahl, Florence .....	Seattle	Evans, Bessie M. (Mrs.) .....	Kapowsin
Dahlstrom, Esther V. ....	Seattle	Evans, Daniel Lester .....	Seattle
Dalgit, Anne .....	Seattle	Evans, Frank O. ....	Mount Vernon
Dalgit, Jean V. ....	Seattle	Evans, Lee Wray .....	Kapowsin
Damon, Verne La Due .....	Seattle	Everett, John S. ....	Waukon
Danforth, Sarah E. ....	Yakima	Everts, Carolyn L. ....	Portland, Ore.
Darwin, Katharine (Mrs.) .....	Seattle	Farley, Guy F. ....	Seattle
Daulton, Elizabeth .....	Winslow	Farnum, Clara (Mrs.) .....	Glendive, Mont.
Davey, Mary Rogers .....	Deer Lodge, Mont.	Faulds, William Howard .....	Sultan
Davidson, Lillian E. ....	Kalispell, Mont.	Fawcett, Chris William .....	Du Pont
Davis, Corinne .....	Spokane	Fay, Helen Frances .....	Seattle
Davis, Kathleen Martha .....	Chinook	Fedder, Oscar .....	Seattle
Davis, Martelle E. (Mrs.) .....	Seattle	Fenton, Erma Virginia .....	Seattle
Dawes, Esther M. ....	Seattle	Ferrin, Holman Boynton .....	Washougal
Dawson, Mary F. U. ....	Bonners Ferry, Ida.	Ferrin, Margaret Lowell (Mrs.) .....	Washougal
Day, George M. ....	Earlington	Fifield, Catherine .....	Everett
Dean, Florence M. ....	Puyallup	Fifield, Ethel .....	Everett
Dean, Helen L. ....	Spokane	Fisher, Clara Irene .....	Rockford, Ill.
Dearborn, Elizabeth .....	Seattle	Fisher, Eunice Helen .....	Kirkland
DeBruyn, Paul Marcellus .....	Seattle	Fisher, Roberta Claire .....	Seattle
Deits, Harry Lou .....	Seattle	Fisher, William A. ....	Lynden
Delwert, Stella Mildred .....	Everett	Fitzgerald, Anna M. ....	Walla Walla
Dellinger, Mary G. ....	Burlington	Fitzgerald, Mary G. ....	Everett
Dellinger, Sarah Sherwood .....	Burlington	Fleener, J. B. ....	Seattle
DeShon, Marguerite .....	Seattle	Fleming, Lucile .....	Sault Ste. Marie, Mich.
de Tourville, Audrey J. ....	Seattle	Flint, Lois E. A. ....	Port Townsend
Devine, Grace Mary .....	Seattle	Flohin, Hazel May (Mrs.) .....	Seattle
Dick, Gordon Wayne .....	Rolling Bay	Flowers, Ruby J. ....	Chehalis
Dirimple, Belle .....	LaConner	Forbes, Amy Victoria .....	Seattle
Doble, Jeannette Eckdale .....	Portland, Ore.	Ford, Clara Louise .....	Bellingham
Doble, Mary Emily .....	Portland, Ore.	Ford, Pauline .....	Sandpoint
Dodge, Alice .....	Seattle	Fordyce, Elizabeth .....	Cedar Rapids, Iowa
Donahoe, Clara Grady .....	Seattle	Forrest, Mary Helen .....	Ogden, Utah
Donoghue, Lucy C. ....	Seattle	Forrester, Louise D. ....	Redmond
Donovan, Harrison .....	Seattle	Forster, George F. ....	Seattle
Donovan, Nellie Ora .....	Spokane	Foss, Mary Loretta .....	Walla Walla
Doollittle, Henry Burton .....	Sedro-Woolley	Foster, Florence M. ....	Ellensburg
Doyler, Anna .....	Blackfoot, Ida.	Foster, Mildred .....	Ellensburg
Dresser, Jessie Angeline .....	Lewiston, Ida.	Fowler, Louise Hobson .....	Seattle
Dresser, Mary Eunice .....	Lewiston, Ida.	France, Georgia Madgil .....	Hoquiam
Drew, Alice M. ....	Seattle	Francis, Violet .....	Seattle
Drotting, Theodore Melvin .....	Tacoma	Frankland, Lillian .....	Seattle
Drummond, Elizabeth M. ....	Tacoma	Franklin, Eva A. ....	Bellingham
Dryden, Alberta Lee .....	Peck, Ida.	Fraser, Alice Rosena .....	Burlington
Duensing, W. F. ....	Seattle	Fredricks, Marie .....	Orofino, Ida.
Duff, Winifred .....	Freewater, Ore.	Freeman, David Wellington .....	Spokane
Duffy, Maurice Matthew .....	Seattle	Freeman, Robert Edward .....	Spokane
Dumas, Rosanna Helen .....	Spokane	French, Irma .....	Seattle
Dunagan, Dessie May .....	Ferndale	Frew, Rosamond .....	Seattle

<i>Name of Student</i>	<i>Home Address</i>	<i>Name of Student</i>	<i>Home Address</i>
Frerichs, Marie C. ....	Seattle	Hedges, Birdie .....	Seattle
Froelich, Virginia Grace .....	Seattle	Heltman, Marjorie McCrary .....	Rathdrum, Ida.
Frost, Lorna Mae .....	Seattle	Hellenthal, Gertrude H. ....	Juneau, Alaska
Fuller, Emilie Stone .....	Seattle	Hemenway, Ruth Evelyn .....	Seattle
Fulton, H. Reed .....	Snohomish	Henderson, Evelyn Grace .....	Seattle
Gabagan, Lillian M. ....	Tacoma	Herford, Marjorie .....	Seattle
Garland, Martha May .....	Seattle	Herford, W. B. (Mrs.) .....	Ocean Park, Cal.
Georgeson, Dagmar .....	Sitka, Alaska	Herr, Susie .....	Seattle
Gerischer, Lillian W. ....	Seattle	Hesselager, Carla Dorthea .....	Seattle
Giblin, Chester Earl .....	Snohomish	Hevly, Martin B. ....	Silvana
Gibson, Clayton E. ....	Seattle	Hlatt, Maurine .....	Seattle
Gibson, Grant M. ....	Issaquah	Hicks, Harvard R. ....	Spokane
Gieser, Emiel Gustav .....	Seattle	Higgle, Mable Iona .....	Girard, Kan.
Gifford, Lola L. ....	Bellingham	Higgins, Eva Constance .....	Ringling, Mont.
Gilbert, Viola Knowlton .....	Salt Lake City, Utah	Hill, Almeda Thompson .....	Seattle
Giles, Fannie E. ....	Seattle	Hill, Grace Alma .....	Wenatchee
Gilluly, Cora .....	Seattle	Hill, Helen Elizabeth .....	Seattle
Giudici, Pauline .....	Dillon, Mont.	Hill, Henrietta L. ....	Seattle
Glady, Slater Mary .....	Portland, Ore.	Hills, Herbert V. ....	Oak Harbor
Glaser, Harry G. ....	Seattle	Hindman, Edna .....	Baker, Ore.
Gleason, Ruth .....	Seattle	Hjort, Elsie Rina .....	East Stanwood
Glenn, Mary Lois .....	Seattle	Hohberger, William .....	Spokane
Glover, O. K. ....	Ashford	Holbrook, Gladys .....	Orofino, Ida.
Glover, O. K. (Mrs.) .....	Ashford	Holcomb, Edna M. ....	Seattle
Good, Jane .....	Mount Vernon	Holcombe, Fannie V. ....	Seattle
Goodman, Isey M. ....	Seattle	Holmes, Winnifred .....	Edmonds
Goodman, Leo .....	Seattle	Hood, Ella .....	Prosser
Good, Howard R. ....	Tacoma	Hook, Maud May .....	Seattle
Gorham, Edna Addison .....	Butte, Mont.	Hoover, Ralph Leonard .....	Montesano
Goss, Charlotte A. ....	Nooksaack	Hopkins, Emma B. ....	Independence, Iowa
Goss, Faith .....	Grand Rapids, Mich.	Hopkins, Marion Louise .....	Seattle
Grau, Nina Wayne .....	Toledo, Iowa	Hopkins, Olive Fay (Mrs.) .....	Kirkland
Greene, Amsel .....	Julietta, Ida.	Hoppeck, Adele Louise .....	Seattle
Greene, Clyde J. ....	Grouse	Hoppeck, Eleanor Rowena .....	Seattle
Greene, Louise Una .....	Oakesdale	Horiuch, George S. ....	Japan
Greenleaf, Ruth .....	Seattle	Hosner, Ruth Rachel .....	Seattle
Greemstreet, Frederick Martin .....	Auburn	Hotelling, Addison Harold .....	Seattle
Greffoz, Hortense Perrine .....	Portland, Ore.	Houghton, Florence Lewis .....	Edmonds
Gregory, Anna L. ....	Spokane	Houlahan, Annie Eileen .....	Seattle
Gridley, Henry N. ....	Seattle	Houssell, Inez Sylvia .....	Seattle
Griffin, Beatrice Adams .....	Tacoma	Howard, Inez M. ....	Freeborn, Minn.
Grime, Florence L. ....	Toppenish	Hoard, Mae .....	Freeborn, Minn.
Gross, Silvia .....	Seattle	Howell, Agnes .....	Centralla
Grubbs, Florence M. ....	Spokane	Howell, Richard Vinton .....	Salina, Kan.
Grube, Lilly .....	Olympia	Howes, Alice .....	Spokane
Guilford, Will H. ....	McKenna	Hubbard, C. Andresen .....	Portland, Ore.
Guitteau, Robert George .....	Thomas	Hubbard, Mabel .....	Clarkston, Mich.
Guthrie, Alice Betty .....	Seattle	Huddleston, Celia .....	Butte, Mont.
Guthrie, Viletta H. ....	Wenatchee	Hughes, Anne .....	Seattle
Gwilym, Gertrude .....	Seattle	Hull, Elinor .....	New York, N. Y.
Gwin, Eyril Newton .....	Woodland	Hultgren, Lorentz E. ....	Tacoma
Gwin, Mabel Sigel .....	Woodland	Hultgren, Elmer Frederick .....	Mahton
Gyde, Constance Liberata .....	Wallace, Ida.	Hunting, Edith (Mrs.) .....	Hampton, Ore.
Haack, Wilhelmina Margaret .....	Seattle	Hunting, Lyman Arthur .....	Hampton, Ore.
Halbach, Norma Catherine .....	Milwaukee, Wis.	Hunzeker, Mattie M. ....	Sutton, Neb.
Hale, Grace Thornton .....	Ridgefield	Hurley, Colla P. ....	Seattle
Hall, Olive (Mrs.) .....	Seattle	Hutchinson, Pansy .....	Mount Vernon
Hall, Suma .....	Potlatch, Ida.	Hutchinson, Dora .....	Randle
Hall, Verne .....	Yakima	Ice, Madge D. ....	Spokane
Hammarberg, Agnes Elizabeth .....	Seattle	Iffert, Bessie .....	Bremerton
Hammarlund, Edwin F. ....	Gig Harbor	Imes, Henry T. ....	Tacoma
Hammer, Mary .....	Sedro-Woolley	Inman, Ondess Lamar .....	Moscow, Ida.
Hammond, Joseph M. ....	Edmonds	Irish, Grace .....	Everett
Hanavalt, Harold O. ....	Seattle	Irvine, Helen .....	Seattle
Hansome, Marius .....	Outlook	Irvine, Paul .....	Portland, Ore.
Hanson, Clara .....	Seattle	Isogaya, Meizen .....	Seattle
Harbin, Ethel E. ....	St. Paul, Minn.	Iwamura, Shimataro .....	Seattle
Harkins, Marjorie .....	Aberdeen	Jackson, Mabel Annie .....	Seattle
Harris, Sarah .....	Seattle	Jackson, W. E. ....	Spokane
Harrison, Elizabeth .....	Butte, Mont.	Jaques, Elizabeth E. (Mrs.) .....	Seattle
Harrison, Mary .....	Madras, Ore.	Jean, Mildred .....	Earlington
Hart, Josephine .....	Seattle	Jenks, Gracia Latham .....	Seattle
Hartley, Jessie V. ....	Prineville, Ore.	Jennings, Eva Welch .....	Seattle
Hartman, Albert Gus .....	Seattle	Jennings, Matilda .....	Lewiston, Ida.
Hartzell, Mabel .....	Alliance, O.	Jensen, A. S. ....	Leavenworth
Hatcher, Ida Mae .....	Seattle	Jerome, William J. ....	Asotin
Hawthorne, Rebecca A. ....	Seattle	Johnson, August A. ....	Seattle
Hayner, Sallie Davis .....	Seattle	Johnson, Ben W. ....	Seattle
Hayner, Norman S. ....	East Sound	Johnson, Ingeborg A. ....	Seattle
Hays, Frances Seymour .....	Bellingham	Johnson, Jennie Marie .....	Brooklyn, Iowa
Hays, W. H. ....	Seattle		

<i>Name of Student</i>	<i>Home Address</i>	<i>Name of Student</i>	<i>Home Address</i>
Johnson, John Earl.....	Kalama	Libby, Jessie Helen .....	Seattle
Johnson, Lura B. (Mrs.).....	Clarkston	Liddell, Grace I. ....	Tacoma
Johnson, Martha R. ....	Seattle	Lieberg, Vivian Heln .....	Seattle
Johnson, Mollie (Mrs.).....	Walla Walla	Lietz, Jessie E. ....	Seattle
Johnson, M. Ruth. ....	Nordland	Lin, Fu. ....	Wu Gun, Human, China
Johnston, Kathryn .....	Helena, Mont.	Livville, Eva Boyle .....	Burley, Ida.
Johnston, Marjorie Dean.....	Seattle	Lisse, Martin William.....	Evanston, Ill.
Johnston, Mary .....	Seattle	Little, Emma K. ....	Portland, Ore.
Johnston, Thelma .....	Aberdeen, Ida.	Little, Ethelyn .....	Seattle
Joiner, Winifred .....	Seattle	Little, Mary Elizabeth .....	Wilbur
Jolliffe, Ellen Mary .....	Seattle	Lofffield, Gabriel .....	Washington, D. C.
Jones, Effie D. ....	Yakima	Long, Agnes .....	Seattle
Jones, Ethel .....	Moscow, Ida.	Long, Marion Apple .....	Naches
Jones, Nancy Emerson.....	Seattle	Long, May G. ....	Everett
Jurgensohn, Eva E. ....	Seattle	Long, Ruby Olive .....	Cashmere
Kalich, Mariano .....	Seattle	Loomis, Caroline G. (Mrs.).....	Buffalo, N. Y.
Kane, Susan M. (Mrs.).....	Seattle	Lord, Gertrude M. ....	Denver, Colo.
Katsch, Flora M. ....	Fairburn, S. D.	Lortie, Rebecca M. ....	Seattle
Kaufman, Josephine Margaret.....	Walla Walla	Louell, Bessie M. ....	Seattle
Kay, Mary E. ....	Alliance, O.	Lovegen, Esther .....	High Point
Kaye, M. Gertrude .....	Spokane	Lovely, Nell Frances.....	Arlington
Keenan, Helen Rose .....	Seattle	Lucas, Kate I. ....	Spokane
Keenan, Mary A. ....	Seattle	Lundstrom, Margaret .....	Dala-Jarna, Sweden
Kelley, Curtis .....	Husum	Lusby, Ruth M. ....	Seattle
Kelly, Samuel P. ....	Bellingham	Lustie, William August.....	Seattle
Kelso, Mary Pearl .....	Clarkston	Lynch, Agnes .....	Seattle
Kelton, Viola .....	Dawson, Y. T., Canada	Lynch, Katherine .....	Blackfoot, Ida.
Kempkes, Elisabeth .....	Everett	McArdle, Joseph R. ....	South Bend
Kendrick, Gladys Lealye.....	Willows, Cal.	McCarney, Margaret .....	Seattle
Kenny, Blanche .....	Tacoma	McCarthy, Esther Foster .....	Krupp
Kenny, Clara .....	Duluth, Minn.	McCarthy, Georgia .....	Seattle
Kenny, Mary H. ....	Spokane	McCarthy, Loretta .....	Parsons, Kan.
Keppel, Susan M. ....	Seattle	McClincy, Eleanor .....	Spokane
Kibbe, L. A. ....	Olympia	McClure, William L. (Mrs.).....	Yakima
Kiefer, Lols .....	Seattle	McClure, Worth .....	Seattle
Kiemle, Katherine .....	Portland, Ore.	McColl, Nellie .....	Spokane
Kilgore, Owen .....	Spokane	McConihe, Marguerite C. ....	Tacoma
King, Dessa M. ....	Seattle	McConnell, Mary Emma .....	Seattle
Kirschner, Karl K. ....	Seattle	McCormick, Earl Orvis .....	Wilbur
Kirschbaum, Anna R. ....	Seattle	McCracken, Bertha .....	Holguin, Cuba
Klein, Elizabeth .....	Everett	McCrea, Hazel Marjorie.....	Coeur d'Alene, Ida.
Knaptou, Mary Alice .....	Seattle	McCree, Janette L. ....	Stevens Point, Wis.
Knicht, Mary Elizabeth.....	Woonsocket, S. D.	McCune, Lily .....	Spokane
Knowlton, Clare (Mrs.).....	Fairfield	McDermott, Gertrude Elizabeth.....	Spokane
Knox, William A. ....	Ketchikan, Alaska	McDonald, Alice E. ....	Seattle
Knudson, Esther .....	Rexford, Kan.	McDonald, Eva .....	Wilson Creek
Kobetich, Mary Rose.....	Madison, Wis.	MacDonald, Jessie .....	Melbourne, Australia
Koch, Flora M. ....	Centralia	MacDonald, Margaret .....	Albany, Ore.
Kolmitz, Charlotte .....	Seattle	MacDonald, Maude A. ....	Sumas
Kraft, E. T. Gertrude.....	Spokane	McDonough, Otto G. ....	Springdale
Krause, Alfred D. ....	Gustine, Cal.	MacDougall, John Brock, Jr. ....	Seattle
Krikos, Alex .....	Seattle	MacDougall, Minnie Fogg .....	Seattle
Kugler, Ruth Teresa.....	Salt Lake City, Utah	MacDowell, Edna Earl.....	Cashmere
Kuhniey, Irene Elizabeth.....	Tracy, Cal.	McDowell, Sadie B. ....	Belleveue
Kuntz, Ada Bertella.....	Salem, Ore.	McFate, Jennie .....	Everett
Lamb, Joseph M. ....	Omak	McFaul, Helen .....	Portland, Ore.
Landru, Floy .....	Hendricks, Minn.	McFaul, Mary Elizabeth (Mrs.).....	Portland, Ore.
Lane, Anna Marie .....	Omaha, Neb.	McGee, Helen D. ....	Seattle
Lane, Helen Catherine.....	Omaha, Neb.	McGill, Kittie Alice .....	Seattle
Langley, Rosa Alice .....	Spokane	McGill, Merrie P. ....	Seattle
Langtry, Margaret .....	Wenatchee	McGolan, Gilbert A. ....	Seattle
Larabee, Louise M. ....	Honolulu, T. H.	McGoran, Irene M. ....	Merritt, B. C.
Larsen, Axel Martin .....	Seattle	McGrady, Minnie Agnes.....	Anaconda, Mont.
Larson, Lars Oscar .....	Seattle	McGrady, Anna L. ....	Anaconda, Mont.
Larson, Maria E. ....	Seattle	McGrath, Loretta .....	Seattle
Lawrence, Alfred J. ....	Seattle	McGraw, Kate Willard .....	Sacramento, Cal.
Lawrence, Arta Frances.....	Everson	McGuire, Nina N. ....	Thornton
Leaf, Alice .....	Seattle	McHugh, H. ....	Renton
Lee, Hazel Wray (Mrs.).....	Fuyallup	McHilton, Mary E. ....	Phillipsburg, Mont.
Legg, Zilpha Emily .....	Seattle	McKay, Charlotte Laurene.....	Friday Harbor
Leggett, Henry Joseph .....	Burton	McKee, Edna Lee .....	Everett
Lehman, Ralph .....	Coeur d'Alene, Ida.	McKeenan, Charles F. ....	Seattle
Lemon, Mildred .....	Olympia	McKinney, Grace Matthews.....	Tacoma
Lemon, Nellie Blanche .....	Tacoma	MacKinnon, Marion Grace.....	Seattle
Lennart, A. E. (Mrs.).....	Seattle	McLain, Ada Esco .....	Seattle
Leo, Ernest .....	Seattle	McLaughlin, May Sue .....	Nashville, Tenn.
Leonard, Dorothy .....	Bellingham	McLean, Margaret Vivian.....	Seattle
Leppert, Sadie E. ....	Yakima	MacMaster, Sara .....	Issaquah
Leshner, Anna F. ....	Stanwood	McMeekin, Anna .....	Mount Vernon
Lester, Claud Frederick.....	Seattle	McMeen, Lola Irene .....	Bellingham
Libby, Isaac Chase .....	Spokane	McPherson, John .....	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Macaulay, Jessie May	Deming
Macdonald, Victoria Alberta	Tacoma
Mack, Arthur McLure	Seattle
Mack, Enid Adolph	Seattle
Mackenzie, Annie Sadle	Seattle
Lower Middle River, N. S.	Canada
Mackenzie, Fern Adelaide (Mrs.)	Seattle
Mackie, Ransom A.	Pullman
Macready, Eleanor	Tacoma
Magruder, Nola M.	Lentner, Mo.
Maguire, Alice	Butte, Mont.
Mahony, Mary Agnes	Portland, Ore.
Mallaham, Norval E.	Bothell
Mack, Clarence L.	Pateros
Mann, Elizabeth J.	Seattle
Manning, Marguerite Patton	Butte, Mont.
Manson, Gladys A. C.	Seattle
Mantz, Helen Arlena	Seattle
Marckx, Mary C.	Black Diamond
Martin, Amy Ellen	Salem, Ore.
Martin, Connie E.	Ellensburg
Martin, Earl B.	Bremerton
Martin, Julia M.	Post Falls, Ida.
Maske, William, Jr.	Seattle
Mason, Edith I.	Seattle
Mathews, Arthur M.	Juneau, Alaska
Mathews, Hope Scaman	Juneau, Alaska
Mathis, Floy	Seattle
Matthews, M. Lucile	Odezza
Matzger, Edward	Seattle
Mayes, Ruth	Seattle
Meacham, Alma	Seattle
Means, Edith H.	Seattle
Meek, Georgia E.	Seattle
Meenach, Gladys	Seattle
Melvin, Belle	Everett
Merling, Ruth Evelyn	Spokane
Merriam, S. Lee	Nooksack
Meyer, Ambrose	Lacey
Meyer, George F.	Lind
Michael, Sadie	Seattle
Miffin, Gordon	Seattle
Miller, Anita	Seattle
Miller, Dorothea	Cheyenne, Wyo.
Miller, Ewalena	Seattle
Miller, Evelyn	St. Paul, Minn.
Miller, Helen A.	Tacoma
Miller, William M.	Portland, Ore.
Millican, Grace Darling	Seattle
Mills, Jessie M.	Tacoma
Minear, Eva C.	Fairfield, Ida.
Minnis, Marjorie Elizabeth	Seattle
Mistlebauer, H. Cecella	Connellsville, Pa.
Mitchell, Birdie Esther	Seattle
Mitchell, Inez H.	Seattle
Mitchell, Neva	Spokane
Mitchell, Ruby	Seattle
Miyasaki, Taichiro	Seattle
Moffet, Chester Ernest	Alsack, Sask., Canada
Monk, Edith Mary	Thomas
Moody, Ruth	Bverett
Moore, Joe F.	Seattle
Moore, Lillie B. (Mrs.)	Seattle
Moore, Thelma Lina	Seattle
More, Luther	Gig Harbor
Morgan, Dorothy A.	Kellogg, Ida.
Morrison, Jennie Clark	Milwaukee, Wis.
Moser, Wilbur E.	Pony, Mont.
Moser, W. E. (Mrs.)	Pony, Mont.
Most, Ida D.	Spokane
Mott, Stella M.	Seattle
Mowghy, Lavinia	Yetter, Ida.
Mudgett, Mildred Dennett	Seattle
Mullholland, Henry William	Seattle
Mullane, Winifred	Hoquiam
Munson, Ada Doris	Seattle
Murray, Lillian	Fort Dodge, Iowa
Mustard, Jessie	Lewiston, Ida.
Myers, Lenore	Seattle
Myers, Margaret	Seattle
Myhrman, Andrew Mattson	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Mykland, Albert A.	Everett
Nachtmann, Marcella K.	Junction City, Kan.
Nafe, Gertrude	Boulder, Colo.
Nalmsmith, Helen A.	Seattle
Nash, Francis J.	Seattle
Nash, Ila	Seattle
Nedham, A. B.	Weston, Ore.
Nelson, Ellen Eustina	Randolph, Kan.
Nelson, Gertrude Lydnor	Seattle
Nelson, Harriet	Seattle
Nelson, Lutillus Livy Sydnor	Seattle
Nelson, Mary A.	Spokane
Nerud, Emma M.	Tacoma
Neustel, Benjamin C.	Rathdrum, Ida.
Nichols, Walter Robert	Snoqualmie
Nicholson, Marion	Victoria, B. C.
Nicholson, Mary Patricia	Tacoma
Nissley, Maude E.	Sterling, Neb.
Noble, Elizabeth B.	Centralia
Noble, Minnie Lucille	Yakima
Noonan, Viola A.	Zillah
Nordberg, Erika I.	Everett
Norton, Elsie G.	Seattle
Norton, Mamie Belle	Seattle
Norton, Parker L.	Seattle
Norton, Rose Lee	Coldwell, Ida.
Oakley, June	Seattle
Oakley, Mary	Seattle
Olsan, Anne M.	Elma
Olsen, Charles Edwin	Iiwaco
Olsen, Leah I.	Tacoma
O'Neill, Helen Constance	Spokane
O'Neil, Kate Navin	San Francisco, Cal.
Oppenorth, Olive Carolyn	Kewaskum, Wis.
Ormsbee, Eugene R.	Seattle
Osborn, Jean Florence	Peshastin
Ostrander, Raymond E.	Seattle
Owen, Eleanor Murray	Seattle
Owen, Ione Marie	Seattle
Pace, Elsie Murray	Rupert, Ida.
Page, Elvie Belle	Olympia
Parish, Florence R. (Mrs.)	Darlington, Ida.
Park, Lical	Seattle
Park, Thomas M., Jr.	Seattle
Parker, Catherine A.	Seattle
Parker, Fred (Mrs.)	Seattle
Parker, Genevieve	Seattle
Parker, Leila	Seattle
Parker, Nannie C.	Seattle
Parrish, Grace Leona	Tacoma
Parsons, Elva T.	Hoquiam
Pascoe, Myra Aurella	Seattle
Patrick, Gertrude	Seattle
Patte, Ida M.	Spokane
Patten, Ethel	Seattle
Patton, Ysabel	Hoquiam
Payne, Callista R.	Skykomish
Pearce, Stella E.	Seattle
Pearson, T. E. (Mrs.)	South Bend
Pease, Ira J.	Seattle
Perks, Alfred	Coupeville
Perry, Mary Agnes	Van Buren
Pershing, Helen G.	Seattle
Peterson, Frank W.	Bellingham
Peterson, Inez Helena	Seattle
Peterson, Margaret	Seattle
Peterson, May	Welpe, Ida.
Pettitt, Florence Mabel	Seattle
Pfaff, Elvina Schramm (Mrs.)	Port Angeles
Pfaff, Roland L.	Port Angeles
Phelps, Madge S.	Tacoma
Phillipi, Harry C.	Bellingham
Phillipi, Phoebe K. (Mrs.)	Bellingham
Phillips, Mabelle C.	Medina
Phippus, Frank William	Hamilton
Pickens, Rose A.	Seattle
Pickering, Alice	Roslyn
Pierce, Pearl Adelaide	Seattle
Pierson, Teckla	Priest River, Ida.
Plimmer, Hilda More	Seattle
Poessel, Ida Francesca	Langley

<i>Name of Student</i>	<i>Home Address</i>
Pogue, Earl L.	Mount Vernon
Pollard, Christine	Benzien, Mont.
Pomeroy, Mabel F.	Madison, Wis.
Porter, Frances Rice	Seattle
Porter, Iva	Boone, Colo.
Porter, Jean	Seattle
Potter, Mabel Idella	Blaine
Powell, Janet Elizabeth	Seattle
Powell, Sargent Gastman	Seattle
Power, Margaret F.	San de Fuca
Pratt, Harriet Elizabeth	Bellingham
Pritchard, Milton	Burton
Prins, Johan	Haarlem, Holland
Pritchard, Ernest H.	North Bend
Pritchard, Millie Margaret	Seattle
Pritchett, Karl	Evergreen, Alaska
Pucher, George Walter	Seattle
Pugh, Louise Katherine	Seattle
Pugsley, Harriot May	Seattle
Purcell, Mary	Sedro-Woolley
Putnam, Mary P.	Red Wing, Minn.
Quackenbush, Rollie	Ocosta
Quigley, Anna B.	Avon, Mont.
Quirk, Nellie Jane	Seattle
Ramsdell, Ruby C.	Salem, Ore.
Ramsey, S. Gertrude	Seattle
Raney, Grace	Seattle
Rathbun, Leona	Seattle
Rawson, Jessie	Pocatello, Ida.
Raymond, Stella Johnson	Raymond
Rayner, Marguerite F.	Pueblo, Colo.
Raynor, George Emil	Seattle
Reardon, Gertrude A.	Anaconda, Mont.
Redford, Hazel Beeler (Mrs.)	LaCrosse
Redford, Walter	LaCrosse
Reed, Clyde L.	Ferndale
Reed, Jennie M.	Tacoma
Reed, Mabel	Spokane
Reeves, Joanna S.	Woodstown, N. J.
Reeves, Mary Elizabeth	New Burlington, O.
Reeves, Mary Katherine	Seattle
Reichert, Dora	Butte, Mont.
Reid, Mabel	San Francisco, Cal.
Rensberg, Helen	Seattle
Renshaw, Myra	Seattle
Rensing, Herman	Castle Rock
Reynolds, Clara P.	Seattle
Rhoads, Lenore	Chelan
Rhodes, William P.	Kent
Rich, Estelle May	Hood River, Ore.
Richards, Ruth	Clifton, Va.
Richardson, Nona B.	Bend, Ore.
Richeson, Mary C.	St. Louis, Mo.
Rickert, Ethel	Seattle
Riddle, Helen Jane	Seattle
Riddle, William Stanley	Seattle
Riggs, Stephen Williamson	Seattle
Ritari, Emilia	Seattle
Robb, Frances E.	Everett
Robb, Helen	Seattle
Robb, James M.	Everett
Roberts, Hilda L.	Virginia, Minn.
Roberts, Ina Streete (Mrs.)	Butte, Mont.
Roberts, Margaret	Tacoma
Roberts, Mary C.	Seattle
Roberts, Nellie Louise	Seattle
Robertson, Katharine P.	Seattle
Robertson, Lucile Marie	Spokane
Robinson, Edna	Tacoma
Robinson, Estella E.	Tacoma
Robinson, Maude Isabel	Seattle
Robinson, Mildred	Yakima
Rochester, Lettie Lee	Bellingham
Rohr, Gertrude E. B.	Astoria, Ore.
Rohwer, Chris Jacob	Seattle
Roman, Elizabeth	Sidney, O.
Root, Mary Hortense	Seattle
Roper, M. Wesley	Kettle Falls
Ross, Marian E.	Hoquiam
Rowland, Ethalene C.	Carrollton, Ky.
Rowlands, Montana	Victoria, B. C.

<i>Name of Student</i>	<i>Home Address</i>
Roy, Alice	Bozeman, Mont.
Rude, Hazel	Seattle
Rundall, Beatrice	Portland, Ore.
Ruppenthal, Anna Barbara	Eltopia
Russell, Edna M.	Seattle
Russell, Pearl Elizabeth	Seattle
Sabin, Jennie W.	Laurel, Neb.
Sabin, Rowland Glenn	Coupeville
Sallsbury, Frank S.	Farmington
Sallsbury, Winnie M.	Hamburg, N. Y.
Salladay, Flora E.	Seattle
Salladay, Letha D.	Seattle
Salmon, Mary	Seattle
Sandborn, Lynne J.	Blue Rapids, Kan.
Sandy, William Ross	Edmonds
Sartoris, Roma Marie	Enumclaw
Sater, Gertrude Pauline	Seattle
Saunders, John Monk	Seattle
Sauror, Elizabeth	Phillipsburg, Mont.
Sawamura, Shohel	Seattle
Sbedico, Ida J. (Mrs.)	Seattle
Schacht, Irene M.	Centralla
Schrenzel, John Julius	Seattle
Schmidt, Elizabeth D.	Roslyn
Schoen, Evelyn Henrietta	Eilo, T. H.
Scholes, Josephine T.	Tacoma
Schreiber, Louise P.	Tacoma
Schug, Harry Penman	Columbus, Mont.
Scofield, Susan	Strawberry Point, Iowa
Scott, Emma Agnes	Baldwin, N. D.
Scott, Margaret	Nampa, Ida.
Scott, Oma Beatrice	Seattle
Scougal, Laura	Seattle
Seaman, L. Maude	Tacoma
Seamans, Marie	Spokane
Search, Katherine	Spokane
Seely, Harriet	Seattle
Segel, Manuel M.	Seattle
Shackelford, Martha Wheatly	Tacoma
Shane, Elizabeth	Tacoma
Shannon, J. F.	Othello
Sharkey, Margaret	Seattle
Sharpe, Sylvia C.	Bordeaux
Shave, Ethel	Seattle
Shaw, Anna Wilber	Seattle
Sheahan, Myrtle	Thornton
Shepherd, Goldiebell	Seattle
Shepherd, Paul Clark	Seattle
Shervem, Henry O.	Tacoma
Shipman, Helen Briggs	Seattle
Shorrtridge, Lila V.	Spokane
Shotwell, Catherine M.	Seattle
Shull, Renata Mary	Seattle
Shumway, Antoinette Elizabeth	Granite Falls
Sifton, Edith	Hoquiam
Sigmond, Harry	Seattle
Silverstone, Libbie	Seattle
Simmons, Edna J.	Milton
Simpson, Martha	Seattle
Slaler, Gertrude	Seattle
Skillman, Fanny Alice	Puyallup
Slack, Mary L.	Mount Vernon
Smallwood, Gladys Nelsine	Seattle
Smith, Alice Ward	Seattle
Smith, Catharine Wright	Puyallup
Smith, Elizabeth H.	Kansas City, Mo.
Smith, Elsie M.	Marysville
Smith, Helen A.	Seattle
Smith, Helen M.	Seattle
Smith, Lillian Louise	Seattle
Smith, Lucy E.	Bothell
Smith, Mamie H.	Milton, Ore.
Smith, Mary Gene	Portland, Ore.
Smith, Nellie Barbara	Marysville
Smith, Virginia Florence	Pocatello, Ida.
Smurthwaite, Margaret	Salt Lake City, Utah
Snyder, Jane	Seattle
Snyder, Martha	Twin Falls, Ida.
Sparks, Angie E.	Everett
Spaulding, Helen Elizabeth	Seattle
Spaulding, Marlon A.	Everett

<i>Name of Student</i>	<i>Home Address</i>	<i>Name of Student</i>	<i>Home Address</i>
Spencer, Katherine Eva	Cadillac, Mich.	Tweed, Lucile	Seattle
Splane, Hazel Mary	Sedro-Woolley	Tyler, M. Estella	Seattle
Spry, Katharine	Sioux City, Iowa	Tyler, L. V. (Mrs.)	Spokane
Stahlhut, Verna	Sunnyside	Tyler, L. Vardaman	Spokane
Stanton, Kathryn Bryce	Seattle	Uhl, Grace	Bellingham
Stark, Charles R.	Seattle	Upham, Florence	Naches City
Starry, Allen	Walla Walla	Utermark, Henriette	Seattle
Stearns, Grave V.	Vancouver	Utke, Albert A.	Bellingham
Stearns, Josephine	Eilensburg	Utterback, Clinton L.	Wallace, Ida.
Steel, Catherine Irene	Walla Walla	Van Cott, Albert B.	Seattle
Stenberg, Betsy Pauline	Bellingham	Vande Bogart, Guy H.	Hillyard
Stevens, Belle Alice	Maltby	Van Devanter, Louise May	Orillia
Stewart, Esther M.	Portland, Ore.	Vandivert, Bessie Agnes	Seattle
Stewart, Florence Bass (Mrs.)	Seattle	Van Horne, Elizabeth	Richland
Stickney, Lillian (Mrs.)	Seattle	Van Orsdall, Otie Pearl	Monroe
Stinson, Albert G.	Seattle	Van Vleet, Cecil Spicer	Portland, Ore.
Stinson, Maude M.	Spokane	Vaupell, Helen K.	Seattle
Stoecker, Mamie B.	Seattle	Venn-Watson, John W.	Shine
Stone, M. Elizabeth	Thornton	Vermilyea, Minerva B.	Vancouver
Stone, Helen M.	Seattle	Vinsonhaler, Sara	Seattle
Stone, Ralph E.	Boise, Ida.	Voight, Edna E.	Seattle
Strachan, Alexander	Garfield	Votaw, Elizabeth	Clarkston
Strate, Johanna	Seattle	Wade, Dorothy	Seattle
Streator, Gertrude Inez	Seattle	Wafer, Mary Barbara	Seattle
Stryker, Jetret I.	Bellevue	Wagen, Alma D.	Tacoma
Stuart, Josephine	Spokane	Waite, Netta M.	Seattle
Stubblefield, Vera L.	Enterprise, Ore.	Wales, Marie Isabel	Bonnors Ferry, Ida.
Sturley, Ruth Emeline	Tacoma	Walker, Anna S.	Seattle
Sullivan, Anna Marie	Butte, Mont.	Walker, Roberta Lonelse	Seattle
Sullivan, Margaret Irene	Butte, Mont.	Wall, Myrtle J.	Seattle
Sutton, Mary Catherine	Seattle	Wallace, Clara Louise	Seattle
Sutton, Sarah Patience	Seattle	Waller, Anna McKinley	Pullman
Suwalsky, Augusta	Seattle	Waller, Clara Hemple (Mrs.)	Seattle
Sveinsson, Mekkin	Seattle	Waller, Nell	Everett
Swan, Eleanor Josephine	Seattle	Waller, Vera Leata	Edmonds
Swartz, Gladys	Seattle	Walter, Hazel	Pullman
Sweet, Helen E.	Seattle	Walters, Mary Estella	Ridgely, Md.
Sweet, Laura Elizabeth	Bellingham	Walton, Jennie (Mrs.)	Kalispell, Mont.
Swensen, Henry Edward	Seattle	Warren, Anna B.	Seattle
Sweet, Evangeline E. (Mrs.)	Sultan	Wass, Florence E.	Redmond
Taft, Dorothy Grace	Seattle	Wassberg, Clarence E.	Seattle
Taggart, Helen Child	Seattle	Watanabe, Shuichi	Seattle
Tait, Eva Celestra	Seattle	Watson, Cecile	Seattle
Tanner, W. Josephine	Seattle	Watson, Kate V.	Seattle
Tavener, Ralph	Independence, Ore.	Watson, Myrtle Neuman	Portland, Ore.
Taylor, Dorothea	Seattle	Watt, Mabel	Seattle
Taylor, Fern Earl	Deming	Waynick, Lulu	Seattle
Taylor, Florence	Phillipsburg, Mont.	Weage, Avery Dudley	Seattle
Taylor, Martha Althea	Duluth, Minn.	Weismiller, Cornelia Margaret	Seattle
Teel, Charles Edmond	Bellingham	Weixel, Besse	Seattle
Terpening, A. R.	Kirkland	Wellhouse, Mamie Ruth	Bellingham
Theresa of the Cross, Sister	Seattle	Welts, Florence	Mount Vernon
Thickens, Jane Gray	Seattle	Wetterhall, Grace M.	Tacoma
Thomas, Ellen A.	Seattle	Wetterhall, Violet	Tacoma
Thomas, Eloise	Walla Walla	Wheeler, Chetta M.	Smithfield, O.
Thomas, Letty K.	Seattle	Wheeler, Gladys	Seattle
Thomas, Mary K.	Walla Walla	Wheeler, Verna Mae	Gig Harbor
Thomas, Ruth Katharine	Walla Walla	Wheldon, Lillian B. (Mrs.)	Seattle
Thompson, Luciole May	Seattle	Whitworth, Sidney E.	Seattle
Thompson, Thomas Gordon	Seattle	Wiese, Bertha M.	Omaha, Neb.
Tidball, Lewis C., Jr.	Bellingham	Wiley, Josephine Carson	Kalispell, Mont.
Thompkins, Ellen Ann	Hastings, Neb.	Wiley, Neva Beryl	Kalispell, Mont.
Toomey, Len L.	Seattle	Wiley, Virginia	Seattle
Tower, Meb B.	Spokane	Wilhelm, Alice M.	Yakima
Tower, Theda M.	Spokane	Will, Edith	La Porte, Ind.
Towne, Helen	Ogden, Utah	Williams, Beatrice C.	Auburn
Towns, Lola Dale	Seattle	Williams, Frances E.	Spokane
Townsend, Ethel	Chehalis	Williams, L. J.	Orose, Cal.
Toynont, Bess	Spokane	Williams, Roger E.	Seattle
Tracy, Floy	Seattle	Willman, August	Seattle
Tracy, Martha	Seattle	Wills, Eva Perry	Wibaux, Mont.
Tracy, Rachel	Seattle	Wilson, S. Berta	Seattle
Troth, Dennis C.	Centralia	Wilson, Edith Olga	Chewelah
Troth, Dennis C. (Mrs.)	Centralia	Wilson, Emma J.	Seattle
Tucker, Gladys	Seattle	Wilson, Evelyn	Seattle
Tucker, Lena Lucile	Seattle	Wilson, Mabel P.	Seattle
Tucker, Mary Elizabeth (Mrs.)	Newport, Ky.	Wilson, Marie H.	Seattle
Tucker, Ruth Elisabeth	Seattle	Wilson, Norris E.	Omak
Turner, Elizabeth Sater	Seattle	Wilson, Orril June	Kieseling
Turner, Ellen	Seattle	Wilson, William Ronald	Seattle
Tuttle, Sara B.	Asotin	Winchell, Edith Jenevra	Richland

<i>Name of Student</i>	<i>Home Address</i>
Windus, Harold Leslie	Seattle
Wintler, Ella	Vancouver
Witt, Lena E.	Spokane
Wolf, Opal Marie	Kewance, Ill.
Wolfe, Allene Monroe (Mrs.)	Weiser, Ida.
Wong, Chii Fun	Kwangtung, China
Wood, Lillian	Redmond
Woodin, Abble	Grand Island, Neb.
Woodward, Frances	Seattle
Woodward, Norval F.	Belleuve
Workman, Nellie	Sheridan, Wyo.
Wrentmore, Salena Elizabeth	Seattle
Wright, Geraldine	Puyallup
Wright, Lynn C.	Duwall
Wright, P. A.	Prosser

<i>Name of Student</i>	<i>Home Address</i>
Wright, Sydney	Sumas
Wybrant, Gertrude Robinson	Seattle
Wyeth, Adeline Burnham	Canby, Ore.
Wyde, Norman Y.	Seattle
Wynn, Inez Ethel	Seattle
Xavier, Johan Ulrik	Parkland
Xavier, Signe Skattebot (Mrs.)	Parkland
Yates, Elmer Howard	Walla Walla
Young, Edna M.	Portland, Ore.
Young, Margaret E.	Three Forks, Mont.
Young, Pearl E.	Everett
Young, Wesley George	Bellingham
Zan, Jewel Spencer	Seattle
Zan, Mane	Seattle

## Puget Sound Marine Station—1917

<i>Name of Student</i>	<i>Home Address</i>
Busby, Harrison W.	Havelock, Iowa
Busby, Lurena L.	Dusty
Bush, Mildred	Lebanon, Ind.
Case, Ethel J.	Spokane
Caughlin, Rose M.	Seattle
Culver, Evelyn	Friday Harbor
Fisher, Olive Grace	Spokane
Frye, Else Marie (Mrs.)	Seattle
Galley, Walter R.	Seattle
Griffiths, Marion Alice	Yakima
Hilton, Omega	Marysville
Hinds, Mildred E.	Plano, Ill.
Hunter, Caroline	Allison, Iowa
Hurd, Annie May	Seattle
Judd, Elsie G.	Seattle

<i>Name of Student</i>	<i>Home Address</i>
Kindred, James Ernest	Dorchester, Mass.
Lee, Ruth	Newberg, Ore.
Lusher, Ruby Ethel	Newport
Moore, Caroline Sheldon	McMinnville, Ore.
Palmer, Miriam Augusta	Fort Collins, Colo.
Riddle, Matthew C.	Grants Pass, Ore.
Roberts, Ruth Margaret	Seattle
Seabury, Catherine	Tacoma
Strong, Leon Henri	Portland, Ore.
Thompson, Noel Finley	Yakima
Tift, Lillian B.	Friday Harbor
Tower, Pearl	Seattle
Wilson, Lena Bveline	Grandview
Windsor, Alene	Sioux City, Iowa
Wisner, Francis Preston	Seattle

## Special Short Courses

### FOR QUARTERMASTERS

<i>Name of Student</i>	<i>Home Address</i>
Armstrong, E. S.	Seattle
Burns, Thomas L.	Seattle
Donahoe, Henry Thomas	Seattle
Durrant, William Edward	Everett
Everest, Harold P.	Kirkland
Ganders, Harry Stanley	Bickleton
Hager, Harold Byrd	Salem, Ore.
Jernberg, Newton E.	Seattle
MacDonald, John Alexander	Buffalo, N. Y.

<i>Name of Student</i>	<i>Home Address</i>
McFee, Joel N.	Seattle
Nieder, Harry A.	Seattle
Patterson, Hiram S.	Seattle
Robbins, Benjamin I.	Seattle
Schively, Charles S.	Seattle
Swanson, Andrew C.	Seattle
Warren, Frank Howard	Seattle
Wright, Clifford E.	Portland, Ore.

### FOR MARINE ENGINEERS

<i>Name of Student</i>	<i>Home Address</i>
Abbott, Robert David	Seattle
Akerly, George A.	Seattle
Allen, Joseph Souther	Tacoma
Amundsen, Anthony	Astoria, Ore.
Anderson, August	Seattle
Anderson, Carl G.	Seattle
Anderson, Joe	Seattle
Andraska, Peter	Seattle
Andrews, Arthur Edwin	Seattle
Augsbury, George L.	Needles, Cal.
Ausin, John	Seattle
Bachtel, Willard Wintrod	Seattle
Bakke, Rudolph Anderson	Tacoma
Bassett, William H.	Houliam
Beach, Archer Cadwell	San Diego, Cal.
Bell, Harry Uriak	Vancouver, B. C.
Bennett, Erby R.	Seattle
Berglund, Hngo W.	Manette

<i>Name of Student</i>	<i>Home Address</i>
Bergstrom, Adolph	Seattle
Bishop, Dan H.	Seattle
Boll, Charles F.	Seattle
Bradland, Thomas	Tacoma
Braham, Hugh	Seattle
Burns, John R.	Seattle
Butterfield, Alonzo	Seattle
Buzard, George S.	Seattle
Campbell, Vernon Hastings	Vallejo, Cal.
Carls, Ernest S.	St. Paul, Minn.
Carr, Richard Walter	Seattle
Carson, Charles Victor	Seattle
Carter, Louis E.	Seattle
Cavender, Edward Joseph	Seattle
Christiansen, Alfred	Seattle
Christiansen, Carl	Seattle
Clark, George E.	Seattle
Clarke, James Elisha	Needles, Cal.

<i>Name of Student</i>	<i>Home Address</i>	<i>Name of Student</i>	<i>Home Address</i>
Clausen, Clarence L.	Olympia	Kimball, Curtis C.	Los Angeles, Cal.
Clements, Harold Lewis	Kent	Klarer, John Jacob	Seattle
Cochrane, Colin	Seattle	Knapp, Edwin D.	Seattle
Coffin, E. H.	Seattle	Kvist, Anders Gunnar	San Francisco, Cal.
Cole, Frank Owen	Seattle	Lanteri, Albert	Seattle
Cook, George I.	Seattle	Lavett, Arvo M.	Seattle
Corthay, Francis Emile	Seattle	Leonard, John	Seattle
Cottle, Frederic Charles	Seattle	Lindh, Nils Alfrid	Seattle
Crangle, Edward Joseph	Butte, Mont.	Livesay, William Benjamin	Seattle
Creed, R. Vernon	Port Townsend	Lochenour, Laurence Newton	Los Angeles, Cal.
Curtis, Al H.	Seattle	Lonsdale, Hiram	Seattle
Dahl, Henry Endresen	Seattle	Lucksinger, Charles Frederick	Seattle
Dalton, Merwyn C.	Seattle	Lynch, Thomas Charles	Seattle
Darr, William Franklin	Skamania	McAllister, Francis Joseph	New York, N. Y.
Dart, Harry E.	Seattle	McDonald, John Fred	Seattle
Davenport, Edward Lee	Seattle	McDonald, Leonard Lorne	Seattle
Davis, Arthur Dean	Seattle	McKay, Edward J.	Seattle
Davis, Guy A.	Seattle	McKenzie, Albert Ellwood	Seattle
Davis, Walter F. C.	Seattle	McTarnahan, Edward Frank	Seattle
Delcamp, Harold B.	Seattle	Madden, James Henry	Los Angeles, Cal.
Deuter, Charles William	Seattle	Malone, Martin Joseph	Seattle
Dillenbeck, Willis McRea	Seattle	Marshall, Edward James	Seattle
Dionne, Barney	Seattle	Mason, Frank Emil	Astoria, Ore.
Doielsen, Thomas	Seattle	Mathison, Karl Johan	Seattle
Downing, John Franklin	Seattle	Menzel, William	Seattle
Dudley, George Franklin	Seattle	Messenger, Horace Bird	Chehalis
Dunn, James Bernard	Seattle	Miller, Ben H.	Rosalia
Dunney, Stephen	Vallejo, Cal.	Miller, Russell Francis	Rainier, Ore.
Earhart, Homer	San Francisco, Cal.	Minder, Jacob W.	Seattle
Earle, William A.	Portland, Ore.	Moe, Carl Magnus	Seattle
Edwards, Arthur L.	Seattle	Monahan, John S.	Seattle
Egaas, Trygee Bernhard	Seattle	Monroe, Charles Jay	Los Angeles, Cal.
Ellison, Roy Thomas	Auburn	Moore, Michael Patrick	San Francisco, Cal.
Eatnes, Henry	Seattle	Morris, Sargent	Seattle
Evans, Charles	Seattle	Morris, William Earl	Seattle
Eyre, William Preston	Buena Vista, Colo.	Morrison, William B.	Seattle
Fenske, Andrew Reynold	Renton	Mugler, Stanley W.	Seattle
Finnigan, Thomas Henry	San Francisco, Cal.	Mullen, George Hamilton	Seattle
Finnigan, Thomas Joseph	Seattle	Mullins, Alonzo Robert	Seattle
Fleming, John Albert	Seattle	Murray, Claude M.	Anchorage, Alaska
Fletcher, Edward	Seattle	Myott, Hubert Holroyd	Los Angeles, Cal.
Fogman, Karl Frederic	Seattle	Nanney, Casey	Seattle
Fulton, Thomas Chester	Willits, Cal.	Nanney, William Addison	Seattle
Ganes, Mathews Anzjon	Seattle	Nelson, Carl Albert	Seattle
Gannon, Harry Francis	Seattle	Nelson, Ernest Walter	Auburn
Gaupholm, Emil	Seattle	Nelson, John Edwin	Seattle
Gilbert, Pearl	Tacoma	Nickerson, Frank Dan	Seattle
Gilmore, Morris Lundy	Seattle	Niesz, Ralph M.	Seattle
Givens, James Garfield	Seattle	Nilsen, Forje Levurin	Seattle
Goldsmith, William A.	Seattle	Novotny, Harry J.	Bremerton
Goss, Joseph J.	Seattle	Olsen, George Kjos	South Bend
Gott, James	Seattle	Olsen, Oscar Adolph	Seattle
Grady, Wallace Garfield	Seattle	Olsen, Olaus	Aberdeen
Gray, Eugene S.	Astoria, Ore.	Ovens, Elmer James	San Francisco, Cal.
Green, Arthur William	Spokane	Owen, Chester Lloyd	Seattle
Grenz, Walter A.	McMinnville, Ore.	Paris, Charles J.	Seattle
Hakanson, John Gottfried	Seattle	Parsons, William M.	Seattle
Hanford, Gerard Beach	Los Angeles, Cal.	Peebles, Gus J.	Okanogan
Hanscome, George A.	Seattle	Perkins, Raymond Martin	Seattle
Hansen, Leonard Anton	Astoria, Ore.	Peterson, Adolph William	Seattle
Harris, John Joseph	Seattle	Peterson, Oscar	Astoria, Ore.
Harris, Roy Lee	Seattle	Porter, Edward Augustus	Molalla, Ore.
Hassel, Matthew C.	Seattle	Potts, James Elsworth	Seattle
Heintzelman, Boyce Raymond	Seattle	Rayburn, Charles Frank	Seattle
Hemlinway, George	Chico, Cal.	Rees, Bertram I.	Seattle
Henke, Edmund	San Francisco, Cal.	Regan, John	Seattle
Hoy, James Lee	Seattle	Remvik, Steve J.	Seattle
Holtrup, Frank James	Petaluma, Cal.	Renton, William F.	Astoria, Ore.
Holmquist, Axel W.	Seattle	Reynolds, Theodore	Port Orchard
Honore, Harold	Seattle	Rhodes, William Philip	Seattle
Horton, Eugene S.	Olympia	Rice, Conrad O.	Seattle
Hosmer, Marvin Mead	Retail	Richardson, Lloyd Leland	Seattle
Ismay, James	Seattle	Richmond, Hugh Love	Seattle
Jensen, Andrew	Everett	Rogers, Henry	Seattle
Jensen, John Harry	Seattle	Rousseau, John Meyer	Seattle
Jones, Isaac Burt	Tacoma	Salter, Harold Burns	Seattle
Junkers, John Andson	Vallejo, Cal.	Sandal, Jacob	Seattle
Kammerer, Harry John	Seattle	Sather, John P.	Seattle
Kent, Ira Arthur	Seattle	Schepelman, Ernest H.	Seattle
Kilgore, Addison	Seattle	Schlegel, Louis	Toutle, Ore.
Killingbeck, Delorma James	Seattle		

<i>Name of Student</i>	<i>Home Address</i>
Schmickrath, Peter Frank	Seattle
Schmidt, Hans	Seattle
Schramm, Frederick W.	San Francisco, Cal.
Schreider, Henry D.	Seattle
Schreyer, Karl Eugene	Seattle
Sheldon, Glen Clark	Chehalis
Shepherd, Paul E.	Seattle
Sheridan, Arthur	Seattle
Shortridge, Willard P.	Seattle
Sieger, Clarence V.	Port Orchard
Smith, Henry Wilkins Catlin	Seattle
Smith, John Ralph	Seattle
Smith, Joseph Henry	Seattle
Smith, Ray Lloyd	Portland, Ore.
Smith, Thomas E.	Seattle
Smyth, Isaac	Seattle
Stahl, John B.	Winslow
Stevens, Ray Bishop	Seattle
Stevenson, Robert Mills	San Francisco, Cal.
Stewart, Hubert Grey	Seattle
Stewart, Robert Fullarton	Seattle
Stewart, Thomas L.	Portland, Ore.

<i>Name of Student</i>	<i>Home Address</i>
Streiff, Roman John	Seattle
Thompson, Lloyd M.	Seattle
Thorson, Herbert Lee	Seattle
Thurlow, Victor C.	Seattle
Toler, Edward L.	Los Angeles, Cal.
Tucker, Edward Davis	Seattle
Ulley, John Dredge	Spokane
Vallgren, Charles	Seattle
Viesleau, Lewis	Cheyboygan, Mich.
Waldron, Walter J.	San Francisco, Cal.
Walsh, Michael J.	Seattle
Wefer, Fred	La Center
White, Albert	Seattle
White, John W.	Portland, Ore.
Williams, James Walter	Lindsay, Cal.
Wilson, Arthur	Portland, Ore.
Winslip, Harry John	Seattle
Wisdom, Omer M.	Seattle
Wolfe, Harry MacDonald	Seattle
Wolfe, Oren Orville	San Pedro, Cal.
Wright, George Stanley	Seattle
Zurschmidt, John J.	Akron, Ohio

## Summary of Enrollment 1917-1918

## RESIDENT STUDENTS

## BY COLLEGES AND SCHOOLS

Graduate School .....	116	
College of Liberal Arts .....	1810	
College of Science.....	360	
College of Education.....	199	
College of Engineering—		
Chemical Engineering .....	80	
Civil Engineering .....	53	
Electrical Engineering .....	146	
Mechanical Engineering .....	98—	377
College of Fine Arts.....		193
College of Forestry—		
Four-year Course .....	43	
Short Course (8 months).....	8—	46
School of Law.....		54
College of Mines—		
Four-year Course .....	36	
Short Course (8 months).....	18—	54
College of Pharmacy.....		53
Library School .....		43
School of Business Administration .....		12
Special Courses—		
For Marine Engineers .....	241	
For Quartermasters .....	17—	258
		<u>3075</u>

## BY CLASSES

Graduates .....	116	
Seniors .....	304	
Juniors .....	362	
Sophomores .....	543	
Freshmen .....	966	
Unclassified .....	303	
Third Year Law.....	9	
Second Year Law.....	7	
First Year Law.....	12	
Special Students—		
Liberal Arts .....	56	
Science .....	11	
Education .....	7	
Engineering .....	64	
Fine Arts .....	14	
Law .....	9	
Mines .....	8	
Pharmacy .....	10—	174
Short Course Students (Forestry and Mines).....		21
Special Course Students (Marine Engineers and Quartermasters).....		258
		<u>3075</u>
Total students in residence.....		3075
Summer Session enrollment 1917.....		1245
		<u>4320</u>
Deduct Summer Session duplicates now attending the University.....		222
		<u>4098</u>

## EXTENSION STUDENTS

Correspondence Study .....	159
Extension Classes .....	644
	<u>803</u>
Total Extension Students.....	803

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 32 extension classes, during the year from March 1, 1917, to March 1, 1918.

Of the correspondence students about 75 per cent. are working for credit toward a degree, and of those in classes 50 per cent.

# University War Courses—Enrollments\*

(To March 1, 1918)

## War Courses Primarily for Regular University Students

### REQUIRED WAR COURSES

Reserve Officers' Training Corps, first and second years.....	638
Surgical Dressings—Red Cross .....	850
Food Conservation .....	120
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	1408

### ELECTIVE WAR COURSES

Courses for regular students to which soldiers and sailors were admitted†.....	108
Military course—Advanced Reserve Officers' Training Corps.....	45
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	153

### War Short Courses in Cooperation with the United States Government

Marine Engineering in co-operation with the United States Shipping Board.....	224
Navigation courses in co-operation with the United States Shipping Board.....	71
Quartermasters' course in co-operation with the United States Army.....	24
Employment Managers' course in co-operation with the United States Bureau of Labor.....	26
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	345

### Special War Schools in Cooperation with the U. S. Naval Training Camp

(Courses Conducted in University recitation halls and laboratories)

Radio Electricians' School .....	489
General Electricians' School .....	25
	<hr/>
	514

### Extension Service War Courses

Theoretical Elements of Navigation (Correspondence).....	27
The Philosophy of the War (Class).....	36
Institute for Red Cross Workers in co-operation with the Northwest Division of American Red Cross .....	500
	<hr/>
	563

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\* The enlisted men of the University of Washington and the Ambulance Corps and enlisted men of Base Hospital No. 50 were given their preliminary instruction through the regular and special courses of the University.

† Included under this head are courses in nautical astronomy, bacteriology, radio engineering, French, camp cooking, military mathematics, theory of aviation, airplane design, naval architecture, aviation, physics and anatomy.

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