CATALOGUE

UNIVERSITY OF WASHINGTON
FOR 1921-1922

ANNOUNCEMENTS
FOR 1922-1923

SEATTLE, WASHINGTON

Seattle
University of Washington Press
1922
NOTICE

The University and its various schools and departments reserve the right to change rules regulating admission to the University and its schools, and any other regulations affecting the student body, or the granting of degrees, and such regulations shall go into force whenever the proper authorities may determine, and shall apply not only to prospective students, but also to those who may, at such time, be matriculated in the University. The University also reserves the right to withdraw courses at any time.
The University Campus, comprising 582 acres, 109 of which are open water, lies between Fifteenth Avenue Northeast and Lake Washington, and East Forty-fifth Street and Lake Union. Ravenna and Cowen Park cars run one block west of the campus. The offices of administration are located in Education Hall and are best reached by leaving the car at East Forty-second Street and University Way.
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1922-1923

AUTUMN QUARTER
Examinations for admission and for exemption from Freshman English...
Wednesday, Thursday and Friday, September 27, 28 and 29.
Registration days..........................Monday, October 2; Tuesday, October 2
Instruction begins.........................Wednesday, October 4, at 8 a.m.
President's Annual Address................Friday, October 6, at 10 a.m.
Regular Meeting of the Faculty............Tuesday, October 24, 4 p.m.
Mid-quarter Scholarship Reports...........Friday, November 11
Thanksgiving Recess........................Wednesday, Nov. 29, 6 p.m. to Monday, Dec. 4, 8 a.m.
Regular Meeting of the Faculty............Tuesday, December 19, 4 p.m.
Examinations for Admission.................Wednesday, Thursday and Friday, December 20, 21 and 22
Instruction ends.........................Friday, December 22, 6 p.m.

WINTER QUARTER
Registration day..............................Wednesday, January 3
Instruction begins..........................Thursday, January 4, 8 a.m.
Regular Meeting of the Faculty............Tuesday, January 30, 4 p.m.
Mid-quarter Scholarship Reports...........Friday, February 9
Washington's Birthday, holiday............Thursday, February 22
Regular Meeting of the Faculty............Tuesday, March 13, 4 p.m.
Examinations for Admission.................Monday, Tuesday and Wednesday, March 19, 20 and 21
Instruction ends..........................Wednesday, March 23, 6 p.m.

SPRING QUARTER
Registration day..............................Tuesday, March 27
Instruction begins..........................Wednesday, March 28, 8 a.m.
Regular Meeting of the Faculty............Tuesday, April 17, 4 p.m.
Campus Day..................................Friday, April 20
Mid-quarter Scholarship Reports...........Friday, May 4
Junior Day..................................Saturday, May 26
Memorial Day, holiday......................Wednesday, May 30
Regular Meeting of the Faculty............Tuesday, June 12, 4 p.m.
Examinations for Admission.................Wednesday, Thursday and Friday, June 13, 14 and 15
Instruction ends.........................Friday, June 15
Class Day and Alumni Day...................Saturday, June 16
Baccalaureate Sunday.........................Sunday, June 17
Commencement...............................Monday, June 13

SUMMER QUARTER
Registration day..............................Tuesday, June 19
Instruction begins..........................Wednesday, June 20, 8 a.m.
Independence Day, holiday..................Wednesday, July 4
First term ends, second term begins.......Friday, July 27
Instruction ends..........................Friday, August 31
THE BOARD OF REGENTS

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

RUTH KARR McKEE, Vice-President............................................Olympia
Term ends March, 1923

WINLOCK W. MILLER .................................................................Seattle
Term ends March, 1926

ROGER R. ROGERS .................................................................Spokane
Term ends March, 1926

WERNER A. RUPP .................................................................Aberdeen
Term ends March, 1927

OSCAR A. FECHTER .................................................................Yakima
Term ends March, 1928

JAMES H. DAVIS .................................................................Tacoma
Term ends March, 1928

WILLIAM MARKHAM, Secretary to the Board

COMMITTEES OF THE BOARD OF REGENTS

March 1922 to March 1923

AUDITING AND FINANCE..........................................................Davis (chairman), Shannon, Miller

BUILDINGS AND GROUNDS.......................................................Miller (chairman), Rupp, Shannon

COOPERATIONS.................................................................Shannon (chairman), McKee, Davis

DEMONSTRATION FOREST.......................................................Rupp (chairman), Fechter, Miller

EDUCATION.................................................................McKee (chairman), Fechter, Rogers

LANDS.................................................................Rupp (chairman), Rogers, McKee

METROPOLITAN BUILDING CO..................................................Fechter (chairman), Rupp, Miller

PUgetsound Biological Station.............................................Davis (chairman), Fechter, Rogers

STUDENT WELFARE..............................................................Rogers (chairman), McKee, Davis
OFFICERS OF ADMINISTRATION

The University

HENRY SUZZALLO, Ph.D., LL.D. ............... President of the University
Education Hall

JOHN THOMAS CONDON, LL.M. ................... Dean of Faculties
Education Hall

HERBERT THOMAS CONDON, LL.B. ............... Comptroller
Education Hall

EDWARD NOBLE STONE, A.M. .................... Registrar
Education Hall

EDWIN BICKNELL STEVENS, A.M. ................. Executive Secretary
Education Hall

JAMES EDWARD GOULD, A.M. ..................... Dean of Men
Education Hall

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

The Colleges and Schools

DAVID THOMSON, B.A. ......................... Dean of the College of Liberal Arts
Denny Hall

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

STEPHEN IVAN MILLER, LL.B., A.B. .......... Dean of the College of Business Administration
Commerce Hall

FREDERICK ELMER BOLTON, Ph.D. ........... Dean of the School of Education
Education Hall

CARL EDWARD MAGNUSSON, Ph.D., E.E. .... Dean of the College of Engineering
Engineering Hall

IRVING MACKEY GLEN, A.M. ..................... Dean of the College of Fine Arts
Music Building

JOHN NATHAN COBB ......................... Director of the College of Fisheries
Fisheries Hall

HUGO WINKENWERDER, M.F. .................. Dean of the College of Forestry
Forest Products Laboratory

MATTHEW LYLE SPENCER, Ph.D. ............ Director of the School of Journalism
Commerce Hall

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

WILLIAM ELMER HENRY, A.M. ............... Director of the Library School
Library

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

FREDERICK MORGAN FADELFORD, Ph.D. .... Dean of the Graduate School
Denny Hall
OFFICERS OF ADMINISTRATION

ASSISTANT ADMINISTRATIVE OFFICERS

JAMESGAUSEFF PLETCHER, A.B. ......................Vocational Secretary
ROBERTWILLIAM RENDLE, A.B. ......................Editorial Secretary
THOMAS LATTIMERE KOLLER, Ph.D. .................Assistant Dean, College of Business Administration
MARY WHITNEY ..................Assistant Dean of Women
LILLIAN BROWN GILBERT ..................Secretary to the President
MAX HEPKEN ..................Assistant Purchasing Agent
WILLIAM BLAIR JONES, A.B. ..................Cashier
AZRAS WILSON ..................Secretary to the Comptroller
SARA NORMA MARIE, A.B. ..................Assistant Registrar

BETTY GILBERT, B.S.A. ..................Secretary to the Registrar
LOIS J. WENTWORTH ..................Secretary to the Dean of the Graduate School
EDITH THOMAS ..................Acting Assistant Dean of Women

LIBRARY STAFF

WILLIAM ELMER HENRY, A.M., (Indians) ..................Librarian and Director of the Library School
CHARLES E. FRASER, A.B., R.L.S., (Illinois) .............Reference Librarian and Associate Professor of Library Economy
EMMA PEARL MCDONNELL, A.B., (Washington) ..........Periodicals Librarian
ROGERSON SPENCER, A.B., (Wisconsin), B.L.S., (Illinois) ....Catalogue Librarian and Instructor in Library Economy
ELLEN F. HOWES, A.B., (Washington), (Carnegie Library School) ....Assistant Reference Librarian and Instructor in Library Economy
LYDIA M. HICKMAN, A.B., (Iowa), (Washington Library School) ....Assistant Reference Librarian
**BARBARA BOLLES COTTON, A.B., (Boston), B.S. (Simmons) ..................First Assistant Cataloguer
MARGARET ALPHONSO, A.B., (Nebraska) ..................Circulation Librarian
MARIANNE PUTNAM, A.B., (Washington) ..................Order and Accession Librarian
EDNA STONEBROOK, A.B., (California), (Los Angeles Library School) ...........First Assistant Circulation Librarian
MARIANNE JEANETTE EINKE, A.B. (Washington); (New York Public Library) ....Assistant in Circulation
EVA BACHMANN, A.B. (Washington) .............Assistant in Circulation
VIOLA HANSEN, B.L.S. (Washington) ..............Assistant in Circulation
FRANCIS ALLEN TOWN, A.B. (College of Puget Sound) ........Assistant in Cataloguing
AVERY WHITESIDE, B.Ed. (Washington) .............Assistant in Cataloguing

THE MUSEUM

FRANK STEVENS HALL ..................Director of the Museum
CLARENCE JOHN A. BOWLEY .................Curator of Zoological Exhibits
SAMUEL F. RATHBUN ..................Honorary Curator of Birds
MARTHA FLAHARTY, A.B. ..................Assistant

THE EXTENSION SERVICE

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

ENGINEERING EXPERIMENT STATION

CARL EDWARD MAGNUSSON, Ph.D. ..................Director

UNITED STATES ARMY RESERVE OFFICERS' TRAINING CORPS

CHARLES LEONARD PHILLIPS ..................Colonel, U.S.A., Retired
SAMUEL WHITMAN FLINT ..................Lieut.-Colonel, Infantry, D.O.L
WILSON FRANK ..................Lieut.-Colonel, U.S.A., Retired
THOMAS BRUCE ESTY ..................Lieut.-Colonel, U.S.A., Retired
HENRY CLINTON RUSSELL MEHLENBERG ..........Major, Air Service, D.O.L
WILLIAM DAVID FRASER ..................Major, C.A.C., D.O.L
EDWARD BENNETT DENNIS ..................Major, C.A.C., D.O.L
KEITH SUMNER GIBSON ..................Major, U.S.A., Retired
HAROLD FOSTER ..................Captain, Infantry, D.O.L
WILLIAM JOHN HALL ..................Captain, Infantry, D.O.L
JOHN EDWARD NOLEN ..................First Lieutenant, Infantry, D.O.L
BRYAN SiWALL HALTER ..................First Lieutenant, Infantry, D.O.L
HARRY B. WHITE ..................Warrant Officer, U.S.A.
EARL THOMAS ..................First Sergeant, D.M.M.L
RML H. WUNDERLICH ..................Quartermaster Sergeant, Retired, U.S.A
WALTER LANG ..................Sergeant, D.M.M.L
CHARLES BOYCE ..................Sergeant, D.M.M.L

**Absent Winter and Spring Quarters.
RAY A. BAILST ........................................ Sergeant, D.E.M.L.
LESTER A. KENT ........................................ Sergeant, D.E.M.L.
WILLIAM G. PALMS ........................................ Sergeant, D.E.M.L.
HARRY BROOD ........................................ Sergeant, D.E.M.L.
CHARLES FREEMAN ........................................ Private, First Class, D.E.M.L.
WILLIAM H. HONEAS ........................................ Private, First Class, D.E.M.L.
VERNON W. PAYNS ........................................ Private, First Class, D.E.M.L.
PATRICK J. MAUGHAN ....................................... Private, First Class, D.E.M.L.

UNIVERSITY OF WASHINGTON STATION OF THE UNITED STATES FOREST SERVICE
CONRAD W. ZIMMERMAN, A.B. ......................Engineer in Timber Tests, in charge

NORTHWEST EXPERIMENT STATION UNITED STATES BUREAU OF MINES
CLYDE E. WILLIAMS, B.S. .................................... Superintendent
EDWARD P. BARRIETT, B.S. .................................... Metallurgical Chemist
CLARENCE E. SIMS, B.S. .................................... Electrometallurgist
EARL R. MCMILLAN, B.S. .................................... Mining Engineer
BYRON M. BIRD, B.S. .................................... Junior Mining Engineer
ARVID E. ANDERSON, B.S. .................................... Junior Chemist
JOHN C. SCHONING ........................................... Foreman, Mine Safety Station

STATE CHEMIST
CHARLES WILLIS JOHNSON, Ph.C., Ph.D. .................... State Chemist
JOHN ROBIN WILKES, B.S. .................................... Assistant State Chemist and Bacteriologist
GEORGE HERBERT NIXHAM .................................... Assistant State Chemist

UNITED STATES VETERANS' BUREAU REHABILITATION DIVISION
GLEN R. HOEYER, LL.B. ....................................... In Charge

BUILDINGS AND GROUNDS
FREDERICK ELWELL ........................................ Superintendent
NORMAN DONALD MCKIBBEN ................................ General Foreman
SANDY MORROW KANE ........................................ Engineer
L. R. KETTNERING ........................................ Electrician
STANLEY C. CARPENTER .................................... Head Carpenter
GEORGE WAREH ............................................. Head Gardener

UNIVERSITY DINING AND RESIDENCE HALLS
RUTH MARGARET LUSBY, A.M. ......................Supervisor of Dining Halls

UNIVERSITY HEALTH SERVICE
DAVID CONNELL HALL, M.D. ......................University Health Officer
LIJIAN COLLISON IRWIN, M.D. ......................Medical Examiner for Women
MAUDS NEESE, R.N. .................................. Resident Nurse
AGNES JACOBS, R.N. .................................. Public Health Nurse
UNIVERSITY FACULTY

In this list the names of the faculty are arranged in six groups—professors, associate professors, assistant professors, associates, lecturers, and instructors—followed by the names of the assistants and teaching fellows. In each of the six groups the names occur in the order of academic seniority. An alphabetical list of the faculty is given on page 15.

HENRY SUEZALLO, President of the University, ex-officio Chairman.
EDWARD NOBLE STONE, Registrar, ex-officio Secretary.

PROFESSORS

HENRY LAMBER
EDMOND STEPHEN MONTY
J. ALLEN SMITH
CAROLYN HYATT CHER
JOHN THOMAS CONDON
TIFTON KINGCIO
FREDERICK MORGAN PATELFORD
MILTON ROBERTS
WILLIAM SAVORY
FREDERICK ARTHUR OSBORN
DAVID THOMSON
CHARLES WILLIS JOHNSON
FREDERICK LAWSON BARNES
THEODORE CHRISTIAN FAEY
ROBERT EDWARD MOORE
CARL EDWARD MALTHUSON
HARVEY LAMTS
EVERETT OWEN EASTWOOD
WILLIAM SIMMON HENRY
DAVID CONDOLY HALL
HERBERT HENRY GOWIN
OLIVER HUNTINGTON RICHARDSON
IAN WILSON GODWIN
IRVING MACKENZIE GLEN
EDWIN AUGUSTUS STACEY
CHARLES CURTIS MORGAN
HENRY KIMMEL DIBSON

ASSOCIATE PROFESSORS

LOREN DOUGLAS MILLMAN
THOMAS KAY SHAW
EDWARD MAHAGON
CHARLES WESLEY SMITH
ARTHUR WILSON LENTON
GEORGE SAMUEL WILSON
GEOLOGY WALLIS UMBREY
OTTO FATHER
CHARLES WILIAM HARRIS
VANDERBILT CURTIS
EDGAR ALLEN LOEW
JOSEPH DANIELS
EDWARD GODFREY COX
ALLEN FULKES CARPENTER
HENRY LOUIS BISKEL
GEORGE HURST HUG
CARL GOULD

ASSISTANT PROFESSORS

†EDWIN JAMES SAUNDERS
GEORGE IRENE GARY
EDWIN VICTOR SMITH
HARVEY BRUCE DUNMORE
CLARENCE RAYMOND COBB
GEORGE GOLDEN DENT
FRED WASHINGTON KENNEDY
HERBERT OTTO BOKELMAN

†Absent on leave 1921-22.
*Absent Fall Quarter, 1921-22.
**Absent Winter and Spring Quarters, 1921-22.
†Absent Spring Quarter, 1921-22.
‡Died, January 26, 1922.

†Absent on leave 1921-22.
*Absent Fall Quarter, 1921-22.
**Absent Winter and Spring Quarters, 1921-22.
†Absent Spring Quarter, 1921-22.
‡Died, January 26, 1922.

†Absent on leave 1921-22.
*Absent Fall Quarter, 1921-22.
**Absent Winter and Spring Quarters, 1921-22.
†Absent Spring Quarter, 1921-22.
‡Died, January 26, 1922.
UNIVERSITY OF WASHINGTON

ASSISTANT PROFESSORS (continued)

SENIOR: Burton Clark
†Mary Millmore Skinner
Cold: John Douglas
Eddy: Leonard Grondal
Fred Harvey Hatke
†Leslie Forrest Curtis
†George Hewitt Jenkinson
Edwin Ray Guthrie
†Frank DeMittius Hayden
Carl Paige Wood
Thomas Gordon Thompson
†Delbert Nickson
Virginia Cunningham Patty
Elizabeth Amsen
Hewitt Wilson
Mary Emma Gross
William Frease
Ira Leonard Collier
George Edward Goodspeed
Charles Cullerson May
John Charles Rathbun
Curtis Talmage Williams
Eldin Vernon Lynn

LECTURERS AND ASSOCIATES

Havert Glenn
Joseph Grattan O'Brien
Frederick Powell
Conrad Zimmeman
Lillian Collison Irwin
Lillian Bloom
Winifred Sunderland Haggert
Millard Strobel
John Victor Palmar
James Wehn
Eugenia Woehman
Elden Glen Miller
Fred Falconer Wild
Ambrose Patterson
Byrle Sanderson Radford
Mathew Whitehead
James McConathy
William Bennett Henderson
Emuel Jackson Needham
Chauncey Whittlock
Edwin Leonad Stansberg
Pamela Jones
Sybil Keppeler
Guertude Browning
Alice Henson Ernest
Bethia Almen Vickniss
Bessa Dahlen

INSTRUCTORS

Samuel Thomas Brattin
Sandy Morrow Kand
Walker Bell Whittlesey
Lloyd LeRoy Small
Frank Joseph Laver
Harold Oden Sexsmith
Allisia Gilleott
Albert Foster Adams
Louise Van Oals
Annibelle Edens
Robert Pulson McClureland
James Baker Hamilton
Gordon Russell Shuck
Martha Desslar
Forest Jackson Goodrich
†Arthur Willis Barton
Clinton Louis Utterback
Robinson Spencer
Ellen Bowd

†Died, Feb. 14, 1922.
†Resigned, March 31, 1922.
†Absent on leave 1921-22.
### Instructors (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>George Whitwell</td>
<td>Bachelor</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Sargent Powell</td>
<td>Bachelor</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Henry Stager</td>
<td>Bachelor</td>
<td>English</td>
</tr>
<tr>
<td>John Gerald Driscoll, Jr.</td>
<td>Bachelor</td>
<td>Education</td>
</tr>
<tr>
<td>Maurice Richardson</td>
<td>Bachelor</td>
<td>Fine Arts</td>
</tr>
<tr>
<td>Elsa Jane Seidson</td>
<td>Bachelor</td>
<td>Fine Arts</td>
</tr>
<tr>
<td>William Woodbridge Edy</td>
<td>Bachelor</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Byron Towne McMinn</td>
<td>Bachelor</td>
<td>English</td>
</tr>
<tr>
<td>Robert Harold Edmonds</td>
<td>Bachelor</td>
<td>English</td>
</tr>
<tr>
<td>Gloria V. Nigut T. de Solenni</td>
<td>Bachelor</td>
<td>English</td>
</tr>
<tr>
<td>Von Valen Tadell</td>
<td>Bachelor</td>
<td>Fine Arts</td>
</tr>
<tr>
<td>Albert Kalin</td>
<td>Bachelor</td>
<td>English</td>
</tr>
<tr>
<td>George Leslie Board</td>
<td>Bachelor</td>
<td>English</td>
</tr>
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<td>Clarissa Lester White</td>
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<td>Lois CL€Bx</td>
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<td>J'0Hlr GBlULD DRISCOLL, J'n.</td>
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<td>GBOnGJIl wn.oox, H.B</td>
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<td>RAy TURGE, B.S.</td>
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<td>GBANT B1J'l'1'BBlJAuoir,</td>
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<tr>
<td>Eva S. CAIR, B.S.</td>
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<tr>
<td>Louis CLARK, A.M.</td>
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<tr>
<td>GERMANE3 MBurch, B.S.</td>
<td>Bachelor</td>
<td>Economics</td>
</tr>
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### Assistants

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<tr>
<th>Name</th>
<th>Degree</th>
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<tbody>
<tr>
<td>Louise Dow Benton</td>
<td>Bachelor</td>
<td>Music</td>
</tr>
<tr>
<td>Clara Bunch</td>
<td>Bachelor</td>
<td>Music</td>
</tr>
<tr>
<td>Constance Olds Bernham</td>
<td>Bachelor</td>
<td>English</td>
</tr>
<tr>
<td>Elva CLauKm, A.B.</td>
<td>Bachelor</td>
<td>Gatzert Foundation</td>
</tr>
<tr>
<td>Elma DICK</td>
<td></td>
<td>Accompanist in Music</td>
</tr>
<tr>
<td>John Carl Ely, B.P.A.</td>
<td></td>
<td>Fine Arts</td>
</tr>
<tr>
<td>Helen E. Forsman, B.M.</td>
<td></td>
<td>Music</td>
</tr>
<tr>
<td>Marjorie Forchemus, A.B.</td>
<td></td>
<td>Physical Education</td>
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<tr>
<td>Arthur Herman, A.B.</td>
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<td>Architecture</td>
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<tr>
<td>Paul Hogis, B.S.</td>
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<td>Physics</td>
</tr>
<tr>
<td>Donald Hoofer, L.L.</td>
<td></td>
<td>Debating Coach</td>
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<tr>
<td>Howard Hart Hungerford</td>
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<td>Golf Teacher</td>
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<tr>
<td>William Jefferson</td>
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<td>Engineering</td>
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<tr>
<td>Betty Jones, A.B.</td>
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<tr>
<td>Beth Moorland, A.B.</td>
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<tr>
<td>Leslie Marchand</td>
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<td>English</td>
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<tr>
<td>Kristin Newberry, B.S.</td>
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<tr>
<td>Martha N. Noffke, B.S.</td>
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<tr>
<td>Elizabeth Stair, B.S.</td>
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<td>Bacteriology</td>
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<tr>
<td>Anna Alphida Storm</td>
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<td>Design</td>
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<td>Clayton Sullivan</td>
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<td>Mechanical Engineering</td>
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<tr>
<td>Myron Henry Wenzel</td>
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<td>Woodshop</td>
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<tr>
<td>Mads Wilkinson, M.S.</td>
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<td>Gatzert Foundation</td>
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<tr>
<td>Florence BURGH WILSON, B.M.</td>
<td></td>
<td>Music</td>
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</table>

### Teaching Fellows

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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Julia FISHER, A.B.</td>
<td></td>
<td>Philosophy</td>
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<tr>
<td>Gladie HEPBURN FOSTER, A.B.</td>
<td></td>
<td>French</td>
</tr>
<tr>
<td>Louis HANTER, B.S.</td>
<td></td>
<td>Chemistry</td>
</tr>
<tr>
<td>GEHThUD KRAFFT, A.B.</td>
<td></td>
<td>German</td>
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<tr>
<td>echo PEPPER, B.S.</td>
<td></td>
<td>Mathematics</td>
</tr>
<tr>
<td>Dennis TROTH, B.Ed.</td>
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<td>Education</td>
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<tr>
<td>Helen WATrY, B.S.</td>
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<td>Botany</td>
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<tr>
<td>LEOMA SUNDIQUST, A.B.</td>
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<td>Chemistry</td>
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<tr>
<td>FEnnLY TATUM, A.B.</td>
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<tr>
<td>Joan SuLLYAN, B.S.</td>
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<tr>
<td>Lisa DUBJENT, B.S.</td>
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<tr>
<td>William DOLL, A.B.</td>
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<tr>
<td>Paul ELLSWORTH, A.B.</td>
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<td>Psychology</td>
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<td>Don MAGILL, B.S.</td>
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<tr>
<td>Clinton EUMmERT, B.S.</td>
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<tr>
<td>Harry KENNED, A.B.</td>
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<td>Political Science</td>
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<tr>
<td>Arthur THORO, B.B.A.</td>
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<td>Accounting</td>
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<td>Robert BAGHERLO, A.M.</td>
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<td>William DICKERSON, B.B.A.</td>
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<tr>
<td>Fred FELLows, A.B.</td>
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<td>Money and Banking</td>
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<td>Ground WILCOX, M.B.A.</td>
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<tr>
<td>Helen FULTON, B.S.</td>
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<td>Bacteriology</td>
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<td>Edith JOHNSON, B.S.</td>
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<tr>
<td>Ray TURGE, B.S.</td>
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<td>George BURGESS, A.B.</td>
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<tr>
<td>Eva S. CARE, B.S.</td>
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<td>Louis CLARK, A.M.</td>
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<td>Botany</td>
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<td>Germaine MACH, B.S.</td>
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</table>
UNIVERSITY OF WASHINGTON

PAULINE JONES, B.S. ...........................................Spanish
RUBY BOHART, B.S. .........................................Bacteriology
RUTH DAVIS, B.S. .............................................Pharmacy

GRADUATE SCHOLARS
ROY HALL, A.B. ...............................................Business Administration
WILLIAM SPENCER, A.B. ...............................Business Administration

RESEARCH FELLOWS
WILLIAM MCCULLOUGH, B.S. .........................Mining (Coal Washing)
HERNAND MARTIN LARSEN, B.S. ...........................Mining (Electrometallurgy)
JOHN HERBET ALDEN, B.S. ............................Mining (Electrometallurgy)
ALBERT LES BENNETT, B.S. ............................Mining (Ceramics)

LORETTA DENNY FELLOWS
ELIAS THORLEIF RUND ANNESSON, A.B. .................History
LOIS WILFRED GRIFFITHS, B.S. ..........................Mathematics
WILLIAM CHAPIN COLLINS, A.B. ........................Journalism

ARTHUR A. DENNY FELLOWS
GEORGE ELWYN LAIRD, B.S. .............................Civil Engineering
HOWARD RALPH GOOLD, A.B. ..............................Education
ALEXANDER HOWARD MONNELL, A.B. ........................History
ESTHER LOTHIAN ABBEY, B.S. ............................Pharmacy
LYALL WESTLEY ZICKMICK, B.S. ........................Metallurgy

DU PONT FELLOWSHIP
WILLIAM CAVANAUGH McINDOE, B.S. .................Chemistry
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 POSTER ADAMS .................................. Instructor in Music

MARY LAURA AID ........................................ Instructor in Physical Education

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.

ELIZABETH AMHERST .................................... Assistant Professor of Home Economics
B.S., Wisconsin, 1913.

CLARENCE LOUIS ANDERSON .............................. Instructor in Fisheries
B.S., Washington, 1917.

LOU EASTWOOD ANDERSON .............................. Acting Instructor in Physical Education
Valparaiso; Washington.

SAMUEL HERBERT ANDERSON ............................ Assistant Professor of Physics
A.B., Park College, 1892; A.M., 1893; Ph.D., Illinois, 1912.

JAMES ARTHURNOT ........................................ Director of Physical Education for Men
B.S., Kansas State College, 1904.

EVERSHARD ARMSTRONG ................................. Lecturer in Journalism
B.S., Delaware, 1916.

FRED CARLTON ATW ...................................... Professor of Education
B.S., Upper Iowa University, 1902; M.S., Georgetown University, 1905; Ph.D., Chicago, 1915.

LESLIE JAMES ATW ........................................ Professor of Law
B.S., Upper Iowa University, 1899; M.D., Chicago, 1905.

ENNOB BAGSHAW ........................................ Associate Professor of Physical Education
B.S., (M.E.), Washington, 1908.

ARTHUR WILLIS BANTON ................................ Instructor in Chemistry
Ph.G., Washington, 1897; A.B., 1902; Ph.D., Northwestern, 1918.

SAMUEL THOMAS BARTLE ................................ Instructor in Woodwork
A.B., Stanford, 1897.

ENIO TEMPLE BULL ....................................... Associate Professor of Mathematics

ALLEN ROGERS BENHAM ................................. Professor of English
A.B., Minnesota, 1900; A.M., 1901; Ph.D., Yale, 1905.

HENRY KERRIUS BENSON ............................... Professor of Chemical Engineering
A.B., Franklin and Marshall, 1889; A.M., 1902; Ph.D., Columbia, 1897.

CLARK PERSCOTT BISSETT .............................. Professor of Law
A.B., Hobart College, 1896.

RALPH MASON BLAIR .................................... Instructor in Philosophy

LILLIAN BLOOM .......................................... Associate in Physical Education
Graduate, Medical Gymnastic Institute, Stockholm.

FREDERICK ELMAR BOLTON ............................ Professor of Education and Dean of the School of Education
B.S., Washington, 1898; M.S., 1898; Ph.D., Clark, 1898.

HENRY LOUIS BUACKI .................................... Associate Professor in Engineering Physics
A.B., Olivet, 1902; A.M., Washington, 1905; Ph.D., Cornell, 1912.

ROBERT QUINCY BROWN ................................ Instructor in Civil Engineering
B.S., (E.E.), Washington, 1918.

BERNARD BROWNING ..................................... Associate in English
A.B., Cornell, 1910; A.M., Columbia, 1914.

ELIZABETH CAMPBELL ................................... Instructor in Design
School of Industrial Arts, Pennsylvania Museum, Philadelphia.

HARRIET fuller CAMPBELL ......................... Associate Professor of Mathematics
A.B., Hastings, 1901; A.M., Nebraska, 1909; Ph.D., Chicago, 1915.

ELIAS TREAT CLARK ..................................... Associate 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.
JOHN NATHAN COBB ..........................Professor of Fisheries and Director of the College of Fisheries

ETHEL HUNLEY COWDELL ..........................Dean of Women
B.L., Mills College, 1894; A.M., Stanford, 1899.

IRA LEONARD COLLINS ..................................Assistant Professor of Civil Engineering
B.S., (C.E.), Washington, 1913; C.B., 1917.

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 CORST ..................................Assistant Professor of Mining and Metallurgy

EDWARD GODFREY COX ..........................Associate Professor of English
A.B., Wabash, 1899; A.M., Cornell, 1901; Ph.D., 1906.

WILLIAM EDWARD COX ..........................Associate Professor of Business Administration

CLYDE MYRON CREAMER ..................................Associate in Mathematics

Leslie Forrest Curtis ..........................Assistant Professor of Electrical Engineering

VanDyke Curtis ..........................Associate Professor of Economics
A.B., Harvard, 1901; A.M., 1902; Ph.D., 1905.

Irma Darlin ..................................Associate Professor of History

Forest Charles Dana ..........................Instructor in Civil Engineering
B.S., (C.E.), Washington, 1914.

Joseph Daniels ..................................Associate Professor of Mining Engineering and Metallurgy
S.B., Massachusetts Institute of Technology, 1905; M.S., Lehigh, 1909.

Pearce Craig Davis ..................................Lecturer on Accounting (autumn and winter quarters)
C.P.A., 1914.

William Maurice Dillin ..........................Professor of Organic Chemistry
A.B., Hope, 1893; A.M., 1896; Ph.D., Illinois, 1903.

Edward Bennett Dennis, Major, C.A.C., U.S.A., Assistant Professor of Military Science and Tactics
B.S., Case School of Applied Science, 1907; LL.B., Cleveland Law School, 1910.

Giacomo Denny ..................................Assistant Professor of Home Economics
A.B., Nebraska, 1907; A.M., Columbia, 1919.

Harvey Bruce Denman ..........................Assistant Professor of Greek
A.B., Oxford, 1907.

Louis Peter de Veer ..................................Assistant Professor of Romance Languages
A.M., Wisconsin, 1911; Ph.D., 1913.

Francis Dickey ..................................Assistant Professor of Music
Graduate, Iowa State Teachers College, 1901; B.S., Columbia, 1912; A.M., 1913.

Chris Greenside Dobson ..........................Instructor in Civil Engineering
B.M., Montana, 1915.

Oscar Eldridge Draper ..........................Instructor in Business Administration
M.Acc., Vories Business College.

Carl Zeno Draves ..................................Associate in Chemistry

Martha Estella Dresslar ..........................Instructor in Home Economics
B.A., Southern California, 1918; B.S., Washington, 1917; M.S., Teachers College, Columbia, 1918.

John Gerald Doss, Jr. ..........................Instructor in Accounting
A.B., Stanford, 1918; LL.B., 1920.

Curt John Ducasse ..........................Assistant Professor of Philosophy

Everett Owen Eastwood ..........................Professor of Mechanical Engineering
C.E., Virginia, 1896; A.B., 1897; A.M., 1899; S.B., Massachusetts Institute of Technology, 1892.

Ernest Otto Eckelmann ..........................Assistant Professor of German
A.B., Northwestern (Watertown, Wis.), 1897; B.L., Wisconsin, 1898; Ph.D., Heidelberg (Germany), 1906.

William Woodbridge Edy ..........................Instructor in History

Annice Edens ..........................Instructor in Drawing
New York School of Fine and Applied Arts, Columbia.
ROBERT HAROLD GRAY EDMONDS .................. Instructor in Mechanical Engineering B.S., W BALTIMORE, 1915.
CLARENCE EDMUNDSON .......................... Associate in Physical Education B.S., Idaho, 1910.
WILLARD HENRY ELLIS ......................... Instructor in Physics B.S., (E.E.), California, 1914.
RUDOLPH HERBERT ELLIS ...................... Assistant Professor of English A.B., Northwestern (Wartown, Wi.), 1904; A.M., Harvard, 1911; Ph.D., 1919.
THOMAS BRUCE EMT, Lieutenant Colonel, U.S.A., Retired, Assistant Professor of Military Science College of the City of New York.
VICTOR JOHN FARRER ......................... Associate in Historical Research A.B., Wisconsin, 1911; A.M., 1912.
RAYMOND FORREST FARWELL ............... Associate in Maritime Commerce A.B., California, 1920.
LAWRENCE FISHER .......................... Lecturer on Geology (winter quarter) A.B., Ohio Wesleyan, 1900.
EMIL JACOB FORMAN ..................... Extension Lecturer on Water Transportation William DAVID FROST, Major, C.A.C., U.S.A., Assistant Professor of Military Tactics B.S., (C.E.), Michigan Agricultural College, 1900.
PHILIP JOSEPH FRANK ................... Professor of Roman Languages A.B., Williams, 1899; Ph.D., Johns Hopkins, 1899.
THEODORE CHRISTIAN FREY .............. Professor of Botany B.S., Illinois, 1894; Ph.D., Chicago, 1902.
ZALTA JENKINS GAYLOR ................. Acting Instructor in Chemistry (spring quarter) B.S., Chicago, 1913; M.S., Washington, 1918; Ph.D., Yale, 1931.
ROBERT MAX GARDNER ................. Associate Professor of English A.B., Iowa, 1922; A.M., Washington, 1903; Ph.D., Munich, 1909.
GEORGE IVING GAVITT ......... Assistant Professor of Mathematics A.B., (C.E.), Michigan, 1893.
IRVING MACKAY GLEN .................... Professor of Music; Dean of the College of Fine Arts A.B., Oregon, 1894; A.M., 1897.
HARVEY GLENN .......................... Lecturer in Assaying of Bullion B.S., Iowa State College.
SHELTON LATTA GLOVER .............. Associate in Geography B.S., Washington, 1919.
CHARLES GOOGIO .................... Associate Professor of Roman Languages A.B., Harvard, 1910; A.M., Wisconsin, 1914; Ph.D., 1918.
IVAN WILLIS GOODNICK .................... Professor of Law LL.B., Nebraska, 1897.
FOREST JACKSON GOODBODY .......... Instructor in Pharmacy Ph.C., Washington, 1913; B.S., 1914; M.S., 1917.
GEORGE EDWARD GOODSPREAD, JR. .......... Assistant Professor of Geology B.S., (Min.E.), Massachusetts Institute of Technology, 1910.
WILLIAM PIERRE GOLDBACH ............... Professor of Dramatic Art A.B., Knox, 1898.
CARL Festing HUTCHINSON GOELL .......................... Associate Professor of Architecture A.B., Harvard, 1898.
HERBERT HENRY GOWIN .................. Professor of Oriental History, Literature and Institutions St. Augustine's College (Canterbury); D.D., Whitman College, 1912.
KEITH SIMON GREGORY, Captain, Infantry, U.S.A., Assistant Professor of Military Science and Tactics Graduate, U.S. Military Academy, 1903.
Charles Willas Johnson, Professor of Pharmaceutical Chemistry and Dean of the College of Pharmacy
Ph.G., Michigan, 1896; B.S., 1900; Ph.D., 1903.

Pamilla Pearl Jones .................. Associate in English
A.B., Iowa, 1906; A.M., 1908.

Robert William Jones .................. Assistant Professor of Journalism
A.B., Missouri, 1908; LL.B., 1913; A.M., South Dakota, 1918.

Albert Kalin .................. Instructor in Electrical Engineering
B.S., Washington, 1919.

Sandy Morrow Kanz .................. Instructor in Metalwork

Fred Washington Kennedy, Assistant Professor and Director of the Journalism Laboratories

Sylvia Finlay Keeshan .................. Associate in English

Thomas Latimer Kirklin, Professor of Transportation and Assistant Dean of the College of Business Administration
A.B., Randolph Macon, 1904; A.M., George Washington, 1909; Ph.D., 1918.

Trenton Kincaid .................. Professor of Zoology
B.S., Washington, 1899; A.M., 1901.

George Kirchenb .................. Instructor in Music
Leipzig.

Burh Persons Kirkland .................. Professor of Forestry
A.B., Cornell, 1896.

Friedrich Kurt Kirshen .................. Associate Professor of Electrical Engineering
B.S., Washington, 1909; B.E., 1914.

Mamtha Kohmnb .................. Assistant Professor of Home Economics
A.B., Ohio State University, 1908; A.M., 1910.

Henry Landis .................. Professor of Geology and Mineralogy and Dean of the College of Science

Harbury Lantz .................. Professor of Law
Ph.B., De Pauw, 1888; A.M., 1881; LL.B., Kent Law School, 1883.

Jakob Aall Ottersen Larsen .................. Assistant Professor of History

Frank Joseph Laubs .................. Instructor in Political Science

Edward Oscar Leider .................. Associate in Physical Education

Karl Elias Leib .................. Instructor in Business Administration

Howard Thompson Lewis .................. Professor of Business Administration

Arthur Wilson Linton .................. Associate Professor of Pharmacy
Ph.G., Highland Park, 1902; B.S., Michigan, 1909; M.S., Washington, 1910.

Edgar Allen Logw .................. Associate Professor of Electrical Engineering
B.S., (S.E.), Wisconsin, 1906.

Hinry Stephon Lucas .................. Assistant Professor of History
A.B., Olivet, 1913; A.M., Indiana, 1918; Ph.D., Michigan, 1921.

Ruth Margaret Lushy .................. Instructor in Institutional Management

Heldin Verns Lynn .................. Assistant Professor of Pharmacology and Chemistry

Olive Clinton McCaie .................. Associate in Sociology

Robert Fulton McClennand .................. Instructor in Architecture
Massachusetts Institute of Technology.

James McConnahy .................. Lecturer on Business Administration

Vivian McGill .................. Associate in Philosophy
A.B., Washington, 1921.

Horace Donald McGise .................. Associate in Business Administration

Harry John McIntyre .................. Instructor in Mechanical Engineering
ROSEBRICK DUNCAN MCKENZIE .......................... Associate Professor of Sociology 
A.B., Manitoba, 1912; Ph.D., Chicago, 1920.

EDWARD MCMAHON .......................... Associate Professor of American History 

THERESA SCHMID MCMAHON .......................... Assistant Professor of Economics 

FREDERICK ANSTEN McMILLIN .......................... Acting Instructor in Chemistry 
A.B., Willamette, 1916; M.S., 1917.

BRYA TOWNES McMILLIN .......................... Instructor in Mechanical Engineering 
B.S., Oregon Agricultural College, 1918.

CARL EDWARD MAGNUSSON .......................... Professor of Electrical Engineering and Dean of the College of Engineering 
B.B.E., Minneapolis, 1896; M.S., 1897; D.E., 1905; Ph.D., Wisconsin, 1906.

SHERIDEN DERY MAIZE .......................... Major, U.S.A., Assistant Professor of Military Science and Tactics

ROBERT LEW MATHews .......................... Associate Professor of Physical Education

CHARLES CULBERTSON MAY .......................... Assistant Professor of Civil Engineering 

EDMOND STEPHEN MEANY .......................... Professor of History 
B.S., Washington, 1886; M.S., 1889; M.L., Wisconsin, 1901.

GINO VINCENz MEDICI DE SOLDERI .......................... Instructor in Romance Languages 
A.B., Ohio State University, 1914; A.M., 1915.

JANNE ANNE MERCIIER .......................... Associate in French 
B.S., Whitman, 1930.

STEPHEN IVAN MILLER .......................... Professor of Economics and Dean of the College of Business Administration 

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

CHARLES CHURCH MORR .......................... Professor of Civil Engineering 
C.B., Lafayette, 1898; M.C.E., Cornell, 1899; M.S., Lafayette, 1901.

WILLIAM DANIEL MURPHY .......................... Associate Professor of Business Administration 
A.B., Michigan, 1904; A.M., 1905; Ph.D., 1909.

ROBERT EDWARD MURRICE .......................... Professor of Mathematics 
B.S., Hastings, 1892; Ph.B., Chicago, 1896; Ph.D., Nebraska, 1901; Ph.D., Universitat Strassburg, 1902.

HENRY CLINTON KEES MUHLENBERG .......................... Major A.S., U.S.A., Assistant Professor of Military Science and Tactics 
Graduate, U.S. Military Academy, 1908.

Hermann MuhlenberG .......................... Associate in Mathematics 
Ph.Cand., Royal University of Utrecht, Holland, 1910; Ph.D., 1913.

LEWIS IRVING NERED .......................... Assistant Professor of Mathematics 
B.S., Colorado, 1898; M.S., 1901; Ph.D., Pennsylvania, 1908.

DELLIE MICKSON .......................... Assistant Professor of Pathology 
B.S., Wisconsin, 1912; M.D., Oregon, 1917.

JOHN EDWARD NOLAN .......................... First Lieutenant, Inf., D.O.L., Instructor in Military Science and Tactics 
A.B., St. Joseph's College, 1909.

SAMUEL WHEELER NOYES .......................... Lieutenant Colonel, Inf., D.O.L., Assistant Professor of Military Science and Tactics

CAROLINE HAYEN OBER .......................... Professor of Spanish 

JOSEPH GRAVETT O'BRIAN .......................... Lecturer on Law 
A.B., Jesuit College (Denver), 1883.

FREDERICK ARTHUR O'SBORN .......................... Professor of Physics and Director of Physics Laboratories 
Ph.B., Michigan, 1896; Ph.D., 1907.

CORNELIUS OSSWALD .......................... Acting Associate Professor of Pharmacy 
Ph.G., Columbia, 1892; Ph.C., Northwestern, 1896.

FREDERICK MORGAN PAULPELD .......................... Professor of English, and Dean of the Graduate School 
A.B., Colby, 1898; A.M., 1899; Ph.D., Yale, 1899.

KATHERINE VAN WEFIELD PALMER .......................... Acting Assistant Professor of Historical Geology and Paleontology (winter and spring quarters) 
B.S., Washington, 1918; Cornell.
Vernon Louis Farrington ........................................ Professor of English

Amerigo Patterson .................................................. Associate in Fine Arts
Melbourne National Gallery, Victoria, Australia;
Julien, Colorado, and Deleuze Academies, Europe.

Virginia Cunningham Patty .......................... Assistant Professor of Home Economics
Industrial Institute and College, Columbus, Mo.
Shugnalak College, Miss.; Teachers College, Columbia.

Otto Patten .......................................................... Associate Professor of French
B.L., Wisconsin, 1888; M.A., 1899; Ph.D., 1907.

John Kenneth Pearce .......................... Acting Instructor in Forestry (spring quarter)
B.S.F., Washington, 1921.

Charles Leonard Phillips .......................... Colonel, U.S.A., Professor of Military Science and Tactics
A.B., Colby, 1878; graduate, U.S. Military Academy, West Point, 1881;
C.E., Maine, 1888; graduate, Coast Artillery School, 1890.

William Platt ................................ Major, C.A.C. U.S.A., Assistant Professor of Military Science and Tactics
Graduate, U.S. Military Academy, 1901.

Frederick Powell .................................. Lecturer on Gold Dredging
E.M., Columbia.

Sargent Powell .................................................. Associate in Chemistry

Harold Priest .................................................. Captain, U.S.A., Assistant Professor of Military Science and Tactics
Washington.

Howard Hall Preston .......................... Associate Professor of Business Administration
B.S., C.E., Iowa, 1894; A.M., Iowa, 1894; Ph.D., 1920.

Ethel Sanderson Radford .......................... Associate in Chemistry
A.B., McGill, 1895.

Esther Isabel Rait .................................. Professor of Home Economics
B.S., Columbia, 1912; A.M., 1919.

John Charles Rathbun .......................... Assistant Professor of Civil Engineering

Oliver Huntington Richardson .......................... Professor of European History
A.B., Yale, 1889; A.M., Ph.D., Heidelberg (Germany), 1897.

George Burton Riggs .................................. Associate Professor of Botany
B.S., Iowa, 1896; B.D., 1899; A.M., Washington, 1900; Ph.D., Chicago, 1914.

Alexander Chippen Roberts .......................... Associate in Education

Milnor Roberts, Professor of Mining Engineering and Metallurgy and Dean of the College of Mines
A.B., Stanford, 1898.

James Postlewait Robertson ........................ Lecturer in Accounting (fall and winter quarters)
C.F.A.

Moritz Rosen .................................................. Assistant Professor of Music
Graduate, Warsaw Conservatory, Russia

Harry Rubly .................................................. Associate Professor of Civil Engineering
B.S., (C.B.), Illinois, 1905

William Russell .......................... Acting Instructor in Business Administration
Certificate of Civil Engineering, Petrograd Institute of Roads of Communication;
Certificate, Polytechnicum of Munich, 1901.

Edwin James Saunders .................................. Assistant Professor of Geology

William Savery .................................................. Professor of Philosophy
A.B., Brown, 1880; A.M., Harvard, 1887; Ph.D., 1890.

Waldo Simon .................................................. Associate in Chemistry

Harold Ogden Swoefith .................. Instructor in Architecture
Armour Institute of Technology; Chicago Art Institute.

Gordon Russell Shuck .................. Instructor in Electrical Engineering
B.E., Minnesota, 1905.

Ella Mabel Sickels .......................... Associate in English

Thomas Key Sidby .......................... Associate Professor of Latin and Greek
B.A., Toronto, 1881; Ph.D., Chicago, 1900.

Ella Jane Simpson .......................... Instructor in Fine Arts
MACY MILMOR SKINNER ............................ Assistant Professor of Business Administration  
A.B., Harvard, 1894; A.M., 1895; Ph.D., 1897.

Lloyd Leroy SMAL ................................ Instructor in Mathematics  
A.B., Washington, 1911; A.M., 1912; Ph.D., Columbia, 1913.

CHARLES WEBLEY SMITH .. Reference Librarian and Associate Professor of Library Economy  
A.B., Illinois, 1903; B.L.S., 1906.

Eli Victor SMITH ................................ Assistant Professor of Zoology  

J. ALLEN SMITH ................................. Professor of Political Science  
A.B., Missouri, 1898; LL.B., 1897; Ph.D., Michigan, 1894.

GEORGE McPHAIL SMITH .......................... Professor of Inorganic Chemistry  
B.S., Vanderbilt, 1900; Ph.D., Freiburg, 1903.

GEORGE SHERMAN SMITH ......................... Acting Instructor in Electrical Engineering  

HARRY EDWIN SMITH ............................ Associate Professor of Business Administration  
A.B., De Pauw, 1908; Ph.D., Cornell, 1912.

STEVENSOn SMITH ............................... Professor of Psychology  
A.B., Pennsylvania, 1904; Ph.D., 1909.

ELIZABETH SOULS ................................ Associate in Nursing and Public Health  
Graduate, Malden, Massachusetts, Hospital School of Nursing, 1907.

MATTHEW LYNN SPENCER ......................... Professor of Journalism and Director of the School of Journalism  
A.B., Kentucky Wesleyan, 1903; A.M., 1904; A.M., Northwestern, 1906;  
Ph.D., Chicago, 1910.

ROBINSON SPENCER ............................ Catalogue Librarian and Instructor in Library Economy  
A.B., Wesleyan University, 1903; B.L.S., Illinois, 1918.

LesLia Sterk ................................. Assistant Professor of Anthropology  
B.S., College of City of New York, 1915; Ph.D., Columbia, 1920.

HENRY WALTER STAGER ......................... Instructor in Mathematics  
A.B., Stanford, 1902; A.M., 1906; Ph.D., California, 1909.

EDWIN AUGUSTUS STANT ......................... Director of the Extension Service  

EDWIN LEONARD STRANBERG .................... Associate in Civil Engineering  
B.S., (E.E.), Washington, 1912.

MILDRED STRUBLE ............................. Associate in English  

HERBERT ARTHUR STURGIS ...................... Instructor in Sociology  
A.B., Oberlin, 1904; A.M., 1905.

VON VALJAN TARBIll ......................... Instructor in Business Administration  

HERMAN VANCE TAYLOR .......................... Associate Professor of Chemistry  
B.S., Oregon Agricultural College, 1902; Ph.D., Chicago, 1920.

JOSEPH MARION TAYLOR ......................... Acting Instructor in Mathematics  
M.S., Adrian, 1896.

PAUL WASHINGTON TERRY ...................... Assistant Professor of Education  

JOHN HOWARD THOMPSON ....................... Instructor in Civil Engineering  
B.S., (Met.), Washington, 1919.

THOMAS GORDON THOMPSON ..................... Assistant Professor of Chemistry  
A.B., Clark, 1914; M.S., Washington, 1915; Ph.D., 1918.

DAVID THOMPSON ............................ Professor of Latin and Dean of the College of Liberal Arts  
B.A., Toronto, 1892.

ADA TILLEY ................................ Instructor in Singing  
B.Mus., Simpson, 1917.

JACK RODERICK TOLMIE ......................... Instructor in Electrical Engineering  
B.S., (E.E.), Washington.

AUGUST HERLS TRUEBLOOD .................... Acting Instructor in Civil Engineering  
B.S., (E.E.), Washington, 1918.

GEORGE WALLACE UMFREY ..................... Associate Professor of Romanic Languages  
CLINTON LOUIS UTTERMACK ........................................ Instructor in Physics
B.S., Purdue, 1908; M.S., Washington, 1918.

FRANK CHERST VAN DE WALKER .............................. Associate in Business Administration
A.B., Whittier, 1917.

LOUIS VAN OGLE ...................................................... Instructor in Music
Theoretical Work, Dr. Bridge, Chester, England; Richter, Leipzig; Piano,

ALBERT FRANZ VENNO ........................................... Assistant Professor of Music
New York Conservatory of Music; Pupil of Leschowski.

EDWIN JOHN VICKNER ........................................... Professor of Scandinavian Languages
A.B., Minnesota, 1901; A.M., 1902; Ph.D., 1905.

BERTHA ALMEN VIGGENE ....................................... Associate in English

CHARLES EDMOND WHAYE ........................................ Professor of Paleontology
B.S., California, 1904; Ph.D., 1907.

JAMES WEIN ..................................................... Associate in Modeling and Sculpture

JOHN WEINHEIL ...................................................... Professor of Bacteriology
B.S., Wisconsin, 1896; M.S., 1899; Ph.D., 1906; Dr.P.H., Harvard, 1918.

FRED FALCONER WELD ........................................... Associate in Civil Engineering
B.S., Pennsylvania State College, 1893; C.E., 1902.

CHUNCY WENNICK ............................................... Associate in Civil Engineering

EARL DOWNS WEST .............................................. Associate in Mathematics
A.B., Ohio State College, 1900; A.M., Adrian College, 1908.

CLARENCE LESTER WHITE ...................................... Instructor in Civil Engineering
B.S., (C.E.), Iowa, 1909; C.E., 1914.

WALTER BELL WHITTLISBY ................................. Instructor in French

GEORGE WHITWELL ............................................... Associate in Chemical Engineering
B.S., Massachusetts Institute of Technology, 1915.

MARION PHELPS WHITFLE .................................. Associate in Chemistry
A.B., Colorado College, 1917.

ELGIN ROSCOE WILCOX ........................................ Instructor in Civil Engineering

CURTIS TALMAGE WILLIAMS ................................. Assistant Professor of Education
A.B., Kansas State Normal, 1913; A.M., Clark, 1914; Ph.D., 1917.

GEORGE SAMUEL WILSON .................................. Associate Professor of Mechanical Engineering
B.S., Nebraska, 1898.

EDWITT WILSON .................................................. Assistant Professor of Ceramics
Cer.Engr., Ohio State University, 1913.

WILLIAM RONALD WILSON ................................. Instructor in Psychology
A.B., Washington, 1917; M.S., 1921.

ROY MARTIN WINGLE ........................................... Associate Professor of Mathematics
A.B., Baker, 1906; Ph.D., Johns Hopkins, 1912.

HUGO WINKENWEBER ........................................... Professor of Forestry and Dean of the College of Forestry
B.S., Wisconsin, 1902; M.F., Yale, 1907.

ARTHUR MELVIN WINSLOW ................................. Associate Professor of Mechanical Engineering
Ph.B., Brown, 1903; B.S., Massachusetts Institute of Technology, 1908.

CARL PAIGE WOOD .............................................. Assistant Professor of Music
A.B., Harvard, 1908; A.M., 1907.

HOWARD WOOLSTON ........................................... Professor of Sociology
A.B., Yale, 1898; S.T.B., Chicago, 1901; M.A., Harvard, 1902; Ph.D., Columbia, 1909.

JOHN LOCKE WORCESTER ........................................ Associate Professor of Anatomy
M.D., Birmingham School of Medicine, Alabama, 1890.

EUGENE HUTCHINSON WORMAN .......................... Associate in Fine Arts
Pratt Institute.

SELAH ELIZABETH WRIGHT ............................... Associate in English
A.B., Mount Holyoke College, 1918.

CONRAD ZIMMERMANN ........................................ Lecturer on Timber Physics
A.B., Washington, 1908.
BOARDS AND COMMITTEES
1922-1923

ADMINISTRATIVE BOARDS


SUMMER QUARTER ..................................Board of Deans and the Comptroller

EXTENSION ...........................................Start, Thomson, Landes, Bolton, Miller, Ratt, H. T. Condon

STUDENT WELFARE AND DISCIPLINE...Deans Condon, Thomson, Miller, Magnusson, Landes


CONSULTING ENGINEERS..................................Eastwood, Magnusson, Harris

COMMITTEES OF THE FACULTY

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

ADMISSIONS...........................................The Board of Deans

ART................................................C. Carl Gould, James Gould, Hughes, Patterson, Wehn

ASSEMBLY..............................................Spencer, Daniels, Glen, Hughes

ATHLETICS.............................................L. J. Ayer, Hall, Moritz, Dehn, May


ENTRANCE EXAMINATIONS..........................Garrett, Terry, Winger, Stone

GRADUATION.....Thomson, Landes, Magnusson, Lantz, Curtis, Kirkland, Williams, Stone

HONORS............Padelford, Goodner, Carpenter, Loew, T. S. McMahon, Rathbun, Wood, Terry

JUNIOR COLLEGES..................Padelford, Thomson, Frye, Bolton, E. McMahon

LIBRARY—Henry, Thomson, Padelford, Frye, Richardson, Patzer, Loew, Preston, C. W. Smith

PHARMACEUTICAL COURSES..................Worcester, Johnson, Winzirli, Kincaid, Hall

PUBLICATIONS—Henry, Landes, Padelford, Start, Umphrey, Desmore, Bell, Kennedy, Bender

RELATIONS WITH SECONDARY SCHOOLS.......Bolton, Thomson, Padelford, Frye, Frein, Stone

RULES................................................Benham, Goodner, Bell, More, Stone

SPECIAL STUDENTS..............The Registrar, the Dean of Men and the Dean of Women

STUDENT AFFAIRS—Thomson, Winkenwerder, Padelford, Gould, Ward, Daniels, McMahon, Loew, Haggert and eight representatives of student organizations.

STUDENT HEALTH...............................Hall, James Gould, Coldwell, Winzirli, Worcester

RHODES SCHOLARSHIPS..................Desmore, L. J. Ayer, Harrison, Larsen


MILITARY AND NAVAL AFFAIRS..........Osborn, Eastwood, More, S. H. Anderson, Harrison

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THE UNIVERSITY

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. For thirty-four years the University was located on the original tract. Throughout the later eighties it became apparent that the campus would eventually be outgrown. By 1890 both the growth of the University and Seattle's business district evinced the necessity of removing the University farther from the city where more ample grounds could be obtained.

The Legislature passed a bill on March 17, 1893, providing for the relocation, construction and maintenance of the University of Washington. An entire fractional section consisting of 355 acres, located between lakes Washington and Union, the present site of the University, was purchased. Upon the completion of Denny hall and some minor buildings the University moved September, 1895 to its present location.

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 comparatively little revenue. The income from this property will some day greatly help to support the University.

The legislature of 1921 appropriated for maintenance and operation and equipment, other than buildings, $2,506,044. This was based on a millage of .74 of a mill for the first year, and 1.10 of a mill for the second year, plus sundry receipts from certain property income.

To supplement this appropriation it became necessary to increase the tuition and sundry fees, during the biennium.

The legislature also formally appropriated the tuition and endowment receipts for the biennium for the permanent building fund and duplicated the amount of tuition collected from students for this purpose during the previous biennium. These items provided a building fund of $695,131.

The property of the University includes:

(1) The two townships of land granted by Congress in 1854. There remains of this old grant some 3,000 acres.

(2) The old University site, consisting of the tract of 8.32 acres, donated in 1861 by Arthur Denny and wife; and 1.67 acres donated by
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.

(4) The University campus consisting of 582 acres of land and waterways, upon which stand the buildings composing the present equipment of the University.

**BEQUESTS**

The Board of Regents of the University of Washington is authorized by law to receive such bequests or gratuities as may be given or granted to the University, and to invest or expend the same according to the terms of such bequests or gratuities. The Board of Regents has adopted rules to govern and protect the principal of such gifts and the income therefrom so that the same will be forever applied to the purposes designated by the donors of the gifts.

Those who desire to aid the work of the University of Washington by means of gifts *inter vivos* or by wills may do so, feeling assured that their wishes as outlined in the deed of gift or will are to be carried into effect as provided by law.

A simple statement in a will as follows:

"I give, devise and bequeath to the Board of Regents of the University of Washington the sum of ______________dollars *In Trust, However, for the following uses and purposes to be invested in securities to be approved by said Board and the interest therefrom to be expended in the maintenance of*” (scholarship or fellowship subject named), will be sufficient.

These bequests may be applied to the maintenance of scholarships and fellowships in any subject desired by the donor which meets the approval of the Board of Regents.
EQUIPMENT

GROUNDS

The Campus, comprising 582 acres, 109 of which are open water, is ample to meet every need of the University. The land is all within the city limits of Seattle, lying between Lakes Union and Washington, with a shore line of more than 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: Aerodynamical Laboratory, Anatomical Laboratory, Bagley Hall and Annex, Commerce Hall, Denny Hall, Dormitories, (Lewis, Clark, Lander and Terry), Education Hall, Engineering Hall and Annex, Extension Building, Fisheries Buildings, Forest Products Laboratory (Dry Kiln, Wood Preserving Plant, Dry Shed), Foundry and Shop Building, Gatzert Building, Good Roads Building, Gymnasium, Health Service Building, Home Economics Hall, Hydraulics Laboratory, Library, Meany Hall, Mines Hall, Mines Laboratory, Museum, Observatory, Philosophy Hall, Power House, Practice Cottage, R. O. T. C. Armory and Headquarters Buildings, Science Hall, U. S. Bureau of Mines, U. S. Mine Safety Station.

THE NEW CAMPUS PLAN

The new plan for the grouping of the Buildings for the University of Washington was prepared by direction of the Board of Regents, and with the supervision of the Faculty Committee. It was officially adopted May, 1915. The scheme is developed upon three major quadrangles, the Science Group about the axis of Mount Rainier Vista, the Administration or Library Group with Meany Hall enclosing the west side, and the Liberal Arts Group about the axis at right angles with the walk running in front of Denny Hall.

Since the adoption of the Group Plan seven buildings have been completed: Home Economics, Philosophy, Commerce and Education Halls. Four were upon the Liberal Arts Quadrangle. Locations for two additional buildings are provided and when they are constructed this quadrangle will be completed. The other three buildings completed are adjacent to the Science Group, they are Hydraulics, Forest Products and Mines Laboratories.

A portion of the Library, plans for which have been authorized, and a Women's Building will probably be the next to be constructed as funds become available.

The plan provides for foot traffic only within the quadrangles.

Automobile and service roads are provided in order to obtain access to the various groups and scenic driveways encircle the campus. The ground to the west of Montlake Boulevard is reserved for athletics of all kinds, the Stadium being the first structure located with this in view. The Gymnasium is to be placed halfway between the Academic Group and the Athletic Fields and a connection will be made by a bridge over Montlake Boulevard.

Denny Field has already been moved to conform to the Group Plan upon which the Women's Gymnasium is shown, ultimately creating a Women's Group in the northeast section of the campus, including a women's dormitory.

The northwest section of the campus is reserved for men's dormitories. Between the two groups Memorial Way is shown entering from the north as the continuation of the University Boulevard.
The general library contains 112,870 volumes, and receives 700 current magazines. About 6,000 volumes a year being added.

The Law School library contains more than 25,000 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 350,000 volumes, is open free to the University.

THE MUSEUM

The museum of the University of Washington is a museum of the arts and natural sciences. It was created the State Museum of the State of Washington by act of the Legislature in 1899. In its functions as a state, a university and a public museum, it aims to make its collections representative of the natural history, mineral resources, ethnology, history, and chief industrial activities of this region and of those countries with which this state has a commercial relationship; to furnish materials for research and study, and to interest and educate the public by its exhibitions. Its collections, illustrative of the northwest coast, are already among the most complete and valuable to be found in the United States. The museum is housed at present in the Forestry building, which was erected in 1909 for the Alaska-Yukon-Pacific Exposition. It is archaic Greek in style, following the lines of the Grecian temples, its frame consisting of large columns of native fir trees, varying from five to six feet in diameter and from forty-two to fifty-four feet in height.

The museum collections number over 100,000 specimens with an approximate value of $200,000. Extensive exhibits are arranged showing the mineral, lumbering, and horticultural resources of the state and of Alaska. An exhibit of local birds is arranged in systematic order and is illustrated by groups showing their natural habitat. Elaborate habitat groups of large animals, such as elk, bear, deer, mountain goats, cougar, etc., mounted according to the latest methods of scientific taxidermy, 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, sponges, crustaceans, mounted shells, etc. Rare specimens illustrative of the extinct mammoth and mastodon from Alaska and the state of Washington, are also on exhibition.

Ethnology—Collections illustrative of the life, arts, and industries of the Indian tribes of the northwest coast from the Columbia river northward through Arctic Alaska are arranged in tribal sequence. The Emmons Tlingit collection from Southeastern Alaska is one of the most complete from that section to be found in any museum, and the Eskimo collection from Arctic Alaska is equally rare and valuable. In addition there is a small and interesting series from the so-called Blonde Eskimos on Coronation Gulf. A collection of pottery and basketry illustrate the art of the Indian tribes of Southwestern United States.

An unusual and rare collection illustrative of the archeology of the Columbia river region of eastern Washington was recently added, through the work of a museum expedition under the supervision of Director F. S. Hall. This material together with the Stewart collection already in the museum, forms a most interesting series on the archeology of the Columbia river down to the Dalles.

The Philippine collections contain interesting specimens of Moro handicraft such as brasses, hats, textiles, and implements of warfare; examples of the characteristic beadwork of the Bogobos on the island of Mindanao; and of articles of dress and implements of warfare of the Igorrots and other primitive tribes on the island of Luzon.
Other collections of interest are: collection of porcelains, embroideries, carvings, scrolls, clothing, Buddhas, etc., from northern China; specimens from various islands of Oceanica and Australia; Norwegian spinning wheels, chests, household articles, and other materials of the early eighteenth century; a collection of guns, pistols, and other firearms given by the Butterworth estate; relics of the Great War given or loaned by persons who collected them while in the service of their country; a colonial collection of early furniture, pewter, glassware, potteries, documents, photographs, etc.; historical materials representative of pioneer days in the Pacific Northwest and elsewhere.

Fine Arts.—The fine arts section contains the interesting collection of paintings, tapestries, carvings, etc., loaned by Kennedy C. Friend, and a collection of rare antique laces, Paisley and India shawls, porcelains, engravings, textiles, sculpture, etc., which have either been given or are loaned indefinitely to the museum. Special exhibits are arranged in the exhibition rooms on the first floor from time to time, notices of which are published at the time of the exhibition.

Reserve or Study Series.—The museum has in its laboratories for purposes of study and research, collections of botanical, conchological, ornithological, and ethnological specimens which are available to students or specialists competent to use them; also the museum library, consisting of several hundred books and pamphlets on scientific subjects.

The herbarium of over 15,000 specimens contains a characteristic series of northwest flora practically all of which is card indexed; also the Frye collection of mosses which is one of the most complete of this region and Alaska in the United States. The collection of bird skins, eggs, and nests consists of over 4,500 specimens and are particularly representative of western Washington. The conchological collection of over 18,000 specimens contains a complete series of west coast forms together with a larger series from all parts of the world.

Laboratories

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

ANATOMY LABORATORIES

A separate building constructed to secure a maximum of light and cleanliness houses the laboratory for human anatomy. It is located east of Bagley hall. Necessary equipment in the way of skeletal chart and model material are conveniently arranged. A study room and departmental library form an integral part of the laboratory.

ASTRONOMY LABORATORIES

The observatory is located in a substantial sandstone structure containing dome for equatorial, room for transit and clocks, office, room for lectures and laboratory work and dark room. 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, Gaertner 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, planetarium, and other equipment for experiments in laboratory and lecture work in astronomy.

BOTANY LABORATORIES

The botanical laboratories are on the third floor of Science hall. They occupy about 5,000 feet of floor space divided as follows: Two large labor-
stories of about 1,500 square feet each; three small laboratories, one for physiology, one for mycology and one for research. The laboratories are fitted with the apparatus and conveniences usual for the work.

CERAMIC LABORATORIES

(See Mining, Metallurgical and Ceramic Laboratories, page 34.)

CHEMICAL LABORATORIES

A thoroughly modern fireproof building houses the chemical laboratories. Fully equipped separate laboratories are 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 pressure. The 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

The hydraulic laboratory is now located in its new building on the shore of Lake Union, where facilities are 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.

The materials testing laboratory contains five universal testing machines with capacities from 30,000 to 300,000 pounds, two impact machines with various hammers ranging in weight from 550 to 1500 pounds, with the necessary auxiliary apparatus for general work.

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

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

The surveying 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-four direct current generators and motors. The machines are of modern design and have a combined capacity of 300 kilowatts in direct current machines and 225 kilowatts in alternating current machines. Most of the machines are of five- or ten-kilowatt capacity. Power from a storage battery of 130 cells is available at a separate switchboard in the dynamo laboratory. The university power house, containing two steam-driven units of 200 and 100 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, (h) radio laboratory, (i) transmission line laboratory. The instrument room contains a large collection of standard indicating and recording ammeters, voltmeters and wattmeters, two three-element G.E. oscillographs, and a Tinsley A.C. potentiometer.
Equipment

Fishes Laboratories—The ichthyology laboratory contains an extensive collection of named fishes, particularly rich in species from Puget Sound and Alaska. By exchange and other means a representative series of the fishes found in American waters, with particular reference to forms of economic importance is being built up. There has also been gathered a collection to illustrate the species of shellfish, crustaceans, and other invertebrate animals constituting the bases for the corresponding industries.

Fish Diseases Laboratory.—The laboratory for fish diseases is equipped for the study of life histories of the various parasites of aquatic animals, including aquaria for live subjects, dark room for studying the effects of various colored lights upon the animals, etc.

Fisheries Laboratories.—The apparatus laboratory is equipped with working models of the larger forms, and fully rigged types of the smaller forms of fishery apparatus, also detailed plans for the construction of same; equipment for the manufacture, repair, care and preservation of nets; models of fishing vessels and boats, and samples of various fishery products prepared for market.

The canning laboratory is equipped with all the machinery and appliances necessary for canning all varieties of fishery products, in either tin or glass, and in addition to practical instruction in canning methods, tests are made of various species, while research in food canning is carried on under conditions similar to those prevailing in commercial plants.

The curing laboratory contains all the necessary equipment for the pickling, dry-salting and mild-curing of fishery products.

Ultimately a small refrigeration and cold storage plant will be installed for the purpose of economic study of the various methods of freezing and preserving fishery products in cold storage.

A smokehouse will be built for the purpose of carrying on experiments in smoking of various species and their utilization as food either in this condition or canned.

The testing room will have a constant temperature of approximately 98°F, and in it samples of canned fishery products may be incubated, by means of which swells may be separated from the other cans and the sufficiency of the process used in the cannery determined. Various vacuum gauges and can testers will also be available.

Fish Hatchery.—The fish hatchery occupies about seven hundred square feet of floor space in Fisheries Hall No. 2. It is furnished with hatching troughs, baskets, and other essential equipment for the care of 500,000 salmon or trout eggs. A complete equipment consisting of batteries of open-top jars is provided for the care of several million of semi-buoyant eggs. Feeding tanks and aquaria are also provided in which experimental work in fish culture may be carried on. A number of cement-lined ponds are available in the College grounds for the rearing of various species of aquatic animals.

Within easy reach of the University are located state and federal fish hatcheries where a study may be made of the actual conditions under which fish culture is carried on.

Forest and Lumbering Laboratories

Dendrology.—Individual lockers. Extensive collections of tree seeds, cones, bark specimens. An aboretum is under way.

Logging and Lumbering.—Field work at logging camps and sawmills about Seattle. Complete equipment of instruments and tools is available for work in logging engineering. Collections of lumber, showing grades and
patterns, charts of lumber grades, exhibits of sawmill and woods saws, logging equipment, such as wire ropes, axes, hooks, blocks, special appliances for donkey engines, saw-mill belts, models of high lead logging, etc.

**Mensuration.**—Equipment selected to show principal types of instruments in use. Those adapted for use in the Northwest are provided in quantities sufficient for all practice work in cruising, surveying, volume, growth and yield studies.

**Silviculture.**—Forests around Seattle offer wide opportunities for practical studies and demonstrations. The extensive forest tree nursery of the College of Forestry affords excellent opportunity for practice in modern nursery methods.

**Timber Physics.**—Laboratory work is carried on in the U.S. Forest Service Timber Testing Laboratory, operated in cooperation 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.**—Individual lockers, gas, water, compound microscopes and all apparatus for preparing and sectioning wood for microscopic study are provided. Hand specimens and planks of domestic and foreign commercial timbers are provided in large quantities. These include extensive collections of South American, Australian, Philippine, Japanese and other foreign hardwoods. Microscopic slides of nearly all American woods are kept on hand for check specimens.

**Forest Products Laboratories.**—A forest products laboratory was erected last year at a cost of $85,000. Owing to the shortage of class room accommodations on the campus, the products laboratory is used to house all of the activities of the College of Forestry until the second unit of the Forestry Group—a building of approximately 60x120 feet—is erected. The laboratories for work in forest products now ready on the campus consist of four distinct units, as follows:

1. General Laboratory.—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.—Consists of both an open tank and a pressure plant. The former is of commercial size for treating ties, 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-food retort, air compressor and vacuum pumps and a duplex pressure pump, is so constructed that it may be used for any of the different pressure processes.

3. Wood Distillation 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 equipped with a recording hygrometer and thermometer, hygrodeik, and automatic temperature control.

**Commercial Plants.**—Plants for the manufacture of paper, wood pipe, cooperage, excelsior, wood conduit, veneers, furniture, boxes, and numerous
other secondary wood products are available for study. Four large creosoting plants and several smaller preservative plants are also available.

Demonstration Forest and Experiment Station.—Consists of a 60,000-acre tract comprising the Pilchuck-Sultan watersheds formerly a part of Snoqualmie Forest. It 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. 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. It is expected that title to the tract will be completed in the near future.

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.

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.

JOURNALISM LABORATORIES

The journalism laboratory, occupying 30x60 feet in the basement of Commerce Hall, is equipped with chases, imposing stones, type materials, borders and everything necessary to teach students how to dress a newspaper. For students interested in advertising and commercial printing, other special equipment is provided. A laboratory library of publications from supply houses, is always available, containing the latest information on type, paper, furniture, engravings and all equipment of the publishing and allied trades.

The journalism laboratory opens into the University Press, where practically all University printing is done. This makes convenient regular assignment hours on various types of machinery, as the plant has its own slug casting and type casting machines, cylinder, platen and rotary presses, folder, cutter, sticher, etc.

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 colorimeters, with accessories for determining heating value and analysis of solid, liquid and gaseous fuels.

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

MINING, METALLURGICAL AND CERAMIC LABORATORIES

The laboratories for mining, metallurgy, and ceramics proper are housed in two buildings; Mines Hall, occupied since 1910, contains the equipment for mining, ore dressing, and all branches of metallurgy, while the ceramics, fuels, and coal washing laboratories are in the new mines laboratory.

Mining, Ore Dressing, Metallurgy.—Mines Hall is a pressed brick building standing near the center of the campus. The main portion of the structure, measuring 50 by 80 feet, contains the offices, library, classrooms, drafting rooms and museum, as well as laboratories, desks, stockroom and balance room for assaying and general metallurgy. The rear wing, 40 by 66 feet, with basement, tower, and a 90-foot stack, is occupied by mining and milling machinery, electric furnaces, supplies, and stocks of ore. An addition contains a steel locker room, lavatory, shower-baths, and a metallographic laboratory.

The metallurgical equipment includes standard size furnaces fired by six methods—coal, coke, gasoline, gas, fuel-oil and electricity. 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 electrometallurgy laboratory is equipped with transformers, voltage regulators and switchboard through which power can be used at rates ranging up to 3600 amperes and at voltages varying from 1 to 484. A quarter-ton steel melting furnace and six other furnaces of various types are in use. The electrolytic laboratory contains a 3-horsepower motor-generator set, switchboard, meters, vats and accessory apparatus. A good supply of electrodes and refractory materials is kept in stock.

The mining equipment consists of air compressors, receivers, three rock drills, aerial tram, hand tools, full equipment for practice in blasting, loading and tamping models, exhibits of mining and timbering methods, drawings, blue prints, photographs, lantern with 1,600 slides, and collections of ores and minerals. The College of Mines mill contains breakers, rolls, 3-stamp battery, feeders, screens, classifiers, jigs, six concentrating tables, flotation cells of six types, Dings magnetic separator, and accessory apparatus.

Ceramics and Coal Washing.—The new mines laboratory, completed in 1921, is located in the engineering group and is the latest representative of the collegiate gothic style of architecture adopted by the University. The structure is four stories in height, with steel frame, reinforced concrete walls and floors, brick face, terra cotta trim, and slate roof with copper trimmings. A special feature of the building is the unusually large window area. An electric elevator serves all floors; hot and cold water, steam, compressed air, gas, and electricity for lighting, power and electrolytic purposes, reach all the laboratories.

The ceramics equipment, together with the offices and class rooms, occupies the northern two-fifths of the building, including the main entrance hall. The apparatus may be used for both manufacturing and testing cera-
mic products. The heavy brick machinery, located in the basement, consists of a 4-foot Crossley dry and wet pan, a Mueller universal auger machine with cutting table, and a large American dry brick press. The pottery machinery includes a Patterson clay washing outfit with a double blunger, power screens, agitator, pump and filter press, a potter's pug mill, jolly wheel and plaster molds for both jollying and casting ware. The terra cotta equipment consists of pressing molds, a De Vilbiss spraying apparatus, engobe and glaze materials, and glaze-grinding ball mills. Firing apparatus installed on the basement floor includes an oxygen acetylene cone-fusion furnace; a 3-foot, high-temperature, load-test kiln for two bricks; two portable muffle pottery kilns; a 10 by 7-foot open-fired, down-draft brick kiln; and a 10 by 8-foot terra cotta and glaze kiln of muffle type. The kilns are equipped with Brown pyrometers and fired with both gas and oil. General testing apparatus consists of sample molds, a small Mueller auger machine, a sample dry press, ageing cellar, volumeters, steam dryer, constant temperature electric dryer and transverse and tensile strength machines. The ceramic museum, library and office, physical-chemical laboratory, and locker room are on the third floor. Lecture, storage and pottery class rooms occupy the fourth floor.

The coal section of the new mines laboratory occupies the southern three-fifths of the building, and consists of three floors surrounding an open well or hatch, a lower main floor, and a sub-basement. Coal for testing is received on the ground floor, in lots up to thirty tons, and is screened to remove large sizes; smaller sizes pass into a concrete bin from which they are drawn to elevators for transportation to screens on the fourth floor, the screened products falling into bins on the third floor. From the bins, gravity flow delivers the screened sizes to the second floor, on which are located classifiers, jigs, tables, and other washing equipment. Products from these machines may flow to the lower floor for settling and dewatering. Large sizes of coal will be crushed in the sub-basement and wheeled to the elevator for delivery to the upper floor. Sampling devices will be installed at suitable points.

The third floor of the building contains fuel and analytical laboratories for the College of Mines and the U.S. Bureau of Mines, a room for conducting sink-and-float tests, office rooms, and special equipment. The ground floor contains a sampling room, a coal crushing and grinding room for the preparation of samples, and a two-stage compressor for supplying air for

**UNITED STATES BUREAU OF MINES NORTHWEST EXPERIMENT STATION**

The United States Bureau of Mines maintains at the College of Mines, a mining and metallurgical experiment station for the Pacific Northwest and the coast regions of Alaska. 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 electrometallurgy, in the treatment and uses of coal and in ceramics. Members of the experiment station staff give occasional lectures to the students of the University on subjects dealing with their special lines of work.

**Mine Safety Station.**—The Mine Safety Station occupies a separate building. 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 United States Bureau of Mines.

A one-ton 45-horsepower automobile truck, equipped with rescue apparatus ready for emergency calls, forms part of the equipment of the rescue station.

**PHARMACY AND MATERIA MEDICA LABORATORIES**

Rooms devoted to pharmacy, materia medica and chemistry are 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, in a well equipped laboratory devoted to this purpose. Pharmacy students taking botany, physiology and bacteriology have well equipped laboratories in Science hall.

**PHYSICS LABORATORIES**

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

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

The Bureau of Testing 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**

The psychology laboratory occupies the third floor of Philosophy hall. The fourth floor of this building which will ultimately be a part of the laboratory, is temporarily occupied by another department.

**ZOOLOGY**

The laboratory work of the department of zoology is conducted in six rooms located on the second floor of Science hall. Here are adequate facili-
ties for pursuing the following lines of investigation: General zoology, physiology, cytology, parasitology, plankton, entomology and research.

**BAILEY AND BABETTE GATZERT FOUNDATION FOR CHILD WELFARE**

On December 21, 1910, this foundation was established by a gift to the University of $30,000 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 developments of industrial research in the University.

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, 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, (2) mining and metallurgy, (3) chemical engineering and industrial chemistry, (4) civil engineering, (5) electrical engineering, (6) mechanical engineering, (7) physics standards and tests.

Inquiries in regard to the work of the Engineering Experiment Station should be addressed to the director.
GENERAL INFORMATION

THE UNIVERSITY ORGANIZATION,

The University of Washington is one of the five institutions of higher education which complete the system of public education of the state, the others are the state college and the three normal schools. To the University is given exclusive authority to instruct in the following major lines: Aeronautical engineering, architecture, commerce, fisheries, forestry, journalism, law, library science, marine engineering and medicine.

The University has concurrent authority with the state college to instruct in the following major lines: Chemical engineering, civil engineering, electrical engineering, home economics, liberal arts, mechanical engineering, mining, pharmacy, professional training of high school teachers, school supervisors, and school superintendents, and pure science.

Schools and Colleges and Their Fields.—To carry out its educational responsibility, the University is organized in the following schools and colleges:

(A) *The Colleges of Liberal Arts and Science*, which provide a liberal education in the fields of arts and of pure science, leading in a course, normally requiring twelve quarters of residence, to the degrees of bachelor of arts and bachelor of science.

(B) The professional and technical schools and colleges, including:

(1) *The College of Business Administration*, covering in a course of twelve quarters the fundamentals of scientific training for industry and commerce. The degree given is bachelor of business administration.

(2) *The School of Education* requires for admission six quarters' of approved work in any college of the University, and in an advanced course of six quarters, prepares students for careers in the field of education as high school teachers and school administrators. The degree is bachelor of arts in, or bachelor of science in education. Students in the College of Liberal Arts may major in the department of education and take the degree of bachelor of arts.

(3) *The College of Engineering* has four departments, chemical, civil, electrical and mechanical engineering (including aeronautical and marine), their curricula leading in twelve quarters to the degree of bachelor of science in the special field chosen by the student. The degree of master of science in each field is open to graduate students.

(4) *The College of Fine Arts* offers curricula of twelve quarters in architecture, vocal, instrumental, or public school music, or musical theory, painting and design, public school drawing, music and drawing, and dramatic art, leading to the degrees of bachelor of architecture, bachelor of music and bachelor of fine arts or bachelor of liberal arts, with a major in one of the subjects named.

(5) *The College of Fisheries*, recently established, lays a scientific foundation for work connected with the fisheries industry, one of the chief resources of the Pacific Coast. Bachelor of science in fisheries is the degree offered.
(6) The College of Forestry offers a curriculum of twelve quarters preparing for work in scientific forestry or in lumbering industry. Bachelor of science is the degree offered. The full professional course is fifteen quarters, with a liberal allowance of electives, giving opportunity for specialization in forest service and state work, logging engineering, forest products, or the lumber business. For this course the degree of master of science may be given in the Graduate School.

(7) The School of Journalism, requires for entrance the junior certificate, elsewhere explained, based on the completion of the first two years of college work in arts or science. The curriculum leads to the degree of bachelor of arts in journalism and prepares its students for practical newspaper work.

(8) The School of Law is the standard of approved law schools for admission to the bar of this state. For admission the student must present a junior certificate from the College of Liberal Arts or the College of Science, or its equivalent. The curriculum of the school requires three school years or nine quarters, and leads to the degree of bachelor of laws. The degree of master of laws is also given. Students may carry on work in liberal arts or science and law concurrently, taking both bachelors' degree in six years, or eighteen quarters.

(9) The Library School by means of a technical curriculum extending through three quarters based upon either three or four years of academic study prepares students for service in librarianship. Upon the completion of the library school curriculum (46 credits), when based upon three years of academic study, the bachelor of arts degree is granted. When based upon four years of academic study, for which the student has received the baccalaureate degree, the professional degree of bachelor of science in library science is granted.

(10) The College of Mines offers four-year or twelve-quarter curricula, leading to the degree of bachelor of science in mining engineering, geology and mining, metallurgical engineering, or coal mining engineering. The fields open to graduates of this college are indicated by these divisions. The college also offers a curriculum in ceramics (clay, glass and cement products.) The degree of master of science, with a major in one of these lines, may be obtained in the Graduate School.

(11) The College of Pharmacy offers three-year and four-year courses, the first giving preparation in technical and commercial pharmacy, and the second providing a well-rounded scientific training in this field. The three-year course leads to the degree of pharmaceutical chemist, and the four-year course to that of bachelor of science in pharmacy. A fifth year, taken in the Graduate School offers an opportunity for graduate research work and leads to the degree of master of science in pharmacy.

(C) The Graduate School offers work leading to the degrees of master of arts, master of science, master of arts or master of science in technical subjects, certain technical or professional master's degrees (as, for example, master of business administration), and
doctor of philosophy. A master's degree presupposes at least one year of resident work of high grade and special character, and a doctor's degree at least three years of such work. The University is placing increased emphasis upon its graduate work.

Definitions and Explanations.—In all statements relating to the University the word **course** refers to a single study pursued for a definite period, for which credit may be given toward University requirements for graduation in accordance with the number of hours taken; a **curriculum** is a group of courses arranged to be taken consecutively or concurrently; a **department** is the unit of instructional organization in a particular science or art, as the department of geology; a **college** gives full curricula, beginning with the work of the freshman year and covering twelve quarters; while the work of a **school** is based upon two or more years of college work.

The four-year programs of the Colleges of Liberal Arts and Science are further divided into the **lower division** (freshman and sophomore) and **upper division** (junior and senior). The **junior certificate** is given for the completion of the requirements of the lower division in the College of Liberal Arts. The more advanced work of the upper division leads to graduation with the bachelor's degree. The specialized work of the schools is upper division or graduate work and requires the junior certificate as a minimum to enter upon it.

'Special Curricula Within the Schools.—Certain semi-professional curricula are also given for which no special school or college is provided. Such is the curriculum in nursing and public health, given in the College of Science.

The University does not give a medical course, but it offers a pre-medical curriculum especially planned as a foundation for study in a medical school. This may be two years in length for schools not requiring college graduation, or four years for schools requiring that amount of preparation.

Under the provisions of the National Defense Act, students in the University may attain commissions as reserve officers in the United States Army by meeting the requirements for advanced work in military science. This is done without interference with the students' regular academic work.

**The Four-Quarter System.**—The University is now operated on the four-quarter system, each quarter having approximately twelve working weeks. These quarters or terms begin in October, January, April and the latter part of June. The University is closed only through the month of September. A careful reading of the calendar will show the working of this plan in detail. Students may enter at the beginning of any quarter. This permits them to do a full quarter of university work in the summer, in most curricula, to complete a university course in three years, if health and resources permit, or otherwise to adjust their university residence to meet personal conditions. This flexible plan is of especial advantage in the University of Washington because the absence of extremes in climatic conditions is favorable to mental work at all times of the year.

**ADMISSION TO THE UNIVERSITY**

**GENERAL STATEMENT**

All correspondence regarding the admission of students to the resident course of the University, as well as the requirements for graduation, should be addressed to the registrar.

Students are admitted to the resident work of the University by certi-
GENERAL INFORMATION

Certificate or by examination, only recommended graduates of fully accredited four-year secondary schools being admitted on certificate. Students are classified as graduates and undergraduates. Undergraduates are classified as regular students (freshmen, sophomores, juniors, and seniors), unclassified students, and special students.

ADMISSION BY CERTIFICATE

Application for Admission to Freshman Standing.—A graduate of a four-year accredited secondary school, whose course has covered the requirements for entrance as outlined on pages 43-45 and who meets the scholarship requirement outlined below, will be admitted upon recommendation of his principal and the presentation of a satisfactory 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.

Applications for Admission to Advanced Standing.—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.

The credentials for students expecting to enter the University in the autumn quarter, 1922, should be filed in the registrar’s office not later than August 15.

Scholarship Requirement.—The University has adopted a scholarship requirement of a grade of 80 or better in at least two-thirds of the subjects accepted for graduation from high school and for entrance to the University. This requirement will not be imposed on students who have graduated from high school, before September, 1921. In the fall of 1922, this requirement will have to be satisfied in respect to the subjects taken during the senior year of 1921-1922; in the fall of 1923, in respect to subjects taken during 1921-1922 and 1922-1923, the junior and senior years respectively; in the fall of 1924, in respect to subjects taken in 1921-1922, 1922-1923 and 1923-1924; and in the fall of 1925, in respect to the full course in high school (except such portion of it as may have been completed previous to September, 1921).

Any graduate of an accredited secondary school who fails to meet the scholarship requirement for admission, has the privilege of qualifying for admission by passing the regular University entrance examinations in a sufficient number of subjects in which he has fallen below the grade of 80, to bring his average grade up to the required two-thirds above 80. The successful passing of these examinations, however, will require a very thorough review of the subjects concerned after the work has been completed in high school.

Graduates desiring to take advantage of this privilege should consult with their principals regarding the best method of preparing for the entrance examinations. They should also notify the Registrar of the University of their intention of taking examinations.

Accredited Schools.—The list of accredited secondary schools in the State of Washington is as follows for the year 1922-1923:
I. PUBLIC HIGH SCHOOLS

Aberdeen
Almira
Amherst
Arlington
Aasot
Auburn
Battle Ground
Bellingham
Whatcom
Fairhaven
Blacklestone
Black Diamond
Blaine
Bothell
Bremerton (U. H.)
Brewster
Buckley
Burlington
Burton (U. H.)
Camas
Cashmere
Castle Rock
Centralia
Chehalis
Chelan
Cheyney
Chewelah
Chimacum
Clarkston
Cle Elum
Colfax
Colville (U. H.)
Coulee City
Coupeville
Cowlitz
Creston
Davenport
Dayton
Deer Park
Deming
Dry Rock
Duvall
Eatonville
Edison
Edmonds
Edwall
Ellensburg
Elma
Endicott

Enumclaw
Ephrata
Everett
Fairfield
Full City
Farmington
Ferndale
Fife
Foster
Friday Harbor
Garfield
Goldendale
Grandview
Granger
Granite Falls
Harmony
Harrington
Hilliard
Hoquiam
Iwaco
Issaquah
Kalama
Kapowsin
Kalso
Kennewick
Kettle Falls
Kirkland (U. H.)
Kittitas (U. H.)
La Conner
La Crosse
Latah
Leavenworth
Lebak
Lind
Lynden
Mabton
Malden
Mead
Medical Lake
Meridian (U. H.)
Monroe
Montesano
Mossy Rock
Mount Vernon (U. H.)
Moxee

Napavine
Newport
Nookach
North Bend
Oakesdale
Oak Harbor
Oakville
Odessa
Okanogan
Olympia
Omak
Orville
Orting
Outlook
Pateros
Palouse
Peno
Pe Ell
Pomeroy
Port Angeles
Poulsbo
Port Townsend
Prescott
Prosser
Pullman
Puyallup
Raymond
Reardan
Redmond
Renton
Republic
Richland
Ridgefield
Ritzville
Rochester
Rockford
Rosalia
Roy
Seattle
Ballard
Broadway
Franklin
Lincoln
Queen Ann
West Seattle
Sedro Woolley
Selah
Sequim
Shelton
Skykomish
Snohomish
South Bend
Spangle
Spokane
Lewis and Clark
North Central
Orchard Avenue
Sprague
Stanwood
Stevenson
Sultan (U. H.)
Sumas
Summer
Sunnyside
Tacoma
Lincoln
Stadium
Tekoa
Tenino
Toledo
Toit (U. H.)
Tonasket
Toppenish
Trench
Twp
Vadec
Valleyford
Vancouver
Vashon
Ver, Greenacres
Walla Walla
Wapato
Washougal
Washucna
Waterville
Wenatchee
White Salmon
Wilbur
Wilson Creek
Winlock
Winnnow
Woodland
Yacolt
Yakima
Zillah

II. OTHER SECONDARY SCHOOLS IN WASHINGTON

Ann Wright Seminary, Tacoma
Holy Angels Academy, Seattle, (provisional)
Forest Ridge Convent, Seattle, (provisional)
Holy Names Academy, Seattle
Holy Names Academy, Spokane
Moran School, Rolling Bay
Purdue Lutheran Academy, Parkland
Mme. Pless School, Seattle (provisional)
Seattle Pacific College, Seattle (academy)
Spokane College, Spokane (preparatory department) (provisional)

St. Dominic's Academy, Everett
St. Martin's College, Lacey (high school department)
St. Nicholas School, Seattle
St. Paul's Academy, Walla Walla (provisional)
Aquinas Academy, Tacoma
Walla Walla College Academy, Walla Walla (provisional)
Y. M. C. A., Seattle (provisional)

III. SCHOOLS OUTSIDE OF WASHINGTON

Graduates of secondary schools outside of Washington will be admitted on the same terms as graduates of accredited schools of 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 the leading university whose standards of admission are practically the same as those of the University of Washington.

Graduates of four-year high schools in Alaska that are recommended by the Commissioner of Education for Alaska will be accepted, until further notice, on the same basis as graduates of accredited schools in Washington.
Admission by Examination.—Applicants for admission by examination are required to pass, with grades above 80 per cent in at least two-thirds of the required work an examination based on a four-year course amounting in the aggregate to fifteen units* and covering the requirements of the college that the student wishes to enter.

Entrance examinations are held at the office of the Registrar on the following dates:—July 26, 27, 28; September 27, 28, 29, and December 20, 21, 22, 1922; March 19, 20, 21, and June 13, 14, 15, 1923.

Persons desiring to take entrance examinations should fill out application blanks at the registrar's office several days before date of examination. Blanks will be mailed to applicants on request.

The schedule of hours for examination may be obtained from the registrar.

Certificates of successful examinations before the College Entrance Examination Board will be accepted in lieu of matriculation examinations conducted by the University of Washington. With this exception, however, the only examinations recognized for giving entrance credit are the regular scheduled examinations held at the registrar's office, or special examinations, authorized by the registrar.

Examinations for Exemption in English.—The department of English will give an examination in English composition for those students who wish to attempt it, with the view of being excused from all or a part of the required course in college composition. It is hoped that a large number of entering students will present themselves for this examination, which will be held on the same dates as the regular entrance examinations for the autumn quarter.

Requirements for Admission

Correspondence.—Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the Registrar, University of Washington, Seattle.

Freshman Standing.—Freshman standing in the University is granted to any recommended graduate of a four-year accredited secondary school who meets the scholarship requirement outlined on page 41 and presents fifteen units* of credit, distributed as follows:

(a) 3 units of English.
(b) 1 unit of algebra.
(c) 1 unit of plane geometry.
(d) 3 units selected from one of the following groups (or 2 units if 3 units of mathematics are presented).

** (1) Foreign language, either ancient or modern, (at least 2 units in one language; not less than one unit will be counted in any language).
(2) History, civics, economics (at least one unit to form a year of consecutive work in history).
(3) Physics, chemistry, botany, zoology, general biology, physical geography, geology, physiology. (Not less than one unit will be counted in physics, chemistry, or general biology. No science will be counted as applying to this requirement unless it includes a satisfactory amount of laboratory work).
(e) 2 units in subjects presented in the above groups (1) (3).

*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.

**A student who has not taken in high school the amount of foreign language which may be required for admission to the college that he plans to enter, will make up the deficiency in the University as part of his regular schedule of work, but without receiving college credit for it. For the Colleges of Science and Fine Arts, the requirement may be satisfied by two units or 20 quarter credits in any one foreign language. For the College of Liberal Arts, by two units or 20 quarter credits in one of the following: Latin, Greek, French, German, Spanish, Scandinavian, or Italian. A student failing to present two units in one of these languages, but presenting two units in another foreign language, will receive college credit for required foreign language taken in the University.
5 units selected from subjects accepted by an approved high school for its diploma. Not less than one full unit will be counted in physics, chemistry, general biology, or a foreign language. A maximum of 4 units will be counted in vocational subjects, except for admission to the Colleges of Business Administration and Fine Arts. For admission to the College of Business Administration, a maximum of 8 units in vocational subjects will be accepted, of which at least 4 units must be in commercial branches; and a student presenting 8 such vocational units, and 2 units in history, and fulfilling requirements (a), (b) and (c), will be given freshman standing in that college without being held for requirements (d) and (e). If the student is transferred later to another college, only 4 vocational units will be counted, and the student will be required to meet the requirements (d) and (e). For admission to the College of Fine Arts, a maximum of 5 units in vocational subjects will be accepted, provided that not less than 2 units of the five are in fine arts subjects. If the student is transferred later to another college only 4 vocational units will be counted.

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, or if they are not offered in the University, he will take them in some accredited secondary school or with a tutor, as part of his authorized schedule of work. Such subjects, if taken in the University, 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. A student entering without having satisfied any such prerequisite is required to register so that the prerequisite will be satisfied not later than the end of his fourth quarter of residence. A student failing to meet this requirement is ineligible for readmission until the prerequisite has been satisfied. 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 graduate course in the high school of at least one semester.

**Specific Subjects Recommended for Admission to the Several Colleges**

**Colleges of Liberal Arts and Science (General Courses)**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Algebra</td>
<td>1</td>
</tr>
<tr>
<td>Plane geometry</td>
<td>1</td>
</tr>
<tr>
<td>Foreign language</td>
<td>2††</td>
</tr>
</tbody>
</table>

**Curriculum Preparatory to Medicine and Curriculum for Nurses (College of Science)**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Algebra</td>
<td>1</td>
</tr>
<tr>
<td>Plane geometry</td>
<td>1</td>
</tr>
<tr>
<td>United States history and civics</td>
<td>1</td>
</tr>
<tr>
<td>Medieval and modern history</td>
<td>1††</td>
</tr>
<tr>
<td>Physics</td>
<td>1</td>
</tr>
<tr>
<td>Foreign language</td>
<td>2††</td>
</tr>
</tbody>
</table>

**College of Fine Arts**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Algebra</td>
<td>1</td>
</tr>
<tr>
<td>Plane geometry</td>
<td>1</td>
</tr>
<tr>
<td>Foreign language</td>
<td>2††</td>
</tr>
<tr>
<td>Physics</td>
<td>1</td>
</tr>
<tr>
<td>History</td>
<td>1</td>
</tr>
<tr>
<td>Unit in one foreign language</td>
<td>1</td>
</tr>
</tbody>
</table>

†In satisfying entrance requirements with college courses, a minimum of ten quarter credits is counted as the equivalent of the entrance unit.

††† A student who has not taken in high school the amount of foreign language which may be required for admission to the college that he plans to enter, will make up the deficiency in the University as part of his regular schedule of work, but without receiving college credit for it. Any modern foreign language is accepted for entrance credit (from an accredited school, or by examination), which the student can read, write and speak, and the grammar and literature of which he has studied as a part of his secondary training. For the Colleges of Liberal Arts, the prescribed languages are Latin, Greek, French, German, Spanish, Russian, and Italian. However, if a student presents 2 entrance units in another foreign language he may receive college credit for work taken in the University in a prescribed foreign language.
GENERAL INFORMATION

COLLEGE OF BUSINESS ADMINISTRATION

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

COLLEGES OF ENGINEERING AND MINES

3 units of English. 1 unit of physics.
1 1/2 units of elementary and advanced algebra. 1/2 unit of shopwork.
1 1/2 units of plane and solid geometry.

COLLEGE OF FORESTRY

3 units of English. 1 unit of physics.
1 1/2 units of elementary and advanced algebra. 1 or 1/2 unit of botany.
1 1/2 units of plane and solid geometry.

COLLEGE OF PHARMACY

For the three-year course

8 units of English. 1 unit of plane geometry.
1 unit of algebra.

For the four-year course

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

COLLEGE OF FISHERIES

8 units of English. 1 unit of plane geometry.
1 unit of algebra.

SCHOOL OF LAW, LIBRARY SCHOOL AND SCHOOL OF JOURNALISM (See following page.)

Unclassified Standing.—A graduate of a four-year accredited secondary school who meets the scholarship requirements outlined on page 41; but who does not meet the specific subject 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. An unclassified student is required to register, so that all prerequisites will be satisfied by the end of his fourth quarter of residence. Failure to comply with this requirement will render a student ineligible for readmission until regular standing has been acquired.

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 mature person who cannot be admitted to freshman standing or as an unclassified student, may be admitted, classified

††A student who has not taken in high school the amount of foreign language which may be required for admission to the college that he plans to enter, will make up the deficiency in the University as part of his regular schedule of work, but without receiving college credit for it. Any modern foreign language is accepted for entrance credit (from an accredited school, or by examination), which the student can read, write and speak, and the grammar and literature of which he has studied as part of his secondary training. For the Colleges of Liberal Arts, the prescribed languages are, Latin, Greek, French, German, Spanish, Scandinavian, Italian. However, if a student presents 2 entrance units in another foreign language he may receive college credit for work taken in the University in a prescribed foreign language.
as a special student, and allowed to register for those courses only for which
he shows special preparation, in addition to such subjects as may be pre-
scribed by the Committee on Special Students.

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. An applicant for admission to any college or school of the Univer-
sity, as 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 ad-
mitted 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 ad-
mitted to the registrar at least a month before the beginning of the quarter
in which the student desires to attend, 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 and a list of subjects in which the candidate is
prepared to take entrance examinations.

4. Registration as a special student is for one quarter only. Re-registra-
tion will be refused if the student has not shown satisfactory earnestness
and definiteness of purpose, if his work has not been good or if he has not
complied with conditions prescribed by the committee on special students.

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. Special students are not eligible to take part in student activities.

7. 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, their applications should be filed with the registrar four
weeks, at least, before the beginning of the quarter in which the applicant
wishes to attend the University. Applications for the autumn quarter should
be filed not later than August 15.

**Advanced Undergraduate Standing.**—Students from classes above the
first year in other colleges of recognized rank, who present letters of honor-
able 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.

**Advanced Credit by Examination.**—If a student desires to be examined
for advanced credit in work that he has not followed in a college class at the
University, he may, with the approval of the head of the department con-
cerned, do so. Credits, with grades so obtained, must be certified to by the
examiner and the dean concerned, and shall not be given for work done while
the student is in residence.

A student desiring to take an examination for advanced credit must first
file an application and obtain a permit at the registrar's office.

Special claims for advanced credit based on credentials and passed on
by a committee consisting of the registrar, the dean of the college and the
heads of the departments concerned.
Admission to the School of Law and the School of Journalism.—Clear entrance to the College of Liberal Arts or the College of Science, and 102 hours (two years) of advanced credit in freshman and sophomore courses, covering all prescriptions for the junior certificate, are required for admission to the School of Law and the School of Journalism.

Admission to the School of Education.—Clear entrance to any college of the University and completion in that college of at least 90 hours of college credit in courses approved by the faculty of the School of Education and the faculty of the college concerned, and of 10 hours in military science or physical education, are required for admission to the School of Education.

Admission to the Library School.—Students who have qualified for senior standing in the College of Liberal Arts or the elective curricula of the College of Science, having earned 145 credits including ten credits in military science or physical education and all required work except the completion of a major, may be admitted to senior standing in the Library School as candidates for the degree of bachelor of arts, the requirements for which can ordinarily be fulfilled in one academic year.

Graduate students who hold baccalaureate degrees from any college or university in good standing and whose undergraduate work has included the equivalent of at least 20 college credits in each of two modern foreign languages, German and French preferred, may be admitted to the Library School as candidates for the degree of bachelor of science in library science, the requirements for which can ordinarily be fulfilled in one academic year.

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 at least 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 and Science, or the School of Education. For graduation with the degree of bachelor of arts, bachelor of science, or bachelor of arts or science in 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 curricula as have not been fairly covered by previous work. Normal graduates desiring admission to any of the other colleges of the University may be given such exemption or credit as their preparation seems to justify.

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, upon payment of a fee of $10 a quarter. This provision does not apply to laboratory courses, or to any courses offered in the summer quarter.

NOTE.—Numbers in brackets are those of rules in the old Handbook of Rules and Regulations.

Rule 1. (a) In the summer quarter, any mature person, with the consent of the dean and the instructor concerned and upon payment of the regular tuition fee, may enroll at the registrar’s office as auditor in any number of non-laboratory courses or the lecture parts of any number of laboratory courses.

(b) Persons who, while registered in the University, have attended courses as auditors, shall, in no case, be permitted to take the examinations in such courses or obtain credit therefor. [H.B.—27].

No person may regularly attend any course in which he has not been registered, or enrolled as an auditor.
Registration for all students for the autumn quarter will take place on Monday and Tuesday, October 2 and 3, 1922; for the winter quarter on Wednesday, January 3, 1923; for the spring quarter, Tuesday, March 27, 1923; and for the summer quarter, Tuesday, June 19, 1923.

Registration is complete when the election blank has been signed by all required registering officers and the student, when all required fees have been paid, and when all blanks have been left in the registrar's office or other place designated by the registrar. Registration by proxy is not permitted.

Late Registration.—The dates noted above are officially set apart for registration and enrollment, and all students are expected to complete their registration (including payment of all required fees) in those days. Students who fail to do this are charged an additional fee of $2 for the first day's delay, and a further cumulative fee of $1 for each day thereafter during the first week following the final official registration date. After the first week following the final official registration date, no student will be permitted to register except by special action of the Board of Deans. (Students who have been granted a leave of absence or withdrawn in good standing during a preceding quarter may, with the consent of instructors concerned, be given the privilege of late enrollment in order to complete unfinished courses.)

Changes in Registration.—A fee of $1 is charged for each change made by a student in his election of studies after his registration is completed, unless such change is made upon the initiative of University authorities.

Rule 2. Unsatisfied prerequisites take precedence over other subjects. Any student having any unsatisfied entrance prerequisite must register for work that the deficiency will be removed by the end of his fourth quarter of residence. In special cases, permission to postpone the removal may be granted by the dean of the proper college; provided such permission be filed and entered on the student's record card before the grades for the student's third quarter are in. The registrar is authorized to refuse registration to any student not complying with this rule. Appeal from the registrar's decision may be taken to the Board of Deans. [H.B.—10].

Rule 3. Except with the consent of his dean:
(a) No student shall be registered for less than 12 hours of work;
(b) No student shall be registered for more than 10 hours of work (exclusive of drill or physical training), or the number for the respective quarters in the prescribed curricula. [H.B.—20].

Rule 4. With the consent of his dean, a junior or senior whose previous scholastic record has been exceptionally good, may be registered for a maximum of 19 hours (exclusive of drill or physical training). [H.B.—21].

Rule 5. No student may be registered for more than 19 hours (exclusive of drill or physical training). [H.B.—22].

Rule 6. Work taken to remove entrance deficiencies shall count as part of the schedule allowed. [H.B.—23].

Rule 7. A student who is obliged to do outside work must enter on his registration blank a statement of the nature of the work and the number of hours per week so used. In considering petitions for reinstatement the Board of Deans shall take no cognizance of outside work if it has not been noted on the student's registration blank. [H.B.—24].

Rule 8. A student who registers for an elective course must ultimately complete the course, unless relieved of the necessity by his dean. A student properly withdrawn and given a "W" shall not be affected by this rule. [H.B.—25].

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.
EXPENSES

Tuition and Fees.—By authority of the special legislative act of the session of 1921, the following tuition and fees will be collected beginning with the autumn quarter of 1921.

GENERAL TUITION FEES

Resident Tuition.—Fifteen dollars ($15) general tuition per regular academic quarter from each student who has been domiciled within the state of Washington or the territory of Alaska for the period of one year prior to the date of registration.

Non-resident Tuition.—Fifty dollars ($50) tuition per regular academic quarter from each student who has not been domiciled in the state of Washington or the territory of Alaska for the period of one year prior to registration.

Library Fee.—Five dollars ($5) a quarter will be collected from each regular student, to be known as a library fee.

Associated Students Fee.—An associated student membership fee of ten dollars ($10) for the year (exclusive of summer quarter) is collected of all regularly enrolled students upon registration.

Exemptions.—All honorably discharged service men or women who served in the military or naval service of the United States during the late world war; and all honorably discharged service men who served in the military or naval services of any of the governments associated with the United States during the said war, provided they were citizens of the United States at the time of their enlistment and who are again citizens at the time of their registration in the University may on application and showing that such fee will be an individual expense be exempted from the payment of general tuition fee provided they have been domiciled in the state of Washington or territory of Alaska for the period of one year prior to the date of registration. If any such service men have not been domiciled in the state of Washington or territory of Alaska for one year prior to registration they are exempt up to twenty-five dollars ($25) per quarter.

Deserving students (domiciled in the state of Washington or the territory of Alaska) who, after a quarter in residence have shown a marked capacity for the work done by them in school, in lieu of paying the general tuition fee, above provided for, may give their promissory notes with interest at the rate of four per cent per annum. All applications for this concession must be presented to the comptroller's office.

Refunding Fees.—Tuition and other general fees are not returnable except in case of sickness or causes entirely beyond the control of the student. No portion of the returnable fees shall be returned for voluntary or enforced withdrawal after thirty (30) days from the date of registration of the students. In no case shall more than one-half of the fees be refunded. Students withdrawing under discipline forfeit all rights to the return of any portion of the fee.

OTHER CHARGES

Auditor's Tuition Fee.—A fee of $10 a quarter will be charged all persons enrolling as auditors.

Part Time Tuition Fee.—A fee of $10 a quarter will be charged persons registering for partial courses not exceeding six (6) credits.
**Excess Hour Fee.**—A fee of $1 per credit per quarter will be charged each student registering for excess hours.

**Law Library Fee.**—Ten dollars ($10) per quarter special law library fee from each student registering in law, in addition to the general tuition fee mentioned above. Students other than majors in law taking work in the School of Law will pay at the rate of one dollar ($1) for each credit hour of law work elected up to a maximum of $10 per quarter.

**Short Course Tuition.**—Twenty dollars ($20) from each student registering in any short course—mining, forestry, fisheries, etc.

**Summer Quarter Tuition.**—Twenty dollars ($20) from each student registering in the summer, for the quarter or any part thereof.

**Marine Biological Station Tuition.**—Thirteen dollars ($13) of which ten dollars ($10) is for tuition and three dollars ($3) is for laboratory fee.

**Military Uniform Deposits.**—Each student who is held for military drill is required to make a deposit of $15 before he draws his uniform. Thirteen dollars ($13) of this amount is returnable upon the presenting of proper clearance papers from the military headquarters; the two dollars ($2) is retained as a breakage fee. The making of this deposit in no way entitles the student to ownership in any part of the military equipment or clothing issued.

**Special Examinations.**—A fee of $1 will be charged for all examinations given outside of the regular schedule.

**Late Registration.**—A penalty of $2 is imposed for the first day's delay in registering and $1 per day additional thereafter up to the close of the week during which registration is permitted.

**Changes of Registration.**—A fee of $1 will be charged for changes in election, including additions or withdrawals of individual courses after completion of registration.

**Diploma Fee.**—The fee charged to graduates is $5 for each one receiving a baccalaureate or higher degree, or a diploma in pharmacy, and $5 for each one receiving a teacher's diploma. *This teacher's diploma fee does not include the legal registration fee of $1 paid to that county school superintendent who first registers a teacher's diploma.*

**Laboratory Fees and Deposits**

The following laboratory fees and deposits will be collected quarterly during the ensuing year, 1922-1923. With few exceptions, these fees are not returnable in whole or in part, and in no case can any rebate be allowed after 35 days from date of registration.

<table>
<thead>
<tr>
<th>Course</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy—105, 106, 107</td>
<td>$3.00</td>
</tr>
<tr>
<td>104, 108</td>
<td>$5.00</td>
</tr>
<tr>
<td>101, 102, 103</td>
<td>$7.50</td>
</tr>
<tr>
<td>200 Td be arranged.</td>
<td></td>
</tr>
<tr>
<td>Architecture—54, 55, 56, 104, 105, 106, 154, 155, 156</td>
<td>$2.50</td>
</tr>
<tr>
<td>Astronomy—1, 11, 123, 171</td>
<td>$2.00</td>
</tr>
<tr>
<td>Bacteriology and Pathology—4, 101, 102</td>
<td>$3.00</td>
</tr>
<tr>
<td>110, 111, 112, 201, 202, 203, 204, 205, 206</td>
<td>$4.00</td>
</tr>
<tr>
<td>Botany—8, 9, 10, 271, 272, 273</td>
<td>$1.00</td>
</tr>
<tr>
<td>1, 2, 3, 11, 12, 13, 14, 26, 53, 105, 106, 107, 119, 130, 140, 141, 142, 143, 144, 145, 200, 233, 250, 251, 252, 253, 254, 261, 262, 263, 279, 280</td>
<td>$2.50</td>
</tr>
<tr>
<td>Course</td>
<td>Cost</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Ceramics—180</td>
<td>$5.00</td>
</tr>
<tr>
<td>110, 191, 192, 193</td>
<td>$10.00</td>
</tr>
<tr>
<td>121, 122, 123</td>
<td>$12.00</td>
</tr>
<tr>
<td>131, 132, 133</td>
<td>$5.00 or $10.00</td>
</tr>
<tr>
<td>Chemistry—All courses except 52, 200, 216, 221, 222, 223, 224, 225, 231, 232, 233</td>
<td>$7.50</td>
</tr>
<tr>
<td>Civil Engineering—1, 4, 21, 22, 23, 24, 27, 30, 38, 55, 56, 126, 142, 167</td>
<td>$2.00</td>
</tr>
<tr>
<td>Economics and Business Administration—All courses $1.50 except those listed below:</td>
<td>$3.50</td>
</tr>
<tr>
<td>11, 12 Elementary accounting</td>
<td>$5.50</td>
</tr>
<tr>
<td>$10.00</td>
<td></td>
</tr>
<tr>
<td>Education—166, 167, 168, 215, 221, 222</td>
<td>$2.00</td>
</tr>
<tr>
<td>150, 223, 285, 286, 287</td>
<td>$3.00</td>
</tr>
<tr>
<td>Electrical Engineering—132, 141, 181, 182, 196, 198</td>
<td>$2.00</td>
</tr>
<tr>
<td>102, 110, 112, 122, 162, 164</td>
<td>$4.00</td>
</tr>
<tr>
<td>106, 107, S. C. 7</td>
<td>$4.00</td>
</tr>
<tr>
<td>Forestry and Lumbering—1, 5, 51, 52, 53, 58, 101, 102, 104, 105</td>
<td>$2.50</td>
</tr>
<tr>
<td>187, 188, 213, 214, 215</td>
<td>$3.00</td>
</tr>
<tr>
<td>Geology—11, 12, 112, 113, S. C. 1</td>
<td>$1.00</td>
</tr>
<tr>
<td>1, 2, 5, 31, 120, 123, 124, 131, S. C. 2</td>
<td>$2.50</td>
</tr>
<tr>
<td>21</td>
<td>$3.00</td>
</tr>
<tr>
<td>Home Economics—3, 8, 43, 101, 102, 189, 193, 200, 207</td>
<td>$2.00</td>
</tr>
<tr>
<td>25, 27, 32, 35, 112, 113, 121, 133, 135, 143, 183, 188, 191, 192, 204, 205, 206</td>
<td>$4.00</td>
</tr>
<tr>
<td>1, 2, 4, 5, 6, 105, 106, 107, 108, 110</td>
<td>$6.00</td>
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<tr>
<td>Journalism—90, 91, 92, 104, 105, 160, 161, 162</td>
<td>$1.00</td>
</tr>
<tr>
<td>51, 61, 75, 76, 101, 120, 130, 131, 133, 134, 135, 136, 140, 141, 142, 170, 171, 172, 173, 174, 175</td>
<td>$2.00</td>
</tr>
<tr>
<td>Library Science—One or more courses—$1.50 a quarter.</td>
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<tr>
<td>Lockers—Mines, Chemistry, Engineering, Home Economics and Anatomy Buildings, a year</td>
<td>$ .50</td>
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<tr>
<td>Mechanical Engineering—1, 2, 3, 53, 54, 55, 83, 105, 106, 107, 151, 152, 153, 167</td>
<td>$2.00</td>
</tr>
<tr>
<td>Metallurgy—103, 163</td>
<td>$5.00</td>
</tr>
<tr>
<td>102</td>
<td>$10.00</td>
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<tr>
<td>153, 160</td>
<td>$12.00</td>
</tr>
<tr>
<td>101, S. C. 1</td>
<td>$20.00</td>
</tr>
<tr>
<td>Mining—S. C. 2, S. C. 3</td>
<td>$3.00</td>
</tr>
<tr>
<td>101, 151</td>
<td>$5.00</td>
</tr>
<tr>
<td>152, 176</td>
<td>$10.00</td>
</tr>
<tr>
<td>153, 154, 155</td>
<td>$5.00 or $10.00</td>
</tr>
<tr>
<td>Music—18, 19, 20, 68, 69, 70, 118, 119, 120, 168, 169, 170, as listed below:</td>
<td></td>
</tr>
<tr>
<td>Adams, Burch, Ferryman, 1 lesson per week</td>
<td>$15.00</td>
</tr>
<tr>
<td>2 lessons a week $30.00</td>
<td></td>
</tr>
<tr>
<td>Venino, Van Ogle, Rosen, Tilly, Wood, Kirchner</td>
<td>$22.00</td>
</tr>
<tr>
<td>2 lessons a week $44.00</td>
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</tbody>
</table>
Glen, 1 lesson a week, $27.00—2 lessons a week $54.00
Piano practice room, an hour per day for the quarter $3.00
Pipe organ, an hour per day for the quarter $12.50

Painting, Sculpture and Design—5, 6, 7, 9, 10, 11, 53, 54, 55, 103, 104, 157, 158 $2.00
56, 57, 58, 72, 73, 74, 107, 108, 109, 160, 161, 162, 163, 164, 165 $3.00

Pharmacy—15 $1.00
9, 10, 11, 109, 110 $3.00
7 $4.50
1, 2, 3, 5, 6, 105, 106, 107 $7.50
113, 114, 115, 121, 122, 123, 129, 130, 131, 201, 202, 203, to be arranged.

Physical Education—Locker and apparatus, a quarter $0.50
Paid by all taking one or more courses except 87, 88, 89 (golf) $3.00
Women's suits, style and cost to be arranged.

Physics—1, 2, 3, 47, 48, 49, 50, 51, 54, 89, 90, 97, 98, 99, 103, 104, 106, 113, 114, 170, 175, 180 $2.50
Political Science—1 $1.00
Psychology—1 $2.00

Zoology and Physiology—158 $1.00
1, 2, 3, 4, 7, 10, 11, 101, 102, 105, 106, 107, 108, 155, 156, 157 $2.50
54, 55, 56 $3.00
151, 152, 153 $5.00
201, 202, 203, 204, 205, 206, to be arranged.

Board and Room.—The University dormitories consist of Lewis hall and Clark hall for women and Lander hall and Terry hall for men. During the ensuing year $32 a month will be charged for room and board at these residence halls. The rooms are furnished with necessary articles of plain furniture, but the student is expected to supply his own bed linen, bedding, towels, and rugs.

An amount equal to the first month's account is paid in advance and left on deposit to be applied on the board and room account for the last month of the school year.

All remittances should be made in favor of the University of Washington and be addressed to the comptroller of the University of Washington, Seattle.

The University also operates The Commons on the campus where students so desiring may secure the best of food at reasonable rates, cafeteria style.

Outside the campus, board and room may be secured at rates ranging from $32 to $38 a month.

University Health Service.—A health service is maintained by the University in conjunction with the Associated Students. Ten per cent of the fees collected by the Student Association, for its special activities, is assigned to the health fund, for the maintenance of an infirmary, containing medical offices for both men and women, nurses' offices and quarters, and 40 beds. The University provides the building, with equipment, a corps of two physicians and two nurses. Medical advice and office treatment are available at all times.

If a student is taken ill and is unable to call at the medical office, he should notify the infirmary clerk and the public health nurse will call upon the patient. The disposition of the case is determined on report of this visit. If the patient is a contagious suspect, or if he is in unsatisfactory quarters, he is taken to the infirmary and cared for free of cost, except for board.
serious disease develops he is transferred to one of the Seattle hospitals of his choice, and further responsibility of the University health service ceases. In the event of scarlet fever, or smallpox, the patient is sent to Firlands Sanitarium and cared for by the city. A local physician may be called in at any time at the patient's expense.

When absent from classes on account of sickness the student is not readmitted until he secures a card from the health service office. Record is thus kept of all illness and used as a guide for healthful supervision of the student. (See Rule 22, page 61.)

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 occupations of various sorts. There is an employment bureau for men conducted by the Y. M. C. A. to secure work for men who have to make their own expenses, and the dean of men assists in placement. The dean of women renders a similar service for women.

It is necessary, however, to advise caution in entering the University without funds. The University cannot be responsible for finding work for students. During periods of business depression it is especially difficult to secure part time work. It is not advisable for anyone to register unless he has in hand sufficient funds to maintain him for a quarter. This requires a minimum of $200. Students who expect to earn a portion of their support should not register for a full schedule of studies.

ACADEMIC AND VOCATIONAL GUIDANCE

Dean of Men.—The dean of men is held responsible for the welfare and discipline of the men students of the University. He has supervisory charge of Lander and Terry halls, the men's dormitories; and supplies lists of approved boarding and lodging places for men.

Advice will be given concerning the courses of study and vocational fields. The dean is always ready 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 supplies lists of approved boarding and lodging places, corresponds with parents or guardians who desire to make inquiry concerning their daughters or wards, give advice regarding courses of study, and offer vocational information of a general nature. She acts as counselor to the officers of organizations for women and supervises all student houses of residence.

Vocational Secretary.—The office of vocational secretary assumes the responsibility of all placement work. It is desirable that every student have a conference with the vocational secretary sometime before graduation. The office is also available to undergraduates for the purpose of advisement. The vocational secretary is also the executive secretary of the alumni association of the University. A great mutual service may be rendered by reporting to this office any positions open that would be of interest to University graduates.

DEGREES

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

Rule 9. The work of the senior year (a minimum of 36 credits earned in three quarters) must be done in residence. [H.B.—18].

Rule 10. Each senior, shall, upon registration, file with the registrar a written application for his degree. Each application shall be checked by the Committee on
Graduation at least six months before the date at which the student expects to be graduated and notice shall be sent to the student by the registrar of the acceptance or rejection of his application. The accepted list shall be submitted at the last regular meeting of the faculty for the quarter in which the checking is done and, if approved by the faculty, with or without modification, shall constitute the list of candidates to be recommended for graduation upon the completion of the work requisite for their respective degrees. No change shall be made in this list unless ordered by a two-thirds vote of the members of the faculty present. [H.B.—97].

Rule 11. All students shall have the option of being held to the entrance and graduation requirements of the catalogue under which they enter, or those of the catalogue under which they expect to graduate. All responsibility for fulfilling the requirements for graduation from the various schools and colleges of the University shall be thrown upon the student concerned. [H.B.—98].

Rule 12. The degrees of A.B. and A.M., B.S. and M.S., or two different bachelor's degrees, may be granted at the same time in all cases in which a minimum of fifteen quarters shall have been occupied in the work for the two degrees. [H.B.—99].

Rule 13. In determining the fitness of a candidate for a degree, his attitude towards his financial obligations shall be taken into consideration. [H.B.—100].

Rule 14. Theses shall be typewritten on sheets of ledgerweight paper eight and one half by eleven inches in size, and shall be bound in cloth, with the subject, the name of the author and the date of the presentation on the front cover, and the name and date on the back in gilt letters. A uniform and suitable margin shall be left on the typewritten pages. [H.B.—101].

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 is declared worthy of unusual distinction. Early in May each head of a department brings 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.

NORMAL DIPLOMAS

The University Normal Diplomas.—The University is authorized by law to issue teachers' diplomas, valid in all public high 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. Fuller information may be found in the department of education.

SENIOR SCHOLARS

Rule 15. (a) Students of the Colleges of Liberal Arts, Science, Fine Arts, Business Administration, and of the School of Education and Library School who are intellectually mature, who have 122 or more credits, and who have shown exceptional ability and capacity for independent work in some group of studies, shall be eligible for senior scholarships. Senior scholars shall be elected by the faculty, upon recommendation of the committee on honors, in the June preceding their senior year and their election shall be announced at Commencement and published in the catalogue. Ordinarily the number of scholars shall not exceed ten per cent of the class. Students of the above mentioned colleges, who, in the course of their senior year, show fitness therefor may be recommended and elected to senior scholarships.

(b) The work of the senior scholars shall be in not less than two nor more than four, allied subjects, which shall be so correlated as to bear upon some common field, the aim of these scholarships being breadth of knowledge and culture, rather than minute research. Except in the case of unfinished prescribed work or of courses in which the major professor deems attendance essential. Scholars are to be relieved from attendance at regular lectures and recitations and their work shall be done under the personal direction of the instructors with whom they are registered. The instructors in charge shall submit senior scholars at the end of the year to searching final examinations by which the grade of honor, if any, to be recommended to the Committee on Honors, shall be determined.

(c) Senior scholars shall be granted the library privileges accorded to members of the faculty and such monetary awards, if any, as may be available. [H.B.—102].

FELLOWSHIPS, SCHOLARSHIPS, AND AID

Loretta Denny Fellowships.—Three fellowships, of $500 each, open to graduate students in any department of the University. Awarded by the
faculty on the basis of scholastic excellence and general merit, but only to those who need financial assistance. Applications for these fellowships should be made on blanks supplied by the dean of the Graduate School, and must be in his hands on or before March 15 preceding the academic year for which the fellowships are to be granted.

Arthur A. Denny Fellowships.—Six fellowships of $500 each, open to graduate students in the departments of civil engineering, education, English, history, mining engineering, and pharmacy respectively. Awarded by the departments concerned on the basis of scholastic excellence and general merit, but only to those who need financial assistance. Applicants must be residents of the state of Washington. Applications for these fellowships should be made to the heads of the departments concerned on blanks supplied by the dean of the Graduate School, and must be in their hands on or before March 15 preceding the academic year for which the fellowships are to be granted.

National Research Fellowships.—Fellowships in physics and chemistry, offered by the National Research Council, are open to promising research students, who have already taken the doctor's degree or have equivalent qualifications. A successful candidate can pursue his research at any university or research institute chosen by him and which is acceptable to the appointing board. The salary will ordinarily be $1800 for the first year. Fellows are eligible for successive reappointments ordinarily with increase in salary. For details address the dean of the Graduate School or the heads of the departments.

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 or the Arthur A. 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.

Research Fellowships in Mining and Metallurgy.—The College of Mines of the University in cooperation 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 fellow 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.

Du Pont Fellowship.—Through its chemical department, Du Pont de Nemours & Co. offer an annual fellowship of $500 in chemistry, known as the "Du Pont Fellowship," open to a senior student or graduate student in chemistry or chemical engineering.

The Bon Marche Industrial Fellowship.—The Bon Marche of Seattle offers an annual fellowship of $600 to a graduate student in home economics for research work in textiles. The recipient of this fellowship is required to give one fourth of her time for eleven months to the testing of textiles for the Bon Marche.
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 $600, may be awarded annually.

Columbia University Fellowship.—Columbia University offers each year a fellowship of $250, open to students in mining, engineering, and chemistry.

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. These fellowships range from $540 to $720.

Graduate Scholarships.—A number of graduate scholarships are open to students who perform service as laboratory assistants, assistants in charge of quiz sections, or readers. The remuneration is proportioned to the service, and ranges from $180 to $360.

Rosenberg Scholarship.—A scholarship of $200, known as the “Samuel Rosenberg Scholarship, endowed in loving memory by Ella S. Rosenberg, his wife,” is open to graduate students in French. In making this award, account will be taken of the scholarship, personality and needs of the candidates.

Isabella Austin Scholarship.—The Isabella Austin scholarship of $100 for freshman women is awarded annually at the end of the fall quarter to a young woman of promise on the basis of scholarship and financial need.

Washington Alumnae Scholarship.—The Washington Alumnae offer an annual scholarship of $100 to be awarded to a woman member of the Junior Class on the basis of scholarship, activity in student affairs, personal character and wholesome influence in university life.

Imperial Order of Daughters of British Empire Scholarship.—The Vimy Ridge Chapter of the Imperial Order of the Daughters of the British Empire offers two annual prizes of $50 each for essays on some phase of history, politics, philosophy or sociology making distinctly for the maintenance and development of good relations between Great Britain and the United States. One of these prizes is open to students in residence during the regular academic year and is awarded at Commencement. The other is open to students in residence during the summer quarter and is awarded at the end of that quarter.

The Gamma Phi Beta Scholarship.—The Seattle Alumnae of Gamma Phi Beta offer an annual scholarship of $100 to that woman among the English major students who most nearly fulfills the following conditions: partial or complete financial self-dependence, high scholarship, strength of personality, wholesomeness of influence and promise.

The Frederick and Nelson Scholarships.—Frederick and Nelson of Seattle offers two scholarships, one to a boy and one to a girl, each of which carries $250 a year for the freshman and sophomore years. These scholarships are awarded on the basis of scholarship, personality, and business acumen.

The Beta Gamma Sigma Scholarship.—Beta Gamma Sigma offers a scholarship of $75 in the College of Business Administration, to be awarded to the self-supporting student with the highest grades at the end of the fifth quarter.

The A. F. Venino Scholarship.—Professor A. F. Venino offers an annual scholarship to the candidate showing the greatest proficiency and prom-
ise in piano playing. This scholarship carries free tuition for one weekly lesson throughout the autumn, winter and spring quarters. All candidates must submit their application in writing to Dean Glen before September 1. The competitive examination preliminary to the award is held in room 110, Meany hall, at 2 p.m. of the Saturday before registration day.

Chemistry Scholarship.—An anonymous donor offers a scholarship of $100 annually to the student doing the best work in chemistry.

**Prizes**

The Judge Alfred Battle Prize in Public Speaking and Debate.—Judge Alfred Battle offers an annual cash prize of $75 to the Washington debating team chosen to meet representative debaters from the University of Oregon.

The Seattle Bar Association Prize.—Each alternate year, beginning with the spring of 1908, the Seattle Bar Association gives the sum of $50 to defray the expenses of a debate between the representatives of the law schools of Oregon and Washington.

The Judge Kenneth Mackintosh Prize in Debate.—Judge Kenneth Mackintosh offers an annual prize of $75 to the University of Washington debating team, consisting of two men, who compete with Leland Stanford Junior University in debate.

The E. F. Blaine Prize in Oratory.—Mr. E. F. Blaine offers an annual cash prize of $100 to the winner in an intercollegiate oratorical contest of the universities of the northwest.

Fraternal Order of Eagles Prize.—Seattle Aerie No. 1 of the Fraternal Order of Eagles offers an annual prize of $50 for the best essay on a topic connected with courses in history of law or jurisprudence.

The Burke China Club Prize.—The Burke China Club Prize of $25 is awarded annually for the best essay on some subject related to the Chinese Literature, History or Language. Competitors are restricted to those who have had at least one term's work in Chinese Literature, History or Language.

The Sigma Delta Chi Prize.—The Sigma Delta Chi fraternity offers a prize of $100 to be awarded to the student who writes the best ten editorials published in The University of Washington Daily during the current year.

The Charles H. Bebb Prize in Architecture.—Mr. Charles H. Bebb offers an annual cash prize of $100 for the best design in some problem of architecture.

The Kellogg Prize in Architecture.—The William W. Kellogg Prize of $50 is awarded annually for competitive work in architecture and design and is open to juniors and seniors.

The Washington Brick and Lime Company Prize.—The Washington Brick and Lime Company of Spokane offers a prize of $50 in the department
of architecture to the sophomore, junior or senior student who submits the best design in terra cotta treatment.

*The Judge Thomas Burke Prizes in French.*—Judge Thomas Burke offers two cash prizes, one of $15 and one of $25, for general excellence in French.

*The Frank Buty Prize.*—The Frank Buty Prize of $20 is offered annually for the best essay on some subject related to the Italian Language and Literature.

*The Silvio Risegari Prize.*—The Silvio Risegari Prize of $50 is offered annually to the student in the College of Fine Arts who, at the end of the freshman year, shall have given evidence of superior scholarship in Italian.

*The Italian Commercial Club Prize.*—The Italian Commercial Club of Seattle offers a first prize of $75 and a second prize of $50 to the two students in the University who attain distinction in second-year Italian.

*The A. Merlino Prize.*—The A. Merlino Prize of $25 is offered annually to the student in the College of Science who writes the best essay on “An Italian Scientific Advancement During the Year.”

*Cattenari Brothers’ Prize.*—Cattenari Brothers offer an annual prize of $25 to the student in first-or second-year Italian who has made the greatest progress during the year.

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

*Military Science Prize.*—The members of the Non-commissioned Officers Training School have established a fund of $400, the income of which shall be utilized as a prize to be awarded to the student completing his junior year with the highest honors in military science.

**STUDENT LOAN FUNDS**

Several loan funds are available to assist students, both men and women, through financial emergencies. See the dean of men or the dean of women as the case may be for full information.

**ASSOCIATIONS AND CLUBS**

*Alumni Association.*—Every graduate of the University of Washington is a member of the Alumni Association. The records are kept by the permanent executive secretary, Mr. J. G. Fletcher, who is also the vocational secretary of the University. The control of the Alumni Association is determined by the alumni council which meets annually and consists of a representative from each local organization. It lays down the policies and these are carried out by the executive committee. The executive committee consists of five members elected by the council, one representative respectively of the Board of Regents, the faculty, and the associated students and the officers of the association who are elected annually. The annual dues are $3. All alumni who pay their dues also receive the *Alumnus*, the official publication.

*Associated Students.*—The Associated Students of the University of Washington (A.S.U.W.) is the central organization which conducts the activities of the student body. Membership is required of all regularly enrolled students and the annual fee is $10. ($1 for summer term.)
This fee shall give to each student a qualification for membership in this corporation, and shall give to each member free subscription to the University of Washington Daily and free or reduced admission to such football, basketball, baseball games, tennis, track and wrestling meets, crew regattas, debates, oratorical contests, musical concerts as may be designated by the Board of Control.

The management of the Associated Students is vested in an annually elected Board of Control, composed of fifteen members including nine students, three faculty and three alumni. The Board meets bi-weekly and has all the usual powers granted the directorate of any corporation. The Board employs a graduate manager as its executive agent. He is assisted by student managers and in 1921-1922 the business transacted amounted to $165,000, besides the stadium. The office of the graduate manager is in room 109 Commerce hall.

The Board also employs a manager of the A.S.U.W. bookstore and in 1921 the sales amounted to $160,000.

Christian Associations.—The Young Men's Christian Association is open to all men students and members of the faculty. The Association distributes the "W" book or student hand-book to men students. It is a service organization and will assist all the men of the University in finding homes, part-time employment, church affiliation and all other service needs, if desired.

The proposed new building will be located at the entrance to the campus on east forty-second street.

The Young Women's Christian Association on the campus has a membership of 800 women and maintains an active organization with headquarters at 210 Denny hall.

The purpose of the organization is to create and promote a spirit of Christian friendliness among the women students; to afford opportunities for the development of Christian leadership through cabinet and committee work; and to offer channels for self-expression through various forms of service work, both on and off the campus.

A full time general secretary is employed and her services are at the disposal of every University woman.

Department Clubs.—The following clubs are connected with the work of different University departments: American Chemical Society, American Institute of Electrical Engineers, American Society of Mechanical Engineers, Business Administration Council, Chemical Club, Classical Club, Deutscher Verein, Education Club, English Club, Engineers Council, Fisheries Club, French Club, Forestry Club, Graduate Club, Home Economics Club, Law Association, Maritime Commerce Club, Mathematical Journal and Research, Mines Society, Officers Club, Pharmacy Club, Philological Club, Political Science Club, Physical Education Club, Pre-Medic Club, Scandinavian Club, Spanish Club, Women's Athletic Association, Zoology Club.


Debating Societies.—There are four debating and literary societies in the University: Stevens, Badger, Athena and Sacajawea. The first two are for men, the last two for women. Membership in the clubs is limited in order that frequent practice may be afforded.
The Pacific Coast Triangular Debating League, consisting of the Universities of Washington, Oregon, and Stanford, holds an annual triangular debate. Each institution has two teams, representing the affirmative and negative of the question under discussion.

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

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 Ensemble, Orchestra and Band.

Philological Association.—The Philological Association was organized to encourage scientific investigation in languages 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: Alpha Kappa Psi—Commerce, Association University Players—Dramatics, Beta Gamma Sigma—B.A., Big "W" Club, Calva et Ossa—Pharmacy, Delta Phi—Debate (Women), Eta Sigma Phi—Home Economics (Local), Fir Tree—(Senior Men), Hammer and Coffin—Comic Publication, Iota Sigma—Chemistry (Women), Iota Tau Alpha—Dramatics (Men), Kappa Psi—Pharmacy (Men), Knights of the Hoo: Lambda Rho—Art (Women), Mu Phi Epsilon—Music (Women), Oval Club—(Junior and senior men) Pan Xenia—Foreign Trade, Phi Alpha Delta—Law, Phi Beta Kappa—Scholarship, Phi Delta Delta—Law (Women), Phi Delta Kappa—Education (Men), Phi Delta Phi—Law (Men), Phi Lambda Upsilon—Chemistry (Men), Phi Mu Alpha—Music (Men), Phi Sigma Chi—Commerce (Women), Pi Lambda Theta—Education (Women), Pi Mu Chi—Pre-Medic, Red Domino—Dramatics (Women), Scabbard and Blade—Military, Sigma Delta Chi—Journalism (Men), Sigma Epsilon—Pre-Medic (Women), Sigma Upsilon—Literary Fraternity (Men), Sigma Xi—Scientific, Tau Beta Pi—Engineering, Tau Kappa Alpha—Debate (Men), Theta Sigma Phi—Journalism (Women), Tolo Club—(Junior and Senior Women), Atelier—Architecture, Xi Sigma Pi—Forestry (Men).

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.

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.

Rule 16. No person may regularly attend any course in which he has not been registered as a student or enrolled as an auditor. (H.B.—28)

All women students are required to take three hours of gymnasium work per week throughout the first and second years, ten credits in physical training 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 years.
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 gymnasiump 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 registrar's office.

Rule 17. It shall be the duty of every student of whom military science or physical training is required to see that he is properly registered for the course, and to report for instruction. The fact that a student was not formally registered does not excuse him from attending. Students who are required to take military science or physical training, but fail to report for work, will, with the approval of the president, be excluded from all classes. The responsibility of complying with the regulations regarding military science and physical training rests entirely with the student. [H. B.—44]

Rule 18 (a) Men who are to be at the University for only one year, preparing for entrance into some other institution, e.g., a medical school, may be permitted to postpone the course, with the understanding that if they register in the University in succeeding years, they shall be required to take the full course.
(b) Men who, because of physical condition, age, civil status, or pecuniary circumstances necessitating outside work, should not, in the judgment of their dean, be required to take the work in military science, may be permitted by the commandant of cadets to substitute physical training or scholastic work therefor. [H. B.—45]

Rule 19. Each request for permission to postpone, or substitute for the regular course in the department of military science and tactics, shall be acted upon by the commandant of cadets, on the recommendation of the dean concerned. Each grant of permission must be filed in the registrar's office. [H. B.—46]

Rule 20. Only short course students in mining and forestry shall be exempt from the requirements in military science and physical training. [H. B.—47]

Rule 21. The dean concerned and the physical director together may grant permission to a student to postpone, or substitute scholastic work for the required work in physical training. The grant of permission must be filed in the registrar's office. [H. B.—48]

REGULATIONS FOR WITHDRAWAL

Withdrawal is the voluntary severance by a student of his connection with a course or with the University and is indicated on the registrar's books by a "W". During the first four weeks of a quarter, a student may withdraw from a course and be given a "W" with the written consent of his dean and his instructor. If he desires to withdraw at a later period, he may do so, but if his work has not been satisfactory he shall be given an "E" instead of a "W"; provided, however, that, if in either case, a withdrawal will reduce the student's hours below 12, it must be approved by his dean. A student who drops a course without withdrawing shall be given an "E" in the course.

LEAVE OF ABSENCE

A leave of absence from the University, involving excuses from classes, may be granted by the dean concerned except as hereinafter provided.

Rule 22. (a) Leaves of absence on account of sickness shall be granted by the University health service, and shall be taken personally to the instructors concerned. Students absent on account of sickness shall not be re-admitted to classes without this written excuse. The University health service shall file a copy of these leaves of absence with the dean of men or the dean of women respectively.
(b) Leaves of absence from one class period with the exception of cases included in rule 22 (a) may be granted by instructors.
(c) Leave of absence from the University for recognized student activities (athletics, music, debate, etc.) shall be passed on by the dean of men and the dean of women respectively. [H. B.—30]

SCHOLARSHIP STANDING

Rule 23. (a) Any student who, at the end of the fifth week of any quarter, is reported as doing work below passing grade in two or more of his subjects, aggregating more than one-third of his registered hours, shall be warned and placed on probation for the remainder of said quarter.
(b) Any student who, at the end of any quarter, fails in two or more subjects, aggregating more than one-third of his registered hours, shall be dropped. Reinstatement in the following quarter shall be allowed only on permission of the Board of Deans. If such student is reinstated he shall be on probation and shall register under conditions prescribed by his dean, who shall be his registering officer. 

(c) To be eligible for reregistration during the academic year 1922-1923 or any succeeding academic year, a student must have made grades of A, B, or C, in two-thirds of his hours for the last academic year; provided, that a student eliminated by this rule shall be eligible for reregistration after the interval of one succeeding autumn, winter, or spring quarter. [H.B.—29]

NOTE:—In the administration of these rules military science and physical education shall be on the same basis as so called “academic subjects.”

EXAMINATIONS

Rule 24. Examinations shall be held at the close of each quarter in all courses. Instructors desiring to excuse any or all students from examinations in any course shall obtain the approval of the head of the department and the dean of the college concerned. [H.B.—31]

Rule 25. Examinations shall be held in each course at the last scheduled class-hour of the quarter, and also at the next proceeding class-hour, if desired; except in laboratory courses, when the last laboratory period may be used as a substitute or in addition. In case an instructor wishes to give an examination at other than the scheduled time, he must get the permission of the Board of Deans. [H.B.—32].

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.

Under “Departments of Instruction” such courses are indicated by course-numbers connected by hyphens.

Rule 26. A student desiring to be absent from his scheduled examinations must before leaving college, present to the instructors concerned permission from his dean to be absent. [H.B.—33]

Rule 27. A student, absent from a scheduled examination either by permission of his dean, or through sickness, or other unavoidable cause, may take another examination under the following conditions:
(a) He shall satisfy his dean as to his reasons for absence;
(b) He shall pay a fee of $1 at the comptroller’s office and get a receipt for same;
(c) He shall present this receipt to the registrar, who shall issue a card entitling student to examinations;
(d) He shall present this card to the instructors concerned and take the delayed examination at a time approved by his dean and instructor. No instructor need give more than one special examination in any one subject in any quarter. [H.B.—34]

Rule 28. Reports of all examinations of seniors must be in the registrar’s office by 8 p.m. of the Monday preceding commencement day. Examination for all candidates for graduation at the end of the autumn, winter, and summer quarters shall conform to the regular examination schedule. [H.B.—72].

CREDITS

Credits are the units in which quantity of work at the University of Washington is measured. Thus, a quarter course in which there are five weekly recitations is a five-credit course, and 190 credits are required for graduation from the College of Liberal Arts and College of Science.

SYSTEM OF GRADES

1. The following is the system of grades:*

A ____________________________ Honor
B ____________________________ Intermediate
C ____________________________
D ____________________________
E ____________________________ Failed
I ____________________________ Incomplete
W ____________________________ Withdrawn

*These grades correspond approximately to the old marking scheme as follows: A, 100-96; B, 95-86; C, 85-76; D, 75-70; E, 70-0.
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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. An Incomplete in a course may be changed to a passing grade during the next quarter in which the student is in residence, provided the work of the course shall have been finished in a satisfactory manner; otherwise it becomes an "E". In special cases removal of an Incomplete may be deferred by the dean of the proper college. Notice of such deferrment must be filed with the registrar before the Incomplete has been changed to an "E".

2. Candidates for the bachelor's degrees in the colleges of Liberal Arts, Science, Business Administration, Fine Arts, the Library School, the School of Education, and the School of Journalism, must receive grades of A, B, or C in three-fourths of the credits required for their respective degree.

3. The grades of "passed" or "failed" are used in reporting the work of graduate students.

Rule 29. Except in cases of clerical error, no instructor shall be allowed to change a grade which has once been turned in to the registrar. [H.B.-75]

TUTORING RATES

Rule 30. The maximum rates to be charged by official tutors shall be as follows:

<table>
<thead>
<tr>
<th>No. in Class</th>
<th>Fee per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$2.00 per student</td>
</tr>
<tr>
<td>2</td>
<td>1.20 &quot; &quot;</td>
</tr>
<tr>
<td>3</td>
<td>1.00 &quot; &quot;</td>
</tr>
<tr>
<td>4</td>
<td>.90 &quot; &quot;</td>
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<tr>
<td>5</td>
<td>.80 &quot; &quot;</td>
</tr>
<tr>
<td>6</td>
<td>.70 &quot; &quot;</td>
</tr>
<tr>
<td>7-15</td>
<td>5.00 &quot; Class</td>
</tr>
</tbody>
</table>

No class to be larger than 15.
No reduction to be made for absences...
Fees to be payable by the month, in advance. [H.B.—98].

LIBRARY RULES

Rule 31. Following shall be regulations governing the use of the library.
(a) Any student may borrow books from the library for a period of two weeks; provided, however, that any book may be called in at any time.
(b) A loan may be renewed on or before the day the loan expires if there is no other demand for the book.
(c) A fine of 5 cents per day is imposed for each day a book is retained after it is due; provided, however, that if a book is retained five days or more after it is due the borrower may be assessed double the accumulated fine. The date a book is due is stamped inside the back cover.
(d) Any reserved book may be borrowed for any period when the library is to be closed, but failure to return the same within ten minutes after the library next opens will subject the borrower to a fine of ten cents for the first hour or any part of that hour and five cents for each additional hour or fraction thereof that the book is retained. All fines are due when the book is returned.
(e) Books must not be taken from the library without being charged at the loan desk.
(f) Failure to comply with (c), (d) or (e) shall be considered "a delinquency in a financial obligation". [H.B.—71].

BOARD OF DISCIPLINE

Rule 32. All charges of infraction of the rules and regulations of the University shall be referred to the board of discipline, consisting of the dean of faculties, the dean of women and the dean of men, for investigation and final adjudication; provided, however, that charges of scholastic dishonesty involving women shall first be investigated by the women student members of the board of control and their findings reported to said board of discipline, and that charges of scholastic dishonesty involving men shall first be investigated by the male student members of the board of control and their findings reported to said board of discipline. The student investigating committees mentioned in the latter part of this rule shall be known as the discipline committees of the board of control.

Rule 33. The comptroller and the registrar are instructed not to record the credits of a student who, in their joint judgment, has been delinquent in meeting his financial obligations, a student whose credits have thus been withheld, is in the same situation as one who has failed. [H.B.—18].
STUDENT PUBLICATIONS

Rule 34. Only those publications may make use of the good will of the University in soliciting advertising who shall be so designated by the committee on publications. [H.B.—63].

Rule 35. All requests for permission to issue student publications shall be referred to the committee on publications, with power to act. [H.B.—64].

Rule 36. The editor of the University of Washington Daily and the editors of all other student publications shall be held responsible for all matter that appears in their respective publications. Correspondents of all other publications shall be held similarly responsible for all items contributed by them to their respective publications [H.B.—65].

Rule 37. No special editions of The Daily, by special sets of editors, shall be allowed. [H.B.—66].

STUDENT ACTIVITIES

Rule 38. Student activities shall include:
(a) Any sport or pursuit for which an A.S.U.W. emblem is granted.
(b) Any sport or pursuit organized under an A.S.U.W. coach or a member of the faculty in preparation for (a).
(c) Any semi-scholastic pursuit for which credit is given.
(d) Any all-university public performance managed by students.

Rule 39. In order to be eligible to represent the University in any intercollegiate activity, a student must:
(a) Have presented for entrance 15 Carnegie units, have been in residence for at least three quarters and have completed satisfactorily at last 36 hours of scholastic work; provided, that the requirement of three quarters in residence shall not apply to activities open to freshmen under Pacific Coast Conference Rules.
(b) Have successfully carried two-thirds of the normal work of the curriculum in which enrolled during the previous quarter and also be carrying satisfactorily two-thirds of the normal work of the curriculum in which enrolled during the quarter in which he desires to participate. Previous quarter shall be considered as the last quarter preceding such participation in which the student was carrying at least two-thirds normal work of the curriculum in which enrolled. For the purpose of this rule, a student shall be considered to have been in residence for a quarter if he attended the University for two months of the quarter.

(c) Keep off probation.

(d) If he contest requires his absence from classes, secure a written leave of absence, as provided in Rule 22 (e);

(e) Further, in the case of athletic activities, pass any physical tests set by the department of physical education and practice at least a month before a meet or game.

(f) In group (e) under the definition of student activities, a student shall satisfy the department responsible for the work, before he is allowed to represent the University.

(g) In group (d) under the definition of student activities, a student shall satisfy the university committee on student welfare, before he is allowed to represent the University. [H.B.—61].

Rule 40. An 'Incomplete' shall have the same value as an 'E' in determining the eligibility of a student to represent the University in student activities. [H.B.—62].

Rule 41. Any member of a squad found eligible one week before the first contest in a given sport shall be declared eligible, scholastically, for the remainder of the season, unless scholarship reports would (see Scholarship Standing page 32) drop him from the roll of the University; provided, that in cases of moral delinquency, no previous notice shall be required to disqualify a student from representing the University in any intercollegiate student activity. [H.B.—53].

Rule 42. No student shall be eligible to represent the University, who has total failures earned on his previous record exceeding one-fifth of his total hours earned. [H.B.—54].

Note—If a student has been two quarters in residence, has 20 quarter credits and has been for at least one quarter in Allied Service, he shall be considered eligible for the first quarter after his return to college, to participate in intercollegiate athletics.

Rule 43. No person not an officer or student of the University shall be allowed to represent it in any student activity. [H.B.—55].

Rule 44. No student shall take part in more than one dramatic performance during a quarter. This rule does not apply to dramatic performances which are entering as part of a regular course for credit. [H.B.—56].

Rule 45. The qualifications of students for debate, oratory and important parts of musical and dramatic entertainments shall be passed upon at least four weeks before the date of the contest or entertainment; except that, on the recommendation of the instructor in charge, less time may be permitted, to intervene between the
GENERAL INFORMATION

selection of participants and the date of the contest or entertainment. [H.B.—57].

Rule 46. The rules governing eligibility of participants in student activities shall apply to the editors-in-chief and business managers of The Daily and The Types, except that after these officers have been once approved, said rules shall not apply to their cases. [H.B.—58].

Rule 47. Students on probation are not allowed to take part in practice games in athletics with outside teams. [H.B.—59].

Rule 48. Athletics for women shall be limited to games and contests within the University. Such games and contests shall not be open to the public. [H.B.—60].

MISCELLANEOUS

Rule 49. Smoking shall not be allowed in the University recitation or laboratory buildings or on the steps thereof. [H.B.—67].

Rule 50. Flash-ball contests, tie-ups, and all other forms of class conflicts are prohibited. Any forms of bazing, or of interference by any class or any members of any class with the personal dignity and liberty of any member of any class, are a breach of discipline and are prohibited. [H.B.—70].

Rule 51. (a) Student clubs or organizations connected with the work of a department or departments may have speakers to address them at the University; provided the speakers are vouched for by the head of the department concerned. They must also secure the permission of the superintendent of buildings to use the University grounds or buildings.

(b) Other student groups, clubs, or organizations wishing to have speakers to address them must have the speakers approved, and must secure the permission of the superintendent of buildings for the use of any of the University buildings or any part of the grounds of the University. [H.B.—69].

Rule 52. There shall be but two University formal social functions in any academic year, viz., the junior prom and the varsity ball; and these shall not be open to freshmen. [H.B.—49].

Rule 53. (a) During the first four weeks of the first quarter, no fraternity or sorority may have speakers to address members or guests at any social function at which members of the opposite sex are entertained.

(b) During the college year, social functions may be held on Fridays and Saturdays only. For the purpose of this rule, single holidays shall be considered integral parts of the college year.

(c) No social functions involving both sexes may be held within the two weeks preceding the quarter or year examinations.

(d) During the college year, picnics may be held only Saturdays. [H.B.—50].

FRATERNITIES AND SORORITIES

Rule 54. (a) No fraternity or sorority shall pledge any person for membership whose registration in the University is not complete. [S.W. REGISTRATION.]

(b) Having less than junior standing shall be initiated into a fraternity or sorority until he or she has earned 18 credits or provisional credits in two quarters, or 15 in one quarter, at this University. Credits or provisional credits for work taken to remove entrance conditions may not be counted.

(c) Any ex-service man entering the University with fifteen entrance units, at least ten academic credits, and a minimum of twelve military credits, shall be regarded as eligible for initiation into a fraternity.

(d) Any ex-service man who, in addition to having fifteen entrance units and a minimum of twelve military credits, shall have earned in the University a minimum of ten credits in one quarter, shall be eligible for initiation into a fraternity; provided always that if he is registered for less than fifteen hours, he must have passed in all his hours.

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

(f) Special students desiring to be initiated into fraternities or sororities must also be approved by the student affairs committee. Unclassified students and others having unrenewed entrance conditions may also be referred by the registrar to the student affairs committee for approval. [H.B.—61].

Rule 55. The location of all fraternity and sorority houses must be approved by the president of the University. [H.B.—62].
COLLEGE OF LIBERAL ARTS

The Faculty

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DANIEL THOMPSON, B.A. (Toronto), ......................................... Professor of Latin; Dean

FRED CARLTON AYER, Ph.D. (Chicago), .......................... Professor of Education

ALLEN ROGERS DENHAM, Ph.D. (Yale), ............................ Professor of English

FREDERICK ELAM BOLTON, Ph.D. (Clark), .............................. Professor of Education; Dean of the School of Education

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JAMES P. ROBERTSON, C.P.A. Lecturer in Accounting
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WILLIAM RUSSELL, Acting Instructor in Business Administration
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FRED HARVIT HEATH, Ph.D. (Yale), Assistant Professor of Chemistry
EDWIN JAMES SAUNDERS, A.M. (Harvard), Assistant Professor of Geology
The College of Liberal Arts provides instruction in languages, education, economics and business administration, history, mathematics, philosophy, political science, psychology, and sociology. Together with the College of Science, it affords the student an opportunity to acquire a general education which shall serve as a sure foundation for real success in whatever profession he may choose. In the College of Liberal Arts the junior certificate plan is in operation, through which the work of the high school is closely articulated with that of the college. In order to obtain the degree of bachelor of arts, it is necessary for the student first to obtain his junior certificate. This represents the satisfactory completion of the work of the first two years in college, and leads, after two more years of work, to the degree. The details of the plan are set forth below.

It is highly desirable that students entering the College of Liberal Arts from another institution should obtain from the registrar, as soon as possible, a statement of what they must do in order to be granted the junior certificate and later, their bachelor's degree. Otherwise, by failing to fulfill the requirements, they will find their graduation postponed for a quarter or more, despite the fact that they may have earned credits sufficient in number to entitle them to the degree.

**Requirements for Admission**

**Correspondence.**—Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the Registrar, University of Washington. Full information concerning admission, registration, and expenses may be found on pages 40, 48, 49.

**Freshman Standing.**—Freshman standing in the University is granted to any recommended graduate of a four-year accredited secondary school who meets the scholarship requirements outlined on page 41.

**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, and the two units in a foreign language required for Liberal Arts, the student expecting to enter this college is advised to take as many as possible of the subjects specified on a succeeding page among "Requirements of the Lower Division," under group 2, "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.

**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 at least two full years of normal school work after graduating from a four-year accredited high school, will be admitted to junior standing in the College of Liberal Arts. For graduation with the degree of bachelor of arts, these students are required to earn a minimum of 90 credits in the University, including the satisfaction of such of the requirements for the degree of bachelor of arts as have not been fairly covered by previous work. Claims for advanced university credit based on excess normal credit will be passed on by a committee consisting of the registrar, the dean of the college and the heads of the departments concerned.
To secure the degree of bachelor of arts (A.B.) the student must complete not less than a total of 190 credits and must observe the restrictions in regard to major and group requirements, scholarship requirements, and the requirements of the lower division and upper division.

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, Romanic languages and literature, Russian, Scandinavian.

Group 2. Philosophical.—Economics and business administration, education, history, mathematics, philosophy, political science, psychology, 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 undergraduates 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

*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; course in civilization and literature.
3. English: 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., medi eval and modern (1-2), American (67-06), English (6 and 6), ancient (71-72-73).
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.
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.

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 (a) 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.

   (d) A foreign language, 2 years (2 units or 20 credits). See note 4 and paragraph in Reading Knowledge of a foreign language, page 72.

2. **Subjects Required Either in High School or College.**
   
   (a) U. S. history and civics, 2 quarters (1 unit or 9 to 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 geology, or zoology, 2 quarters (1 unit or 10 credits).

3. **Subjects Required in College.**
   
   (i) Philosophy, 1 quarter (5 credits).

   (j) Psychology, 1 quarter (5 credits).

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

   (l) Physical education or military science, regular freshman and sophomore requirements.

4. **Subjects Conditionally Required in College.**
   
   (m) Ancient life and literature, 2 quarters, (10 credits). See note 3.

   (n) English composition, 2 quarters, (10 credits). See note 5.

**NOTES**

1. Students who do not take United States history and civics in the high school must take History 57-58 in the University.

2. One year of history is required in addition to requirement (e). It may be satisfied in any year (1 unit or 9 or 10 credits) of history.

3. Two quarters' work in ancient life and literature is required of all students who have not taken, or do not plan to take, 2 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.

4. Two years of one of the following foreign languages is required for admission to the College of Liberal Arts: Latin, Greek, French, Spanish, Scandinavian, Italian. (In special cases other languages may be accepted). If the requirement has not been met in high school, it must be made up in college. This work shall be taken without credit unless the student presents two units in another foreign language.

5. 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 the requirements for the junior certificate. The minimum amount of work to be done in the upper division will vary from 90 to 72 hours of credit, according to the number of hours offered for the junior certificate. The student must earn not less than 72 hours of credit while enrolled in the upper division. At least 48 hours of the credit hours taken in the upper division must be in the upper division courses (Courses 100 to 199). Of the 180 academic credits required for graduation at least 60 must be taken in courses numbered 100 or higher and of these 60, eighteen (not counting teachers' courses) must be taken in the major department.

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.

V. READING KNOWLEDGE OF A FOREIGN LANGUAGE

Beginning with the year 1924 a reading knowledge of any one of the foreign languages taught in the University will be required for graduation from Liberal Arts. (This requirement will not apply to graduates from the Six-Year Arts and Law Curriculum.)

SCHEME OF ELECTIVES

For the purpose of election, outside the major department, the College of Liberal Arts, the College of Science, the School of Education, the College of Business Administration and the School of Journalism are 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 36 credits may be counted.

College of Pharmacy.—Materia medica, therapeutics, toxicology. Total amount allowed, 12 credits.

College of Engineering.—Mechanical drawing, descriptive geometry, surveying, direct currents, alternating currents, engineering problems. Total amount allowed, 18 credits.

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.—General forestry, characteristics of trees, forest economics, silviculture. The maximum number of hours elective from these subjects is 18.

School of Law.—Agency, constitutional law, contracts, general business law, equity, persons, property. From these 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 nine credits may be so counted by a student majoring in any 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 135 credits, plus the ten required 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 154. Thirty-six credits in the first year law work may apply toward the A.B. degree, thus making 190 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 144 (plus 10) 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.

Courses

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).
COLLEGE OF SCIENCE

The Faculty

HENRY STEELE CONDON, Ph.D. (Columbia), LL.M. (Northwestern) .............................................. PRESIDENT

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

THEODORE CHRISTIAN FITZ, Ph.D. (Chicago) .................................................. Professor of Botany

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

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

ROBERT EDOUARD MONTE, Ph.D. (Nebraska), Ph.D.D. (Strassburg), Professor of Mathematics

DAVID CONNOLLY HALL, ScM, M.D. (Chicago), Professor of Hygiene and University Health Officer

HENRY KERNER BENSON, Ph.D. (Columbia) .................................................. Professor of Industrial Chemistry

JOHN WEINKEIL, Dr.P.H. (Harvard) .................................................. Professor of Bacteriology

EUGENE ISABEL RAYT, M.A. (Chicago) .................................................. Professor of Home Economics

STEVENS SMITH, Ph.D. (Pennsylvania) .................................................. Professor of Psychology

WILLIAM MAURICE DRIN, Ph.D. (Illinois) .................................................. Professor of Organic Chemistry

GEORGE McPHAIL SMITH, Ph.D. (Freiburg) .................................................. Professor of Inorganic Chemistry

*CHARLES EDWIN WEAVER, Ph.D. (California) .................................................. Professor of Geology

ERICO TEMPLE BELL, Ph.D. (Columbia) .................................................. Professor of Mathematics

ALLEN FULLER CARPENTER, Ph.D. (Chicago) .................................................. Associate Professor of Mathematics

HENRY LOUIS BAUER, Ph.D. (Cornell) .................................................. Associate Professor of Engineering Physics

GEORGE BURTON RIGGS, Ph.D. (Chicago) .................................................. Associate Professor of Botany

JOHN L. MCWHIRTER, M.D. (Med. School University of Alabama) .................................................. Associate Professor of Anatomy

ROY MARTIN WINGE, Ph.D. (Johns Hopkins) .................................................. Associate Professor of Mathematics

HERMAN VANCE TARK, Ph.D. (Chicago) .................................................. Associate Professor of Chemistry

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

GEORGE IRVING GAFFERT, B.S. (C.E.) (Michigan) .................................................. Assistant Professor of Mathematics

KELLY VICTOR SMITH, Ph.D. (Northwestern) .................................................. Assistant Professor of Zoology

GRACE GOLDINA DENNY, M.A. (Columbia) .................................................. Assistant Professor of Home Economics

JOHN WILLIAM HOBSON, Ph.D. (Harvard) .................................................. Assistant Professor of Botany

LOUIS IVEY NEISH, Ph.D. (Pennsylvania) .................................................. Assistant Professor of Mathematics

SAMUEL HERBERT ANDERSON, Ph.D. (Illinois) .................................................. Assistant Professor of Physics

EDWIN R. GUTHRIE, Ph.D. (Pennsylvania) .................................................. Assistant Professor of Psychology

FRISBIE HARVEY, Ph.D. (Yale) .................................................. Assistant Professor of Chemistry

THOMAS GORDON THOMPSON, Ph.D. (Washington) .................................................. Assistant Professor of Chemistry

GEORGE EDWARD GOODSPEND, Jr., B.S.M.E. (Massachusetts Institute of Technology) .................................................. Assistant Professor of Geology

ELIZABETH AMEZIT, B.S. (Wisconsin) .................................................. Assistant Professor of Home Economics

VIRGINIA CUNNINGHAM PATTY, (Diploma, Ecole Guerre, Paris) .................................................. Assistant Professor of Home Economics

MARY ANNA GROSS, A.M. (Columbia) .................................................. Director of Physical Education for Women

JAMES GEORGE ABDUTHOW, B.S. (Kansas) .................................................. Assistant Professor of Physical Education

*Absent on leave.
HORACE GUNTHER, A.M. (Kansas)                      Assistant Professor of Zoology
MARTHA KOLLMAN, A.M. (Ohio)                      Assistant Professor of Home Economics
KATHERINE VAN WINKLE PALMER, B.S. (Washington)   Acting Assistant Professor of Geology
WILLARD HENRY EDLER, B.S. (S.B.) (California)     Instructor in Physics
LLOYD LEROY SMILL, Ph.D (Columbia)               Instructor in Mathematics
MARTHA DIJESLAB, M.S. (Columbia)                  Instructor in Home Economics
WILLIAM RONALD WILSON, A.B. (Washington)         Instructor in Psychology
JOSEPH M. TAYLOR, M.S. (Adrian College)          Acting Instructor in Mathematics
SARGENT G. POWELL, Ph.D. (Illinois)               Instructor in Chemistry
LOU EASTWOOD ANDERSON                             Acting Instructor in Physical Education
FREDERICK AMYTHE MCMILLIN, M.S. (Williamette)     Acting Instructor in Chemistry
HENRY WALTER STAGER, Ph.D. (California)          Instructor in Mathematics
CLINTON LOUIS UTHERBACH, M.S. (Washington)       Instructor in Physics
MARY AID, A.B. (Wisconsin)                        Instructor in Physical Education
MARCUS A. HANNA, A.B. (Kansas)                   Instructor in Geology
EARL D. WEST, A.M. (Adrian College)              Associate in Mathematics
ETHEL SANDERSON RAPFORD, A.B. (McGill)           Associate in Chemistry
HARMAND ROLLIN, Ph.D. (Royal University of Utrecht, Holland) Associate in Mathematics
LILIAN BLOOM, (Graduate, Medical Gymnastic Institute, Stockholm, Sweden) Associate in Physical Education
MALOLIEN HELEN WHIPPLE, A.B. (Colorado College)  Associate in Chemistry
CARL ZENO DRAVES, M.S. (Ch.-E.) (Washington)     Associate in Chemistry
CLARENCE EDMUNDSON, B.S. (Idaho)                 Associate in Physical Education
**WILLIAM ALBERT HAMILTON, A.B. (Cornell)        Associate in Mathematics
WALDO SIMON, B.S. (Washington)                   Associate in Chemistry
ELIZABETH S. SOULSBY, R.N. (Malden)              Massachusetts Hospital School of Nursing and Public Health
CLYDE MYRON CHAMBER, M.S. (Washington)           Associate in Mathematics
SHIBDON LATTA GLOVER, B.S. (Washington)          Associate in Geology
ARTHUR RUDOLPH JENSEN, B.S. (Washington)        Associate in Mathematics
ROBERT LEE MATTHEWS, Notre Dame)                 Associate in Physical Education
ENOCH BAGSHAW, B.S. (Washington)                 Associate in Physical Education
GEORGE E. WHITWELL, B.S. (Massachusetts Institute of Technology) Associate in Chemical Engineering
LAWRENCE FISHER, A.B. (Wesleyan)                 Lecturer in Geology

**Died, Feb. 14, 1922.
The student entering the College of Science may take one of several curricula, general or specialized, with the emphasis upon pure or applied science. These curricula, set forth in detail in succeeding pages, are:

I. Elective curricula with a major in some one department for students desiring general training in science, and leading to the degree of bachelor of science.

II. Suggested curricula in the various departments for students desiring to specialize in one department or obtain professional training, and leading to the degree of bachelor of science in the respective subjects.

A. Bacteriology  F. Physics
B. Biology  G. For prospective science teachers
C. Chemistry  H. Combined Science and Law
D. Geology  I. Library Science
E. Mathematics

III. Prescribed curricula in vocational subjects.

A. Pre-medical  C. Home Economics
B. Nurses  D. Physical Education for women

LABORATORIES
(For description of science laboratories see pages 29-36)

REQUIREMENTS FOR ADMISSION

Correspondence.—Credentials and all correspondence relating to admission to any college or school of the University should be addressed to the Registrar, University of Washington. Full information concerning admission, registration, and expenses may be found on pages 40, 48, 49.

Freshman Standing.—Freshman standing in the University is granted to any recommended graduate of a four-year accredited secondary school who meets the scholarship requirements outlined on page 41.

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, and the two units of a foreign language required for admission to the College of Science, the student expecting to enter this college is advised to take as many as possible of the subjects specified on a succeeding page among “Subjects required either in a secondary school or in the University.” 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.

CURRICULA

I. ELECTIVE CURRICULA WITH A MAJOR IN 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 190 credits, and must observe the restrictions in regard to a major subject, necessary scholarship and elections in other colleges.

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.
COLLEGE OF SCIENCE

B. SCHOLARSHIP REQUIREMENTS

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

C. ELECTIONS IN OTHER COLLEGES

In engineering, fine arts, fisheries, forestry, law, mines, and pharmacy, electives will be allowed to the extent of 25 credits from any one college, and not to exceed 36 from all.

D. DISTRIBUTION OF REQUIRED WORK

At least 60 of the scholastic credits presented for graduation shall be in courses numbered above 100, and of these 60 credits, at least 18 shall be in the major subject. The requirements for graduation and their distribution shall be as follows:

   (a) English, three years.
   (b) Elementary algebra, one year.
   (c) Plane geometry, one year.
   (d) One foreign language, two years.

2. Subjects Required Either in a Secondary School or in the University.
   (e) United States history and civics, one year (or ten credits).
   (f) History other than (e), one year (or ten credits).
   (g) Mathematics, geology*, or astronomy, one year (or ten credits).
   (h) Chemistry, one year (or ten credits).
   (i) Physics, one year (or ten credits).
   (j) Botany or zoology, one year (or ten credits).
   (k) A certificate of proficiency in English must be obtained either by registration or entrance examination.

3. Subjects Required in the University.
   (l) Physical education or military science, two years.
   (m) Economics, history, language and literature, philosophy, political science, psychology, sociology, 20 credits (ten credits only may be taken in any one of these subjects).

II. CURRICULA IN THE VARIOUS DEPARTMENTS

A. BACTERIOLOGY

FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
<td>English 1</td>
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<td>English 2 or Elective</td>
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</tr>
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<td>Chemistry 3</td>
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<td>5</td>
<td>Sociology 1</td>
<td>5</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1%</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1%</td>
<td>Mil. Sci. or Phys. Ed.</td>
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</table>

SECOND YEAR

| Bacteriology 101 | 5 | Bacteriology 102 | 5 | Bacteriology 103 | 5 |
| Chemistry 181    | 5 | Chemistry 182    | 5 | Chemistry 111    | 5 |
| Anatomy 106      | 5 | Anatomy 107      | 5 | Anatomy 107      | 5 |
| Mil. Sci. or Phys. Ed. | 1% | Mil. Sci. or Phys. Ed. | 1% | Mil. Sci. or Phys. Ed. | 1% |

THIRD YEAR

| Bacteriology 104 | 4 | Bacteriology 105 | 4 | Bacteriology 106 | 4 |
| Physics 1        | 6 | Physics 2        | 5 | Physics 3        | 5 |
| Electives        | 4 | Electives        | 4 | Electives        | 4 |

*Physiology (with laboratory work) taken in a high school will be accepted instead of zoology.

†A student who has not taken in high school the amount of foreign language which may be required for admission to the college that he plans to enter, will make up the deficiency in the University as part of his regular schedule of work, but without receiving college credit for it. For the College of Science, the requirement may be satisfied with two entrance units, or 20 college hours, in any one foreign language.
Electives in anatomy, botany, or zoology, he should at once consult with the department concerned, a member of which will act as his advisor. The advisor will then plan a special curriculum for the student, be made with the consent of the advisor and the dean.

B. BIOLOGICAL SCIENCES

FIRST YEAR

<table>
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<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
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<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>English 1</td>
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<td>Mathematics or Elective</td>
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<td>Electives</td>
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<tr>
<td>Electives</td>
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SECOND YEAR

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<th>Credits</th>
<th>Spring Quarter</th>
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<td>Chemistry or Physics</td>
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<td>Electives</td>
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<tr>
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THIRD YEAR

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<td></td>
<td></td>
</tr>
</tbody>
</table>

When a student decides to graduate under this curriculum with a major in anatomy, botany, or zoology, he should at once consult with the department concerned, a member of which will act as his advisor. The advisor will then plan a special curriculum for the student, fitting him for his chosen field of work, which curriculum must be submitted to the Dean of the College of Science for approval. Any change in the individual curriculum can only be made with the consent of the advisor and the dean.

C. CHEMISTRY

FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
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<td>Chemistry 2 or 22</td>
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<td>Chemistry 3 or 22</td>
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</tr>
<tr>
<td>Mathematics 4</td>
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<td>Mathematics 5</td>
<td>5</td>
<td>Mathematics 6</td>
<td>5</td>
</tr>
<tr>
<td>English 1</td>
<td>5</td>
<td>English 2 or Elective</td>
<td>5</td>
<td>Electives</td>
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<tr>
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<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
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<td>1½</td>
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SECOND YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
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<th>Credits</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
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<td>5</td>
<td>Physics 3 or 99</td>
<td>5</td>
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<td>Chemistry 101</td>
<td>5</td>
<td>Chemistry 112</td>
<td>5</td>
<td>Chemistry 113</td>
<td>5</td>
</tr>
<tr>
<td>Mathematics 61</td>
<td>3</td>
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<td>2</td>
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</tr>
<tr>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
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THIRD YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
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<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 131</td>
<td>5</td>
<td>Chemistry 132</td>
<td>5</td>
<td>Chemistry 133</td>
<td>5</td>
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<tr>
<td>Electives</td>
<td>5</td>
<td>Electives</td>
<td>5</td>
<td>Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

**Two and one-half years of mathematics required, which may be taken in high school or University.

*In addition to the subjects specifically listed above, 10 credits in either French or German are required, to be completed before the end of the third year.
## College of Science

### Group Options

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology 1</td>
<td>Mathematics 4</td>
<td>Mathematics 6</td>
</tr>
<tr>
<td>English 1</td>
<td>English 2 or Elective</td>
<td>Geology 2</td>
</tr>
<tr>
<td>Chemistry 1 or 21</td>
<td>Chemistry 2 or 22</td>
<td>Chemistry 3 or 28</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed. 1½</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics 1</td>
<td>Geology 21</td>
<td>Geology 117</td>
</tr>
<tr>
<td>Chemistry 111</td>
<td>Physics 2</td>
<td>Geology 120</td>
</tr>
<tr>
<td>Civil Engineering 1</td>
<td></td>
<td>Geology 122</td>
</tr>
<tr>
<td>Astronomy 11</td>
<td>Electives</td>
<td>Civil Engineering 4</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed. 1½</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botany or Zoology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geology 128</td>
<td>Geology 124</td>
<td>Geology 121</td>
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<tr>
<td>Geology 131</td>
<td>Geology 118</td>
<td>Geology 124</td>
</tr>
<tr>
<td>Electives</td>
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<td>Electives</td>
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</table>

### D. Geology

#### First Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
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</thead>
<tbody>
<tr>
<td>Geology 1</td>
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</tr>
<tr>
<td>English 1</td>
<td>English 2 or Elective</td>
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<tr>
<td>Chemistry 1 or 21</td>
<td>Chemistry 2 or 22</td>
<td>Chemistry 3 or 28</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed. 1½</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics 1</td>
<td>Geology 21</td>
<td>Geology 117</td>
</tr>
<tr>
<td>Chemistry 111</td>
<td>Physics 2</td>
<td>Geology 120</td>
</tr>
<tr>
<td>Civil Engineering 1</td>
<td></td>
<td>Geology 122</td>
</tr>
<tr>
<td>Astronomy 11</td>
<td>Electives</td>
<td>Civil Engineering 4</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed. 1½</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botany or Zoology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geology 128</td>
<td>Geology 124</td>
<td>Geology 121</td>
</tr>
<tr>
<td>Geology 131</td>
<td>Geology 118</td>
<td>Geology 124</td>
</tr>
<tr>
<td>Electives</td>
<td>Electives</td>
<td>Electives</td>
</tr>
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#### Second Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 1</td>
<td>Geology 21</td>
<td>Geology 117</td>
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<tr>
<td>Chemistry 111</td>
<td>Physics 2</td>
<td>Geology 120</td>
</tr>
<tr>
<td>Civil Engineering 1</td>
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<td>Geology 122</td>
</tr>
<tr>
<td>Astronomy 11</td>
<td>Electives</td>
<td>Civil Engineering 4</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed. 1½</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botany or Zoology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geology 128</td>
<td>Geology 124</td>
<td>Geology 121</td>
</tr>
<tr>
<td>Geology 131</td>
<td>Geology 118</td>
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</tr>
<tr>
<td>Electives</td>
<td>Electives</td>
<td>Electives</td>
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#### Third Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology 151</td>
<td>Geology 144</td>
<td>Geology 148</td>
</tr>
<tr>
<td>Electives</td>
<td>Electives</td>
<td>Electives</td>
</tr>
</tbody>
</table>

#### Fourth Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology 128</td>
<td>Geology 151</td>
<td>Geology 158</td>
</tr>
<tr>
<td>Mining 51</td>
<td>Geology 132</td>
<td>Geology 134</td>
</tr>
<tr>
<td>Thesis</td>
<td>Thesis</td>
<td>Thesis</td>
</tr>
<tr>
<td>Electives</td>
<td>Electives</td>
<td>Electives</td>
</tr>
</tbody>
</table>

1 Options: A—Mechanical Drawing, B—Geology or Mineralogy, C—Biology Science.

2 Students expecting to elect the industrial group in junior year will take Chemical Technology (Chem. 52) lectures only, 3 credits, during the sophomore year. These must be approved by the head of the department of chemistry or other registration officer appointed by the department of chemistry.
### E. MATHEMATICS

#### FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1</td>
<td>5</td>
<td>English 2 or Elective</td>
<td>5</td>
<td>History</td>
<td>5</td>
</tr>
<tr>
<td>Mathematics 4</td>
<td>5</td>
<td>Mathematics 5</td>
<td>5</td>
<td>Mathematics 6</td>
<td>5</td>
</tr>
<tr>
<td>&quot;Physics 1&quot;</td>
<td>5</td>
<td>&quot;Physics 2&quot;</td>
<td>5</td>
<td>Modern Foreign Lang.</td>
<td>5</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
</tr>
</tbody>
</table>

#### SECOND YEAR

| History       | 5 | Economics 1 | 5 | Political Science 1 | 5 |
| Mathematics 107 | 5 | Mathematics 108 | 5 | Mathematics 109 | 5 |
| Modern Foreign Lang. | 5 | Chemistry 1 | 5 | Chemistry 2 | 5 |
| Mil. Sci. or Phys. Ed. | 1½ | Mil. Sci. or Phys. Ed. | 1½ | Mil. Sci. or Phys. Ed. | 1½ |

#### THIRD YEAR

**GROUP I—SECONDARY SCHOOL TEACHERS**

| Psychology 1   | 5 | Philosophy or Logic | 5 | Astronomy 1 | 5 |
| Biological Science | 5 | Biological Science | 5 | Mathematics | 5 |
| Mathematics     | 3 or 3 | Mathematics | 2 or 3 | Education 101 | 5 |
| Electives       | 3 or 2 | Electives | 3 or 2 | Electives | 3 or 2 |

**GROUP II—COLLEGE AND UNIVERSITY TEACHERS**

| Psychology 1   | 5 | Philosophy or Logic | 5 | Astronomy 1 | 5 |
| Biological Science | 5 | Biological Science | 5 | Mathematics | 5 |
| Mathematics     | 2 | Mathematics | 2 | Mathematics | 2 |
| Mathematics     | 3 | Mathematics | 3 | Electives | 5 |

**GROUP III—STATISTICIANS AND ACTUARIES**

| Psychology 1   | 5 | Philosophy or Logic | 5 | Astronomy 1 | 5 |
| Biological Science | 5 | Biological Science | 5 | Mathematics | 5 |
| Mathematics     | 2 | Mathematics | 2 | Mathematics | 2 |
| Mathematics     | 3 | Mathematics | 3 | Electives | 5 |

#### FOURTH YEAR

**GROUP I—SECONDARY SCHOOL TEACHERS**

| Education 110 | 3 | Education 119 | 3 | Education | 3 |
| Electives     | 7 | Electives | 12 | Mathematics 127 | 5 |

**GROUP II—COLLEGE AND UNIVERSITY TEACHERS**

| Mathematics   | 5 | Mathematics | 5 | Mathematics | 5 |
| Electives     | 10 | Electives | 10 | Electives | 10 |

**GROUP III—STATISTICIANS AND ACTUARIES**

| Mathematics 151 | 3 | Mathematics 152 | 3 | Mathematics 153 | 3 |
| Political Science 60 | 5 | Business Ad. 147 | 5 | Electives | 7 |
| Electives       | 7 | Business Ad. 118 | 5 | Electives | 7 |

### F. PHYSICS

#### GROUP I—SECONDARY SCHOOL TEACHERS

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
<th>Second Year</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>15</td>
<td>Physics</td>
<td>15</td>
</tr>
<tr>
<td>&quot;Chemistry or Physics&quot;</td>
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<td>Mathematics</td>
<td>15</td>
</tr>
<tr>
<td>English 6 or Adv. Electives</td>
<td>10</td>
<td>Chemistry</td>
<td>10</td>
</tr>
<tr>
<td>Bot., Zool., Geol., or Astron.</td>
<td>10</td>
<td>Psychology</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Third Year

| Physics | 15 | Physics | 6 |
| Education | 6 | Education | 13 |
| Philosophy Group | 15 | Adv. Electives | 12 |
| Free Electives | 10 | Free Electives | 13 |

*Students in Group III take Bus. Ad. 11-13 in place of Physics.**

**Physics will be taken only when no high school physics is offered.
### COLLEGE OF SCIENCE

#### GROUP II—COLLEGE AND UNIVERSITY TEACHERS

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
<th>Second Year</th>
<th>Credits</th>
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<tr>
<td>Mathematics</td>
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<td>Physics</td>
<td>15</td>
</tr>
<tr>
<td>*Chemistry or Physics</td>
<td>15</td>
<td>Mathematics</td>
<td>15</td>
</tr>
<tr>
<td>English 5 or Adv. Electives</td>
<td>10</td>
<td>Chemistry</td>
<td>10</td>
</tr>
<tr>
<td>Bot., Zool., Geol., or Astron.</td>
<td>10</td>
<td>Psychology</td>
<td>5</td>
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<table>
<thead>
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<th>Fourth Year</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Physics</td>
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<td>Physics</td>
<td>15</td>
</tr>
<tr>
<td>Mathematics</td>
<td>10</td>
<td>Mathematics</td>
<td>9</td>
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<tr>
<td>Philosophy Group</td>
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<td>Adv. Electives</td>
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</tr>
<tr>
<td>Free Electives</td>
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<td>Free Electives</td>
<td>15</td>
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#### GROUP III—INDUSTRIAL PHYSICISTS

<table>
<thead>
<tr>
<th>First Year</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>Mathematics</td>
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<td>Physics</td>
<td>15</td>
</tr>
<tr>
<td>*Chemistry or Physics</td>
<td>15</td>
<td>Mathematics</td>
<td>15</td>
</tr>
<tr>
<td>English 5 or Adv. Electives</td>
<td>10</td>
<td>Chemistry</td>
<td>5</td>
</tr>
<tr>
<td>Bot., Zool., Geol., or Astron.</td>
<td>10</td>
<td>Psychology</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Credits</th>
<th>Fourth Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics</td>
<td>15</td>
<td>Physics</td>
<td>9</td>
</tr>
<tr>
<td>Philosophy Group</td>
<td>15</td>
<td>Chemistry</td>
<td>15</td>
</tr>
<tr>
<td>Chemistry</td>
<td>5</td>
<td>Adv. Electives</td>
<td>15</td>
</tr>
<tr>
<td>Adv. Electives</td>
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<tr>
<td>Free Electives</td>
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</table>

Advanced electives must be approved by the department.

#### G. CURRICULUM FOR PROSPECTIVE SCIENCE TEACHERS

Most of those science students who expect to teach must begin in a small high school. In such schools one teacher usually teaches several or all the sciences. It is therefore desirable that such students get a wide range of scientific knowledge, rather than the intensive training secured by three years' work for a major in some one department. The following course permits the students to prepare in more sciences by not requiring three years of any one science.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
<th>Second Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science (botany, geology, or zoology)</td>
<td>10</td>
<td>History</td>
<td>10</td>
</tr>
<tr>
<td>Science (physics or chemistry)</td>
<td>10</td>
<td>Economics, Pol. Sci., or Sociology</td>
<td>10</td>
</tr>
<tr>
<td>Mathematics</td>
<td>5</td>
<td>Science</td>
<td>20</td>
</tr>
<tr>
<td>English</td>
<td>0 to 10</td>
<td>Electives</td>
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<tr>
<td>Electives</td>
<td>10</td>
<td>Mil. Sci. or Phys. Ed.</td>
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</tr>
<tr>
<td>Mil. Sci. or Phys. Ed.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Credits</th>
<th>Fourth Year</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy and Psychology</td>
<td>10</td>
<td>Education</td>
<td>18</td>
</tr>
<tr>
<td>Science</td>
<td>20</td>
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<td>19</td>
</tr>
<tr>
<td>Electives</td>
<td>15</td>
<td>Electives</td>
<td>17</td>
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</tbody>
</table>

#### 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) If 20 credits of chemistry are taken, only 15 of geology are required.

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

*Physics will be taken only when no high school physics is offered.
H. 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 credits, together with the required credits in military science or physical education, 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 36 credits in the School of Law; making a total of 190 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.

I. FIVE-YEAR COURSE IN SCIENCE AND LIBRARY SCIENCE

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 science. Under this arrangement a student should first complete all the required work of the course for science teachers (outlined above), substituting courses in library science for 18 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 science. 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 science at the end of the fifth year. (See department of library science.)

III. PRESCRIBED CURRICULA IN VOCATIONAL SUBJECTS

A. PRE-MEDICAL CURRICULA

The University offers two curricula preparatory to the study of medicine. One of these is for two years, and will meet the requirements of those medical schools which require no more than two years of college work for admission to their professional study. The second is for four years, and prepares students for those medical schools that require for admission the completion of a full four-year college course. The curricula will not reduce the amount of work to be done by the student in the medical school but they are designed to increase its efficiency.

These courses are also well adapted for pre-dental students, as the best dental schools require the same foundation work as the medical schools.

Students entering the pre-medical courses should present the following among the 15 units required for entrance to the University (see Requirements for Admission, page 43):

- 2 units of English
- 1 unit of algebra
- 1 unit of plane geometry
- 1 unit of United States history and civics

Below is the outline of the four-year curriculum. The first and second years constitute the two-year curriculum:

**FIRST YEAR**

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 1 or 31</td>
<td>5</td>
<td>Chemistry 2 or 32</td>
<td>5</td>
<td>Chemistry 3 or 23</td>
<td>5</td>
</tr>
<tr>
<td>Zool. 8 (Pre-medical)</td>
<td>5</td>
<td>Zool. 4 (Pre-medical)</td>
<td>5</td>
<td>Zool. 5 (Pre-medical)</td>
<td>5</td>
</tr>
<tr>
<td>English</td>
<td>5</td>
<td>English</td>
<td>5</td>
<td>Psychology</td>
<td>5</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1%</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1%</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1%</td>
</tr>
</tbody>
</table>
Demonstration of Nursing 5
Anesthesia 5
Clinical Analysis 10
Medical Nursing 20
Surgical Nursing 20
Obstetrical and Gynecological Nursing 20

Diseases 5
Eye, Ear, Nose and Throat Nursing 5
Neurological Nursing 5
Children's Nursing 5
Infectious and Contagious Disease Nursing 5
Administration 5

CURRICULUM TO BE FOLLOWED IN A SELECTED HOSPITAL
Many fields of activity other than teaching are being offered to 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 in hospitals to gain practical experience. In clothing, students learn first to sew for themselves and then for customers.

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 three weeks.

The following grouping is arranged as a guide in selecting the work that will best satisfy the requirements of each individual:

**Group I, General**, 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 and sociology in this curriculum.

**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 students who wish to become dietitians in hospitals, sanitoria or private work. Those who intend to become sanitary and food inspectors are also advised to take the course.

**Group III, Teachers' Curriculum.** This group combines home economics and liberal arts subjects, chemistry, physics, bacteriology, fine arts, physiology and economics. Courses are arranged to meet the particular needs of home economics students. Practice teaching extending through one quarter in the Seattle schools is required. Graduates of this course will upon application to the State Board of Vocational Education receive a Smith-Hughes certificate.

**Group IV, Institutional Management.** This course combines 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.

**Group V, Textiles, Clothing and Fine Arts.** This curriculum requires a minimum of science but gives ample opportunity for combining work in design with clothing and textiles for the purpose of general culture or for use in a commercial field.

A teaching major in home economics consists of: H.E. 4, 5, 6, 8, 25, 107, 108, 112, 113, 143, 144, 145, 146, 147—with their prerequisites.

Any one of the five lines may lead to the degree of bachelor of science in home economics. 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 + 10 credits are required for graduation from any of these curricula. For students who complete H.E. 5-6 or H.E. 105-106, 182 + 8 credits are required.

"Preferred elective" means that these requirements must be satisfied before any other course is taken.
To provide a liberal college training, also for those students who wish to fit themselves for the following vocations:

1. Homemaking.
2. Social Service. (Elect economics and sociology.)

<table>
<thead>
<tr>
<th>First Year</th>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<tr>
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<td>English 2</td>
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Preferred electives—H.E. 4, 8, 25, 48; Nursing 5.

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Preferred electives—H.E. 5, 6; P.S.D. 5; Bact. 101.

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<th>Winter Quarter</th>
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<th>Spring Quarter</th>
<th>Credits</th>
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<td>Sociology 1</td>
<td>5</td>
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Preferred electives—H.E. 105-106, 112, 113; Physics 89-90.

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Preferred electives—H.E. 144-145, 146, 148, 149; Arch. 1-2.

GROUP II—FOOD AND NUTRITION

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<td>Physiology 7</td>
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<td>Phys. Ed. 1</td>
<td>1%</td>
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Preferred electives—H.E. 4, 8, 25; P.S.D. 5.

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<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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<td>Lang., Lit., or Hist. 5</td>
<td>Bacteriology 101</td>
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<td>Bacteriology 102</td>
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Preferred electives—H.E. 6-6.

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<td>Sociology 5</td>
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Preferred electives—H.E. 107-108; Nursing 5; Physics 89-90.

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Preferred electives—H.E. 108, 148, 149, 190, 191 and related sciences.

GROUP III—SMITH-HUGHES TEACHER TRAINING

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<th>Autumn Quarter</th>
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<td>Phys. Ed. 1</td>
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<td>Phys. Ed. 1</td>
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Preferred electives—H.E. 4, 8, 25; P.S.D. 5.

If H.E. 4 and 8 are carried in high school, substitute H.E. 43 and Nursing 5.
**UNIVERSITY OF WASHINGTON**

**SECOND YEAR**

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
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<th>Credit</th>
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<th>Credit</th>
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<td>Education 101</td>
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<td>Education 110</td>
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<td>Economics 1</td>
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<td>Education 119</td>
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<td></td>
<td></td>
<td>Sociology 1</td>
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<tr>
<td>Physics 90</td>
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<td>Physics 90</td>
<td>5</td>
<td>Home Economics 107-108</td>
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<tr>
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<td>Home Economics 113</td>
<td>5</td>
<td>Home Economics 143</td>
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</tr>
<tr>
<td>Home Economics 148</td>
<td>2</td>
<td>Home Economics 144</td>
<td>3</td>
<td>Home Economics 145</td>
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**GROUP IV—INSTITUTIONAL MANAGEMENT**

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

1. Dietitians.
3. Managers of tearooms, lunchrooms, cafeterias.
4. Food service in state, municipal, or charitable institutions.

**FIRST YEAR**

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
<td>English 1</td>
<td>5</td>
<td>English 2</td>
<td>5</td>
<td>Chemistry 6</td>
<td>5</td>
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<tr>
<td>Physiology 7</td>
<td>5</td>
<td>Chemistry 5</td>
<td>5</td>
<td>Lang., Lit. or Hist.</td>
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<td>Phys. Ed.</td>
<td>1½</td>
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<td>Phys. Ed.</td>
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<tr>
<td>Preferred electives—H.E. 4. 25; P.S.D. 3; Law 54.</td>
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**SECOND YEAR**

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<td>Lang., Lit. or Hist.</td>
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<td>Lang., Lit. or Hist.</td>
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<td>Phys. Ed.</td>
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<td>1</td>
<td>Psychology 1</td>
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<tr>
<td>Preferred electives—H.E. 5-6; Bact. 101.</td>
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**THIRD YEAR**

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<th>Credits</th>
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<tbody>
<tr>
<td>Economics 1</td>
<td>5</td>
<td>Sociology 1</td>
<td>3</td>
<td>Socioculture 1</td>
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**FOURTH YEAR**

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<tbody>
<tr>
<td>Preferred electives—H.E. 121, 122, 123, 125, 144, 145, 153, 189, 190; B.A. 11; Arch. 1-2.</td>
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**GROUP V—TEXTILES, CLOTHING AND FINE ARTS**

**SUMMARY**

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<th>Credits</th>
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<td>College requirements</td>
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<tr>
<td>Fine Arts</td>
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<tr>
<td>Home Economics</td>
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**SUGGESTED SCHEDULE**

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<th>Home Economics</th>
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<td>P.S. &amp; D. 8-10-11</td>
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<td>P.S. &amp; D. 169-170</td>
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<td>Laboratory Science</td>
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<td>Arch. 1-2</td>
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<td>H.E. 27, Non-textiles</td>
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## College Requirements - Credit - Fine Arta - Credit

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<th>Course</th>
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<td>H. E. 145 Home Furnish.</td>
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| Total                   | 64      | Total                  | 51      | Physical Education      | 10      |

### D. PHYSICAL EDUCATION FOR WOMEN

#### FIRST YEAR

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<th>Spring Quarter</th>
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<td>5</td>
<td>Lang., Lit., History or Electives</td>
<td>5</td>
<td>English</td>
<td>5</td>
</tr>
<tr>
<td>Lang., Lit., Hist. or Electives</td>
<td>5</td>
<td>Chemistry 5</td>
<td>5</td>
<td>Electives</td>
<td>5</td>
</tr>
<tr>
<td>Zoology 1</td>
<td>5</td>
<td>Zoology 2</td>
<td>5</td>
<td>Chemistry 6</td>
<td>5</td>
</tr>
<tr>
<td>Phys. Ed.</td>
<td>1%</td>
<td>Phys. Ed.</td>
<td>1%</td>
<td>Phys. Ed.</td>
<td>1%</td>
</tr>
<tr>
<td>Physiology 54</td>
<td>5</td>
<td>Physiology 55</td>
<td>5</td>
<td>Sociology 1</td>
<td>5</td>
</tr>
<tr>
<td>Lang., Lit., Hist. or Elective</td>
<td>5</td>
<td>Education 101</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zoology 1</td>
<td>5</td>
<td>Anatomy 102</td>
<td>3</td>
<td>Anatomy 103</td>
<td>3</td>
</tr>
<tr>
<td>Phys. Ed.</td>
<td>1%</td>
<td>Phys. Ed.</td>
<td>1%</td>
<td>Phys. Ed.</td>
<td>1%</td>
</tr>
<tr>
<td>Preferred Electives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education 111</td>
<td>3</td>
<td>Physical Education 112</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education 113</td>
<td>3</td>
<td>Physical Education 114</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics 89</td>
<td>5</td>
<td>Phys. Ed.</td>
<td>5</td>
<td>Education 110</td>
<td>5</td>
</tr>
<tr>
<td>Preferred Electives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### SECOND YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education 145</td>
<td>3</td>
<td>Education 145</td>
<td>2</td>
<td>Electives</td>
<td>7</td>
</tr>
<tr>
<td>Education 119</td>
<td>3</td>
<td>Educations</td>
<td>7</td>
<td></td>
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</tr>
<tr>
<td>Education 160B</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferred Electives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phys. Ed. 154</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phys. Ed. 170</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Education 69 credits</td>
<td>Electives</td>
<td>52 credits</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If chemistry and physics have been taken in high school, Chemistry 5 and 6 and Physics 89 and 90 may be eliminated.

Of the preferred electives in physical education, the minimum is 64 and the maximum 64 credits.

A student may also use physical education as a major, following the prescriptions outlined under Group I (curricula with major in one department).

### COURSES

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index.)

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**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.
SCHOOL OF EDUCATION

THE FACULTY

HENRY SUZIALLO, Ph.D. (Columbia), LL.D. (California) .................. President

JOHN THOMAS CONDON, LL.M. (Northwestern) .................. Dean of Faculties

FREDERICK ELMSER BOLTON, Ph.D. (Clark) .................. Professor of Education; Dean

FRED CARLETON ATIS, Ph.D. (Chicago) .................. Professor of Education

EDWARD D. RANDOLPH, A.M. (Columbia) .................. Professor of Education

CURTIS TALMADGE WILLIAMS, Ph.D. (Clark) .................. Assistant Professor of Education

PAUL WASHINGTON TIRET, Ph.D. (Chicago) .................. Assistant Professor of Education

HARLAN CAMERON HINES, Ph.D. (Iowa) .................. Assistant Professor of Education

ALEXANDER CRIFFEN ROBERTS, A.M. (Washington) .................. Associate in Education

CINOTH LEONARD HUGHES, B.Ed. (Washington) .................. Teaching Fellow in Education

HENRY LANDERS, A.M. (Harvard) .................. Professor of Geology; Dean of the College of Science

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

CAROLINE HAVEN OBER, .................. Professor of Spanish

TENYOR KINGAID, A.M. (Washington) .................. Professor of Zoology

FREDERICK MORGAN PAVILFORD, Ph.D. (Yale) .................. Professor of English; Dean of the Graduate School

FREDERICK ARTHUR OSBORN, Ph.D. (Michigan) .................. Professor of Physics; Director of the Physics Laboratories

DAVID THOMSON, B.A. (Toronto) .................. Professor of Latin; Dean of the College of Liberal Arts

PURSE JOSEPH FEHN, Ph.D. (Johns Hopkins) .................. Professor of Romance Languages

THEODORE CHRISTIAN FISHE, Ph.D. (Chicago) .................. Professor of Botany

ROBERT EDOUARD MÖRTZ, Ph.N.D. (Strassburg) .................. Professor of Mathematics

IRVING MACKY GLAIN, A.M. (Oregon) .................. Professor of Music; Dean of the College of Fine Arts

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

ENRIQUE ISABEL RAIFF, A.M. (Columbia) .................. Professor of Home Economics

WILLIAM FRIEDRICH GORSUCH, A.B. (Knox) .................. Professor of Public Speaking and Debate

STEVINSON SMITH, Ph.D. (Pennsylvania) .................. Professor of Psychology

STEPHEN IVAN MILLER, Jr., A.B. (Stanford), LL.B. (Michigan) .................. Professor of Economics; Dean of the College of Business Administration

HOWARD WOOLSTON, Ph.D. (Columbia) .................. Professor of Sociology

EDWARD McMAHON, A.M. (Wisconsin) .................. Associate Professor of American History

ROBERT MAX GARBERT, Ph.D. (Munich) .................. Associate Professor of English

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

ERASMUS OTTO ECKELMAN, Ph.D. (Heidelberg) .................. Assistant Professor of German

FRANCES DIKETY, A.M. (Columbia) .................. Assistant Professor of Music

MART EMMY GROSS, A.M. (Columbia) .................. Director of Physical Education for Women
The College of Education has been changed into a School of Education, the reorganization to go into effect at the beginning of the autumn quarter, 1922. The School will be based upon two years of college or normal school work. Only one course in education, Introduction to Education, will be allowed in the sophomore year. The degree awarded will be bachelor of arts in education or bachelor of science in education according to the character of the academic work chosen.

The work in the School will be strictly professional and will seek to afford special training and technique for the various types of teachers and educational specialists. Emphasis will be placed upon graduate work. A probationary teaching certificate, the five year normal diploma, will be granted for a minimum amount of professional study but all wishing to secure the life diploma will be required to spend at least one quarter in residence after graduation and complete a total of 35 credits (including the undergraduate work) in education.

Scope and Aims.—The curriculum of the School of Education assumes that teachers should have a broad and liberal education, supplemented by professional training 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 that they should be masters of some special subject which they expect to teach.

The School 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, 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 thoroughly 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.

Special Teachers' Courses.—Many of the academic departments have teachers' courses for the purpose of studying the problems of teaching their 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 methods as based upon the laws of learning and teaching are developed in the department 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.

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 quarter. A good curriculum may be secured during the regular academic year by selecting from the courses in engineering, fine arts, and education. Because of the excellent 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 pre-vocational classes are maintained in various parts of the city.

Athletics and Playground Activities.—There is at the present time, a strong demand for teachers, both men and women, who can direct the various forms of athletics and playground activities in the high school and the grammar grades.

Public School Music.—Not only is there a demand for specially trained supervisors of music in the schools, but every school needs teachers who can give some assistance in the general musical activities of the school and the community. Every teacher who has any musical ability ought to secure some training in music and participate in some of the musical organizations of the University.

Debating, Dramatics, Public Speaking.—Every teacher will be called upon to assist in the incidental work of the school. The small towns cannot 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 surveys as far as time will permit.

**Saturday and Evening Classes.**—To accommodate the teachers of Seattle and vicinity several classes in education are scheduled on Saturday and during the late afternoon and evening.

**Vocational Secretary.**—The University maintains a vocational secretary for the purpose of assisting students to secure desirable positions. The services of this officer are entirely free to students and graduates of the University and to employers.

**Honorary Educational Societies.**—Active chapters of Phi Delta Kappa, men's national honorary educational fraternity, and Pi Lambda Theta, women's national honorary educational sorority have been established for several years. Each has a large and vigorous membership. A men's education club has also recently been organized.

**RULES AND REGULATIONS**

**FACULTY OF THE SCHOOL OF EDUCATION**

**MEMBERSHIP**

1. The faculty of the School of Education shall consist of:
   (a) All instructors in the Department of Education.
   (b) All instructors giving teachers' courses in academic subjects.
   (c) All heads of departments that give subject matter courses represented in the high schools.

   **NOTE**—All special teachers' courses shall be listed and numbered as education courses.

**POWERS AND DUTIES OF THE FACULTY**

The faculty of the School of Education shall have the following powers and duties:

1. To make and execute such rules and regulations as may be necessary for the government of the School of Education and to exercise such other powers and duties as are common to other schools and colleges of the University.

**ADMISSION**

The admission requirements shall be:

(a) Completion of 90 quarter hours of college credit earned in the University of Washington or in an accredited institution of equal rank. The disposition of these 90 hours shall be determined by mutual agreement of the faculty of the School of Education and the faculty of the particular college concerned, and shall be administered by the dean of the college in accord-
UNIVERSITY OF WASHINGTON

ance therewith. In addition there must be completed the usual undergraduate requirements in physical training or military drill. Sophomores who have earned 65 quarter hours of credit may enroll in course 101, Introduction to Education.

(b) Graduation from a two year advanced course in an accredited normal school, under conditions outlined on page 47 will fulfill the admission requirements.

(c) Claims for advanced university credit based on excess normal school credits will be passed on by a committee consisting of the registrar, the dean of the School of Education, and the heads of the departments concerned.

GRADUATION

For graduation from the School of Education with the degree of bachelor of arts in education or bachelor of science in education there shall be completed 90 quarter hours of credit beyond requirements for entrance to the school, at least 48 of which shall be in upper division subjects. In the total of 180 quarter hours of academic credit required before graduation from the School of Education there must be included the following:

<table>
<thead>
<tr>
<th>Credit</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Major</td>
<td>35</td>
</tr>
<tr>
<td>Academic Minor</td>
<td>20</td>
</tr>
<tr>
<td>Education, including 2 hours special teachers' course</td>
<td>25</td>
</tr>
</tbody>
</table>

The education courses required for the degree of bachelor of arts in education, or bachelor of science in education shall include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Study of Education</td>
<td>5</td>
</tr>
<tr>
<td>Psychology of Teaching Methods</td>
<td>5</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>Teachers' Course in Special Subjects</td>
<td>2</td>
</tr>
<tr>
<td>Practice Teaching</td>
<td>5</td>
</tr>
<tr>
<td>Educational Measurements</td>
<td>3</td>
</tr>
<tr>
<td>Educational Electives</td>
<td>2</td>
</tr>
</tbody>
</table>

Total                                    25 credits

1. An academic major consists of 35 credits in some subject other than education.

2. An academic minor consists of 20 credits in some subject other than education.

3. The academic major and minor may be selected from any subjects now recognized in the Colleges of Liberal Arts, Science, Fine Arts, or Business Administration, or such others as may be approved by the Faculty of the School of Education. Students may minor (but not major) in journalism. Students may major but not minor in physical education for women.

4. Part of the preparation in the academic major and minor should be completed before entrance to the School of Education.

5. No courses in education may be taken before the junior year, except that sophomores who have earned 65 quarter hours of credit may enroll in course 101, Introduction to Education.
6. Normal school graduates who are candidates for the bachelor's degree from the School of Education shall be required to take the following courses in education:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject</td>
<td>2</td>
</tr>
<tr>
<td>Educational Measurements</td>
<td>3</td>
</tr>
<tr>
<td>Social Surveys of Education</td>
<td>2</td>
</tr>
<tr>
<td>Electives in Education</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15</td>
</tr>
</tbody>
</table>

7. Experienced teachers who are candidates for the bachelor's degree from the School of Education shall be required to take the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Education</td>
<td>5</td>
</tr>
<tr>
<td>Psychology of Teaching Methods</td>
<td>5</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject</td>
<td>2</td>
</tr>
<tr>
<td>Educational Measurements</td>
<td>3</td>
</tr>
<tr>
<td>Social Surveys of Education</td>
<td>2</td>
</tr>
<tr>
<td>Electives in Education</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>25</td>
</tr>
</tbody>
</table>

8. Students in other colleges or schools of the University may elect courses in education according to conditions fixed by those colleges and not inconsistent with the regulations of the School of Education.

9. Students are allowed to combine, in preparation for teaching, courses from the departments of political science, sociology and economics, for the academic major or the academic minor. Such combinations must be approved by the Dean of the School of Education and the head of the department in which the academic major or minor is selected.

10. Courses in manual and industrial arts, or in those combined with drawing, will be accepted as an academic minor toward graduation from the School of Education.

NEW REQUIREMENTS FOR NORMAL AND LIFE DIPLOMAS

1. The University is authorized by law to issue diplomas valid in the State of Washington as teachers' certificates to teach in any high school or to superintend or supervise in any public school of the state, as described below:

2. The University Five-Year Normal Diploma, valid for a period of five calendar years from date of issue, is granted on the following conditions:

3. (a) Graduation from the University, (b) evidence of good health, such general scholarship and personal and moral qualities as give promise of success and credit in the teaching profession. Active professional interest in teaching is an important factor. The faculty of the School of Education may refuse to recommend candidates for the normal diplomas who fail to measure up to the foregoing standards. (c) Completion of the following courses in education:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Study of Education</td>
<td>5</td>
</tr>
<tr>
<td>Psychology of Teaching Methods</td>
<td>5</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject</td>
<td>2</td>
</tr>
<tr>
<td>Practice Teaching</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20</td>
</tr>
</tbody>
</table>
4. **Graduates from the University of Washington with no credits in education who desire the five-year normal diploma shall be required to complete the following courses in education:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology of Teaching Methods</td>
<td>5</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject</td>
<td>2</td>
</tr>
<tr>
<td>Educational Measurements</td>
<td>3</td>
</tr>
<tr>
<td>Social Surveys of Education</td>
<td>2</td>
</tr>
<tr>
<td>Practice Teaching</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

5. **Graduates from other colleges who desire the five-year normal diploma shall be required to be in residence one academic year and to complete the following courses in education:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology of Teaching Methods</td>
<td>5</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>Special Teachers' Course</td>
<td>2</td>
</tr>
<tr>
<td>Educational Measurements</td>
<td>3</td>
</tr>
<tr>
<td>Social Surveys of Education</td>
<td>2</td>
</tr>
<tr>
<td>Practice Teaching</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

They shall also be required to complete **10 credits in some teaching subject approved by the head of the department in which the academic major work is chosen.**

6. The teachers' course in the academic major is required, if offered.

7. **Graduates of the two-year course of state normal schools who subsequently graduate from this University and who become candidates for the University five-year-normal diplomas must earn in this University at least 15 credits in education as follows:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Education</td>
<td>3</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject</td>
<td>2</td>
</tr>
<tr>
<td>Educational Measurements</td>
<td>3</td>
</tr>
<tr>
<td>Social Surveys of Education</td>
<td>2</td>
</tr>
<tr>
<td>Electives in Education</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

8. Normal School graduates must qualify for the University normal diploma or life diploma to be eligible to teach in high schools. The diplomas from the normal schools qualify the holders for elementary schools only.

9. Persons who have received the master's or doctor's degrees from this University are eligible to the University five-year normal diploma provided they have fulfilled the specific normal diploma requirements.

10. The University life diploma will be granted to candidates who fulfill the requirements for the University five-year normal diploma and who have completed:

   (a) At least one quarter of residence study subsequent to receiving the five-year diploma.

   (b) A minimum of 35 quarter hours in education, which may include a maximum of 5 hours in teachers' courses in special subjects.
SCHOOL OF EDUCATION

(e) A minimum of 5 additional quarter hours in an academic subject which will normally be the academic major or minor.

(d) Who also furnish satisfactory evidence of having taught successfully for at least, twenty-four months.

11. The life diploma will not be granted until candidates have taught at least one school year subsequent to receiving the normal diploma even though they have had twenty-four months of teaching experience.

12. No person shall be eligible to receive the degree, the normal diploma or the life diploma who has not been in residence at this University at least three quarters.

13. The use of education as the only recommended teaching subject (or major subject), is (for normal diploma) limited to cases of men and women in administrative positions whose undergraduate work shows a fair degree of preparation in two or more high school subjects. In all other cases, each candidate for the five-year normal diploma or life diploma must be recommended by at least one department besides education.

MINIMUM REQUIREMENTS IN EDUCATION FOR STUDENTS FROM OTHER COLLEGES OF THE UNIVERSITY

For Five-Year Normal

<table>
<thead>
<tr>
<th>Regular Students from Other Colleges of the University</th>
<th>Graduates from University of Washington with no Undergraduate Credits in Education</th>
<th>Graduates from Other Accredited Colleges with no Undergraduate Credits in Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to the Study of Education 10</td>
<td>Psychology of Teaching Method 5</td>
<td>Psychology of Teaching Method 5</td>
</tr>
<tr>
<td>Psychology of Teaching Method 10</td>
<td>Secondary Education 3</td>
<td>Secondary Education 3</td>
</tr>
<tr>
<td>Secondary Education 3</td>
<td>Teachers' Course in Special Subject 2</td>
<td>Teachers' Course in Special Subject 2</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject 2</td>
<td>Practice Teaching 10</td>
<td>Practice Teaching 10</td>
</tr>
<tr>
<td>Practice Teaching 10</td>
<td>Educational Measurements 3</td>
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</tr>
<tr>
<td>Educational Measurements 3</td>
<td>Social Surveys 2</td>
<td>Social Surveys 2</td>
</tr>
<tr>
<td>Elective in Education 15</td>
<td></td>
<td>Academic Subjects 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Free Electives 15</td>
</tr>
</tbody>
</table>

*Quarter Hours

*Credits

MINIMUM FOR DEGREE OF BACHELOR OF ARTS IN EDUCATION, OR BACHELOR OF SCIENCE IN EDUCATION, AND FIVE-YEAR NORMAL DIPLOMA

For High School Teachers

<table>
<thead>
<tr>
<th>Regular Students at University of Washington</th>
<th>Normal School Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to the Study of Education 5</td>
<td>Secondary Education 3</td>
</tr>
<tr>
<td>Psychology of Teaching Method 5</td>
<td>Teachers' Course in Special Subject 2</td>
</tr>
<tr>
<td>Secondary Education 3</td>
<td>Educational Measurements 3</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject 2</td>
<td>Social Surveys 2</td>
</tr>
<tr>
<td>Practice Teaching 6</td>
<td>Elective in Education 5</td>
</tr>
<tr>
<td>Educational Measurements 3</td>
<td></td>
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<tr>
<td>Electives in Education 2</td>
<td>15</td>
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</tr>
<tr>
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</table>

MINIMUM REQUIREMENTS IN EDUCATION FOR STUDENTS FROM OTHER COLLEGES
### REQUIREMENTS

#### Teachers' Course

<table>
<thead>
<tr>
<th>Course</th>
<th>Village Superintendent</th>
<th>City Superintendent</th>
</tr>
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<tbody>
<tr>
<td><em>Credits</em></td>
<td><em>Credits</em></td>
<td><em>Credits</em></td>
</tr>
<tr>
<td>Psych. of Teaching Method</td>
<td>Secondary Education</td>
<td>Secondary Education</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>Secondary Education</td>
<td>Secondary Education</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject</td>
<td>Teachers' Course in Special Subject</td>
<td>Teachers' Course in Special Subject</td>
</tr>
<tr>
<td>Practice Teaching</td>
<td>Practice Teaching</td>
<td>Practice Teaching</td>
</tr>
<tr>
<td>Electives in Education</td>
<td>Electives in Education</td>
<td>Electives in Education</td>
</tr>
<tr>
<td><em>Quarter Hours</em></td>
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</table>

### ADDITIONAL REQUIREMENTS IN EDUCATION FOR MASTER'S DEGREE

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Junior High School</th>
<th>Educational Sociology</th>
<th>Psych. of Elementary School Subjects</th>
<th>Educational Administration</th>
<th>Electives</th>
<th>Thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Organization</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>2</td>
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</tr>
<tr>
<td>Psych. of High School Subjects</td>
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<td>3</td>
<td>3</td>
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<td>6</td>
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<td>Educational Administration</td>
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<td>6</td>
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### REQUIREMENTS IN EDUCATION FOR CANDIDATES FOR SPECIAL POSITIONS AND FOR DEGREE OF DOCTOR OF PHILOSOPHY

<table>
<thead>
<tr>
<th>Requirement</th>
<th>College Instructors in Education</th>
<th>Normal School Instructors in Education</th>
<th>Directors of Educational Research</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Credits</em></td>
<td><em>Credits</em></td>
<td><em>Credits</em></td>
<td></td>
</tr>
<tr>
<td>Introduction to the Study of Education</td>
<td>5</td>
<td>5</td>
<td>Introduction to the Study of Education</td>
</tr>
<tr>
<td>Psych. of Teaching Method</td>
<td>5</td>
<td>5</td>
<td>Psych. of Teaching Method</td>
</tr>
<tr>
<td>Secondary Education</td>
<td>3</td>
<td>3</td>
<td>Secondary Education</td>
</tr>
<tr>
<td>Teachers' Course in Special Subject</td>
<td>2</td>
<td>2</td>
<td>Teachers' Course in Special Subject</td>
</tr>
<tr>
<td>Practice Teaching</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Educ. Measurements</td>
<td>2</td>
<td>2</td>
<td>Educ. Measurements</td>
</tr>
<tr>
<td>Elect. 60 hours from the following: (thesis required)</td>
<td>25</td>
<td>25</td>
<td>Elect. 60 hours from the following: (thesis required)</td>
</tr>
<tr>
<td>Educational Sociology</td>
<td>3</td>
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</tr>
<tr>
<td>Educational Administration</td>
<td>6</td>
<td>6</td>
<td>Educational Administration</td>
</tr>
<tr>
<td>Individual Mental Testing</td>
<td>6</td>
<td>6</td>
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<tr>
<td>Psychology of Elementary School Subjects</td>
<td>3</td>
<td>3</td>
<td>Psychology of Elementary School Subjects</td>
</tr>
<tr>
<td>Psychology of High School Subject</td>
<td>3</td>
<td>3</td>
<td>Psychology of High School Subjects</td>
</tr>
<tr>
<td>Junior High School</td>
<td>2</td>
<td>2</td>
<td>Junior High School</td>
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<tr>
<td>Child Study or Adolescence</td>
<td>5</td>
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<td>Group Intelligence</td>
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<td>Experimental Education</td>
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<tr>
<td>History of Education</td>
<td>5</td>
<td>5</td>
<td>History of Education</td>
</tr>
<tr>
<td><em>Quarter Hours</em></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### REQUIREMENTS FOR ACADEMIC MAJORS AND MINORS AND DEPARTMENTAL RECOMMENDATIONS FOR THE NORMAL AND LIFE DIPLOMAS

"An academic major consists of 35 credits in some subjects other than education."

"An academic minor consists of from 20 credits in some subject other than education."

In a few cases more than the minimum number of credits are required by a department because the first courses listed are in reality high school courses. If students have high school credits in these subjects the minimum of 35 college credits will suffice.

Below are listed the courses specified by the various departments for the academic majors and minors in the School of Education. Those who expect major or minor recommendations by the academic departments for teaching or on the normal or life diplomas, as required by the State Board of Education, should comply with the requirements made by the various departments. However, the academic major or minor graduation requirements will be fulfilled with the minimum of 35 or 20 credits respectively. For descriptions of the courses see the respective department statements.

#### ASTRONOMY

**Academic Minor** (major not offered): Courses 1, 2, 112, 123, 131. It is recommended that students who wish to combine astronomy with mathematics or physics add course 172.

#### BACTERIOLOGY

**Academic Major**: Courses 101, 102, 103, 104, 106, and 9 hours selected from 210-211-212, 213-214-215; total 36 credits.

**Academic Minor**: Course 101, 102, 103, and from numbers above 200 enough to total 20 credits.

#### BOTANY

**Academic Major**: Minimum 35 credits, including courses 105, 106, 107, and 140, 141, 142, or 143, 144, 145.

**Academic Minor**: Minimum 20 credits of which at least 15 credits should be in courses above 100. For a minor recommendation to teach botany at least 25 credits.

Major students in botany should take at least a year of chemistry.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar, Vocat'nal Guidance</td>
<td>6</td>
</tr>
<tr>
<td>Seminar, School Survey</td>
<td>6</td>
</tr>
<tr>
<td>Seminar, Educational Measurements</td>
<td>6</td>
</tr>
<tr>
<td>Philosophy of Education</td>
<td>6</td>
</tr>
<tr>
<td>Seminar, Educational Sociology</td>
<td>6</td>
</tr>
<tr>
<td>Seminar, Comparative Education</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
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</tr>
<tr>
<td>Thesis</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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*Quarter Hours*

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
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<td>6</td>
</tr>
<tr>
<td>Philosophy of Education</td>
<td>6</td>
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<tr>
<td>Seminar, Educational Sociology</td>
<td>6</td>
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<tr>
<td>Seminar, Comparative Education</td>
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</tr>
<tr>
<td>Electives</td>
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<td>Thesis</td>
<td>30</td>
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<tr>
<td><strong>Total</strong></td>
<td>120</td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar, Vocat'nal Guidance</td>
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<td>6</td>
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<tr>
<td>Philosophy of Education</td>
<td>6</td>
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<tr>
<td>Seminar, Educational Sociology</td>
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<tr>
<td>Seminar, Comparative Education</td>
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</tr>
<tr>
<td>Electives</td>
<td>8</td>
</tr>
<tr>
<td>Thesis</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
</tr>
</tbody>
</table>
Academic Major: Courses 21-22-23, 101, 111, 131-132; minimum 35 credits.

Academic Minor: Courses 21-22-23, 101, 111, or (131-132); or course 5-6, 135-136; minimum 20 credits. To be recommended to teach the subject the student must add 23 or 101; total 25 credits.

For the minor, students should have had at least high school physics; for the major they should have a year of college physics. Grades must average at least C to secure a recommendation for teaching chemistry.

Civics

Academic Major, combining Political Science, Sociology and Economics: Political Science, Sociology, Economics 1, and one of the following groups: Political Science, 60, 100, Political Science, electives; Sociology 29, 51, 55, 56, 60; Economics 57, 61, 105, 160; minimum 35 credits.

Academic Minor: Political Science 1, Economics 1, Sociology 1, and 5 (for teaching recommendation 10) additional from one of the three subjects; minimum 20 credits.

Classical Languages and Literature


Academic Minor in Latin: Latin 21, 22, 23, two of 50, 60, 70; 107. Total 24-28 credits.

Academic Major in Greek: Greek 1, 2, 3, 4, 5, 101-102-103; Latin 10 credits. Total 37 credits.

Academic Minor in Greek: Greek 1, 2, 3, 4, 5. Total 21 credits.

Commercial Teaching

See Economics and Business Administration.

Dramatic Art


Academic Minor: Courses 1-2-3, 21-22-23, 101-102-103; total 30 credits.

Drawing

Academic Major: Courses 5-6-7, 9-10-11, 16-17-18, 101, 153; and either 53-54-55, or 103-104 or 105-106; total 36 to 42 credits.

Academic Minor: Courses 5-6-7, 9-10-11, 16-17-18, 101, 153; total 30 credits.

Economics and Business Administration

Academic Major: Courses 1, 57, 61, 105, 160; electives to total minimum of 35 credits.

Academic Minor: Courses 1, 57, 61; electives to total minimum of 20 credits.

See also Civics for combinations with Political Science and Sociology.
COMMERICAL TEACHING

**Academic Major:** Courses 11, 12, 54, 55; minimum 35 credits. If more are elected 101-102 is recommended.

**Academic Minor:** Courses 11, 12, 64, 65; minimum 20 credits. Shorthand and typewriting are almost absolutely necessary for commercial teaching in high school and should be taken although no college credit is given.

**ENGLISH**

**Academic Major:** Freshman composition, teachers' course 188-189, senior conference 191-192-193, electives to total 35 credits, exclusive of freshman composition.

**Academic Minor:** 20 credits exclusive of freshman composition. For either a major or a minor it is desirable to divide the time between the extensive courses which give broad surveys and the intensive courses which deal critically with limited periods or movements.

**FINE ARTS**

(See Drawing and Music.)

**GEOLOGY**

**Academic Major:** Courses 1 or 12, 10, 11, 21, 31, 116, 120; minimum 36 credits.

**Academic Minor:** Courses 1 or 12, 2, 21; minimum 20 credits.

**GERMANIC LANGUAGES AND LITERATURE**

**Academic Major:** Minimum 35 credits, including Education 160 G. course 160-161-162.

**Academic Minor:** Minimum 20 credits. Major Recommendation for teaching, at least 27 credits in courses above 100, including Education 160 G.

**HISTORY**

**Academic Major:** Minimum 35 credits, including course 1-2. Electives on advice of the head of the department.

**Academic Minor:** Minimum 20 credits, including 1-2, or 5-6, or 57-58. Electives on advice of the head of the department.

**HOME ECONOMICS**

**Academic Major:** Courses 4, 5-6, 7, 8, 25, 107-108, 112-113, 143, 144-145, 148; total 56 credits.

**Academic Major in Food and Nutrition:** Courses 4, 5-6, 7, 43 or 144, 107-108, 145, 148; total 39 credits.

**Academic Minor in Food and Nutrition:** Courses 5-6, 7, 107-108, 145; total 28 credits.

**Academic Minor in Textiles and Clothing:** Courses 7, 8, 25, 112-113, 143, total 28 credits.

**Academic Major in Textiles and Clothing:** In addition to the minor 148, and at least 8 credits from 130, 133, 135; total 36 credits.
Academic Minor: Courses 51, 75, 101, 120, 150; total 25 credits.

Academic Major in Journalism not offered in the School of Education.

MATHEMATICS

Academic Major: Minimum 35 credits, including courses 5, 109.

Academic Minor: Minimum 20 credits, including courses 4, 5.

MUSIC: (PUBLIC SCHOOL)

Academic Major: Courses 1-2-3, 4-5-6, 7-8-9, 14-15-16, 51-52-53, 54-55-56, 113-114; total 45 credits.

Academic Minor: Courses 1-2-3, 7-8-9, 14-15-16, 54-55-56; total 24 credits.

PHILOSOPHY

Academic Major: Minimum 35 credits, including course 101-102-103.

Academic Minor: Minimum 20 credits, including course 101-102-103.

PHYSICAL EDUCATION FOR WOMEN

Academic Major: Total of 45 credits including physical education 101-102-103, 104-105-106, 111-112-113, 131-132-133, 154-155-156, 170-171. Education 160.R. Practice Teaching, Education 145 is additional in all cases except by exemption by head of department of physical education. Electives chosen to suit the different needs under the advice of the head of the department of physical education, and the dean of the School of Education and 101-102-103, Physiology 54-55 are prerequisites for certain foregoing courses in anatomy or physiology.

Students desiring to prepare for Community Recreation and Leadership may select the following combination for an academic major in the department of physical education:

Academic Major: Dramatic Art 31; Sociology 1, 55, 57, 62; Drawing 169, 170, 171; Physical Education 104-105-106, 111-112-113, 154-155-156, 167, 169, 170-171-172, 173; minimum 34 credits. Substitutions in sociology and fine arts may be made with the approval of the head of the department of physical education.

(Anatomy or physiology not required for the courses in physical education mentioned in the foregoing paragraph.)

PHYSICS

Academic Major: Courses 1, 2, 3, and not less than 20 credits from other courses under 200; minimum 35 credits.

Academic Minor: Courses 1, 2, 3, and not less than 5 credits from other courses under 200; minimum 20 credits.

Recommendation as a major or minor for the normal diploma same as the foregoing with all grades above C.

POLITICAL SCIENCE

Academic Major: Courses 1, 2, 5, 60, 100, and electives to make minimum of 35 credits.

Academic Minor: Courses 1, 2, 5, 60, 100, minimum 18 credits.

For teaching civics, courses in history, economics and sociology are de-
sirable as supporting subjects. See also civics for combinations with economics and sociology.

**PSYCHOLOGY**

*Academic Major*: Courses 1, 101, 106, 109, 111, 112, 114, 124 and electives to make a minimum of 35 credits.

*Academic Minor*: Courses 1, 106, 112, 114, and electives to make a minimum of 20 credits.

Recommendations for the normal diploma are made on the bases of quality rather than merely the required number of credits. Only high grade students can be recommended because of the specialized character of psychology work as a teaching subject.

**ROMANIC LANGUAGES AND LITERATURE**

*Academic Major*: Minimum of 35 college credits in one language.

*Academic Minor*: Minimum of 20 college credits in one language.

**Recommendation for Teaching French**: Courses 1-2-3, 4-5-6, 7-8-9, 41, 101-102-103, 158, 159, 160.T, electives from literary courses 10 credits; total 59 credits.

**Recommendation for Teaching Spanish**: Courses 1-2-3, 4-5-6, 7-8-9, 101-102-103, 159, electives from literary courses 10 credits; total 55 credits.

In many cases a part of the French or Spanish courses may have been taken in high school.

The distinction between major and minor recommendations for teaching French or Spanish are determined upon the basis of quality rather than quantity.

**SCANDINAVIAN LANGUAGES AND LITERATURE**

*Academic Major*: Minimum 35 credits.

*Academic Minor*: Minimum 20 credits.

Suggested minors in Swedish: Courses 1-2-3, 4-5-6, 23-24-25; minimum 21 credits.

Suggested minor in Norwegian courses 10-11-12; 13-14-15; 20-21-22.

Because of the diversity of previous preparation it will be necessary to consult the head of the department in each case.

**SOCIOLOGY**

*Academic Major*: Courses 1, 52, 55, 56, 60, and electives to make a minimum of 35 credits.

*Academic Minor*: Courses 1, one from above, and electives to make a minimum of 20 credits.

Electives may be along one of three lines, viz.: anthropology, social theory or social problems. Important basic and supplementary subjects, zoology, psychology, statistics, political science.

See civics for combination with economics and political science.

**ZOOLOGY**

*Academic Major*: Courses 1-2 or 54-55 and electives to make a minimum of 35 credits.

*Academic Minor*: Courses 1-2 or 45-55 and electives to make a minimum of 20 credits.

**COURSES**

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).
LIBRARY SCHOOL

THE FACULTY

HENRY SUZZALLO, Ph.D. (Columbia), LL.D. (California), .................. P R E S I D E N T
JOHN THOMAS CONDON, LL.M. (Northwestern), ...................... D E A N OF FACULTIES
WILLIAM ELIAB HENRY, A.M. (Indiana), .................. Professor of Library Science; D I R E C T O R
CHARLES WESLEY SMITH, A.B., B.L.S. (Illinois), ...Associate Professor of Library Science
ELLIE F. HOWE, A.B. (Washington), Graduate in Library Science (Washington), Certificate (Carnegie Library School), .................. Instructor in Library Science
ROBINSON SPENCER, A.B. (Wesleyan University), B.L.S. (Illinois), .................. Instructor in Library Science
MARIO SMART ALFONSO, A.B. (Nebraska), B.S. in L.S. (Washington) .................. Instructor in Library Science

GENERAL STATEMENT

The Library School is a professional school offering opportunity for education in librarianship.

Being an educational institution, the library should not be entrusted to persons of merely elementary acquirements. Its conduct requires a larger and more comprehensive educational equipment and outlook than can be had with less than that signified by the bachelor's degree.

The technical curriculum extends through three quarters—short in comparison with the academic curriculum, because the general educational equipment of the librarian is of larger significance than the technical education, but neither is sufficient without the other.

Graduates of the School are competent to take charge of a small public library or to take an assistant's place in any department of the larger libraries. After a reasonable experience in either of these positions, they have shown themselves competent to conduct libraries of medium size with excellent success.

ADMISSION

Admission is granted as follows:

1. To graduate students who hold the baccalaureate degree from any college or university of good standing, whose undergraduate work in either or both high school and college has included the equivalent of at least twenty college credits in each of two modern foreign languages, German and French preferred. Slight deficiencies in the languages, however, may be accepted as conditions, but must be removed within the period of study in the Library School. Upon the completion of forty-six credits in library science, and the removal of any language conditions, the candidate will be granted the degree of bachelor of science in library science.

2. To students who have qualified for senior standing in the College of Liberal Arts or in the elective curricula in the College of Science—having earned 45 credits, including 10 credits in military science or physical education and including all required work. Such students may finish the curriculum in three quarters, provided they meet the language requirements prescribed in paragraph one above. The completion of forty-six credits in library science shall constitute and satisfy the requirements for the degree of bachelor of arts.

ADVISORY SUGGESTIONS

Before entering the School the student should be a typist of accuracy and fair speed.

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No one with serious physical defects or ill health can readily secure a position in library service, therefore such persons should not ask admission to the School. Persons beyond thirty years of age are advised not to enter the School unless they have already had experience in library service.

**CURIricula in Library Science**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order routine, trade bibliography, and circulation</td>
<td>2</td>
</tr>
<tr>
<td>Classification and subject headings</td>
<td>3</td>
</tr>
<tr>
<td>Cataloging</td>
<td>6</td>
</tr>
<tr>
<td>Reference</td>
<td>6</td>
</tr>
<tr>
<td>History of books and libraries</td>
<td>2</td>
</tr>
<tr>
<td>Organization and extension</td>
<td>2</td>
</tr>
<tr>
<td>Administration</td>
<td>3</td>
</tr>
<tr>
<td>Subject bibliography</td>
<td>2</td>
</tr>
<tr>
<td>Book selection</td>
<td>2</td>
</tr>
<tr>
<td>Work with children and schools</td>
<td>2</td>
</tr>
<tr>
<td>Special lectures</td>
<td>1</td>
</tr>
<tr>
<td>Practice (300 clock hours)</td>
<td>10</td>
</tr>
</tbody>
</table>

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

**Practice.**—Practice under careful supervision covers 300 clock hours, fifteen hours per week through ten weeks each during the winter and spring quarters.

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

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

**Courses**

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).
COLLEGE OF BUSINESS ADMINISTRATION

The Faculty

HENRY SUZZALLO, Ph.D., (Columbia), LL.D. (California) ........................................... President
JOHN THOMAS CONDON, LL.M. (Northwestern) .......................................................... Dean of Faculties
STEPHEN IVAN MILLER, Jr., A.B. (Stanford), LL.B. (Michigan), Professor of Economics; Dean
LESLIE JAMES ABER, B.S., J.D. (Chicago) ................................................................. Professor of Law
THOMAS L. KINZER, Ph.D. (George Washington University) ..................................... Professor of Business Administration

HOWARD T. LEWIS, M.A. (Wisconsin) ................................................................. Professor of Business Administration
JAMES E. GOWD, A.M. (Harvard) ................................................................. Professor of Maritime Commerce; Dean of Men

HOWARD H. PRUSON, Ph.D. (Iowa) .................................................................. Professor of Business Administration

VANDERWERN CURTIS, Ph.D. (Harvard) .................................................. Associate Professor of Business Administration

HARRY E. SMITH, Ph.D. (Cornell) ................................................................. Associate Professor of Business Administration

WILLIAM D. MORIARTY, Ph.D. (Michigan) .................................................. Associate Professor of Business Administration

WILLIAM E. COX, A.M. (Texas) ................................................................. Associate Professor of Business Administration

THERESA S. McMAHON, Ph.D. (Wisconsin) .............................................. Assistant Professor of Business Administration

*MACY M. SKINNER, Ph.D. (Harvard)

JAMES M. McCOMAHY, M.A., (Washington and Jefferson), LL.B. (Northwestern), C.P.A. .......................................................... Lecturer in Accounting

PIERCE C. DAY, C.P.A. ........................................................................... Lecturer in Accounting

J. F. ROBERTSON, C.P.A. ........................................................................... Lecturer in Accounting

W. B. HENDERSON ........................................................................... Lecturer in Business Administration

HOMER E. GREGORY, A.M. (Chicago) .................................................. Instructor in Business Administration

KARL E. LIND, A.B. (Stanford) ................................................................. Instructor in Business Administration

OSCAR E. DRAFUR ........................................................................... Instructor in Business Administration

J. G. DREXOLL, Jr., A.B. Li.-B., (Stanford) ..................................... Instructor in Business Administration

V. V. TARNELL, M.B.A. (Harvard) ............................................................. Instructor in Business Administration

F. H. HAMACK ........................................................................... Instructor in Business Administration

WILLIAM A. RUSSELL ................................................................... Acting Instructor in Business Administration

HORACE D. McGUIRE .................................................................. Associate in Business Administration

FRANK C. VAN DE WALKER, A.B. ................................................................. Associate in Business Administration

RAYMOND F. FARWELL, A.B., (California) ............................................. Associate in Maritime Commerce

FREDERICK M. PADSILFORD, Ph.D. (Yale), Professor of English; Dean of the Graduate School

EDWARD McMAHON, A.M. (Wisconsin) ................................................................. Associate Professor of American History

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

ROBERT EDWARD MORRIS, Ph.D. (Nebraska), Ph.D. (Strassburg), Professor of Mathematics

HENRY KIMBER BUNSDEN, Ph.D. (Columbia) .................................................. Professor of Chemical Engineering

CARL EDWARD MAGNUSON, Ph.D. (Wisconsin), D.E. (Minnesota) .......................................................... Professor of Electrical Engineering; Dean of the College of Engineering

FREDERICK ELMER BOLTON, Ph.D. (Clark) ................................................................. Professor of Education; Dean of the School of Education

EFFIE ISABEL RATT, A.M. (Columbia) ................................................................. Professor of Home Economics

STEVENVSON SMITH, Ph.D. (Pennsylvania) ................................................................. Professor of Psychology

Teaching Fellows and Student Assistants

A. P. TROW, A.B. ................................................................. Teaching Fellow in Business Administration

W. E. DIJKERSON, B. A. ................................................................. Teaching Fellow in Business Administration

G. I. BUTTERDORF, B.A. ................................................................. Teaching Fellow in Business Administration

E. L. BAIN ........................................................................... Teaching Fellow in Business Administration

L. L. NEWMAN ................................................................. Student Assistant in Business Administration

F. W. WOODBRIDGE ........................................................................... Student Assistant in Business Administration

O. B. WERNER ........................................................................... Student Assistant in Business Administration

R. H. LAMONT ........................................................................... Student Assistant in Business Administration

*Absent on leave
Modern business has reached the stage where internal and external economics 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.

A knowledge of accounting, statistics, labor efficiency, resources, credit, insurance, business law and organization, is fundamental for a proper understanding and an intelligent direction of our modern industrial system. Such studies as psychology, sociology, government, ethics, and history provide the larger equipment necessary for dealing with this industrial system in its proper perspective and its social relationships.

The establishment of a well-ordered plant is the basis of a strong position in production. Just as important is 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 and government regulation. The more extended state control of industry especially is calling for unusual ability to cooperate.

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

**Requirements for Admission**

Full information regarding requirements for admission, registration, and expenses may be found on pages 40, 48, 49.

*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.

**Graduation**

*Degrees.*—The College of Business Administration is a professional college. Its graduates 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 190 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 complete in a satisfactory manner an approved course ordinarily requiring three quarters of advanced work beyond that required for the bachelor's degree. Students will not be advised to do graduate work unless they have shown unusual ability in their previous courses. Graduate courses must be selected after consultation with the head of the department in which the student is doing his major work and the approval of the dean 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.

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

**Curricula**

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 the following courses:

**First Year**

- **B. A. 1** General Economics. Autumn, winter, spring, summer. Lecture and discussion groups. Five hours. 5
- **B. A. 7** Economic Resources of the World. Autumn, winter, spring, summer. Five hours. 5
- **B. A. 11-12** Elementary Accounting. Autumn, Winter, spring, summer. Two quarters. 10
- **Math. 11-12** Mathematical Theory of Investments. Autumn, winter, spring, summer. Two quarters. 10
- **Eng. 1-2** Written and Oral English. Autumn, winter, spring, summer. Two quarters. 10
- **Psych. 1** Elements of Psychology. Autumn, winter, spring, summer. Five hours. 5

**Second Year**

- **History** Nine or ten hours. Two quarters required. 9 or 10
- **B. A. 57** Money and Banking. Autumn, winter, spring, summer. 5
- **B. A. 54-55-56** Business Law. Autumn, winter, spring, summer. Three quarters required. 9
- **B. A. 91** Social and Economic Standards of Living, or Sociology I. Autumn, winter, spring, summer. 5
- **Math 13** Theory of Statistics. Autumn, winter, spring, summer. Or five hours elective in some other college if approved by the Dean. 5
- **Approved electives.** Ten hours of accounting or equal number of hours in other colleges than that of Business Administration, 11 or 12.

**Third Year**

- **Pol. Sci 1** Elements of Government. Autumn, winter, spring, summer. One quarter required. Approved electives 40 hours. 5

**Fourth Year**

- **Phil. 2** Introduction to Social Ethics. Autumn, winter, spring, summer. One quarter required. 5
- **B. A. 160** Advanced Economics. Autumn, Winter, spring, summer. One quarter required. 5
- **Research** Five hours in selected major department. 30 credits of approved electives 30

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.

No student is allowed to enter the junior-senior courses of the College of Business Administration unless he has reached at least junior standing and satisfied the prerequisites to these courses.

The prerequisites to the junior-senior courses have been established after the most careful consideration of the standard of efficiency and performance aimed at in the course, and the educational value which the course might have for 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 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 make it just and reasonable. Proof of these experiences and qualifications will be passed upon by the dean of the College of Business Administration.

The junior and senior years are, in a large part, reserved for the student's selected field of business interest. Each student or group of students will be guided and assisted by the instructor designated for that department of work, under the general direction of the dean of the College of Business Administration.

*If not credited, substitution of approved electives in Colleges other than the College of Business Administration.*
Fields of Training.—The following fields of business training are suggested:

1. Accounting
2. Business Finance
3. Industrial and Employment Management
4. Marketing and Sales
5. Merchandising
6. Advertising
7. Transportation
8. Maritime Commerce
9. Foreign Trade
10. Insurance
11. Secretarial Work
12. Commercial Teaching

SUGGESTED COURSES FOR THE PROFESSIONAL FIELDS

In the first year the student fulfills the standardized requirements (see pages 43-45).

For the second, third, and fourth years the following courses are suggested.**

ECONOMICS

Those students in Liberal Arts choosing economics as their major, should consult with the head of the department or the professor in charge of Advanced Economics with regard to a proper selection of courses. The following courses in the College of Business may be regarded as available for such students.

1. General Economics
2. Economics for Engineers
3. Money and Banking
4. Risk and Insurance
5. Social and Economic Standards
6. Economics of Transportation
7. Business Organization
8. Economics of Marketing
9. Corporation Finance
10. Investment and Speculation
11. Foreign Exchange
12. Advanced Money and Banking
13. Advanced Economics
14. American Labor Problems
15. European Labor Problems
16. Labor Legislation (3 hours)
17. Economics of Consumption (2 hours)
18. Women in Industry
19. History of Economic Thought
20. Economics of Distribution
21. Graduate Seminar
22. Economic Problems
23. Seminar in Labor

MARITIME COMMERCE

The suggested curriculum in Maritime Commerce is intended to give preliminary training for the steamship business. After the first year of residence students will be assigned to apprenticeships so that they can alternate quarters of attendance with quarters of office practice and sea service. For details of the apprenticeship plan students should consult with the Maritime Commerce Department.

In addition to the regular requirements of the College of Business Administration the following courses are prescribed for a major in Maritime Commerce: Ship Operation; Paper Work in Shipping; Navigation; Risk and Insurance; Marine Insurance; Water Transportation; Ports and Terminals; Shipping and Consular Regulations; Admiralty Law.

Except for the requirements of the College of Business Administration and of the major, the following outline is merely suggestive. Numbers refer to quarters of residence; e.g., fifth quarter means fifth quarter at the University, exclusive of time spent as apprentices.

First Quarter Credits Second Quarter Credits Third Quarter Credits
General Economics .......... 5 History .......... 5 History .......... 5
Economic Resources of the World .......... 5 Accounting .......... 5 Psychology .......... 5
Accounting .......... 5

**No student will be permitted to specialize in a field of work without having had his schedule approved by the major professor in charge of that field.

*Not given 1922-1923
Fourth Quarter Credits  Fifth Quarter Credits  Sixth Quarter Credits
Ship Operation ........ 5  Paper Work in Shipping ........ 5  Navigation ........ 5
Risk and Insurance ... 5  Money and Banking ........ 5  Theory of Statistics .... 5
Business Law ........ 3  Business Law ........ 5  Business Law ........ 3
Typewriting .......... 0  Typewriting .......... 0  Typewriting .......... 0
Or Elective ........ 2  Or Elective ........ 2  Or Elective ........ 2

Seventh Quarter Credits  Eighth Quarter Credits  Ninth Quarter Credits
Economics of Markets ... 5  Business Insurance .... 5  Water Transportation ... 5
Political Science ........ 5  Business Correspondence ... 5  Philosophy II ........ 5
Electives ........ 7  Business Statistics ........ 5  Electives ........ 6

Tenth Quarter Credits  Eleventh Quarter Credits  Twelfth Quarter Credits
Admiralty Law .......... 3  Advanced Economics ...... 5  Shipping and Consular Regulations .......... 3
Ports and Terminals .... 3  Research ........ 5  Rail and Marine Rates .... 5
Employment Management 6  Foreign Trade ..... 5  Foreign Trade ..... 5
Exporting and Importing 6

ACCOUNTING

SECOND YEAR
Second Year Accounting, 10 Credits

THIRD YEAR
Autumn Quarter Credits  Winter Quarter Credits  Spring Quarter Credits
Advanced Accounting .... 5  Advanced Accounting .... 5  Commercial Credits .... 5
Business Organization ... 5  Corporation Finance .... 5  Business Statistics .... 5
Political Science ........ 5  Banking Practice .... 5  Investments and Speculations .... 5

FOURTH YEAR
Cost Accounting and Installation ........ 5  Auditing Practice and Professional Ethics .... 5  Income Tax and CPA .... 5
Corporation and Railroad Accounting .... 5  Industrial and Employment Management .... 5  Advanced Economics .... 5
Social Ethics .......... 5  Office Management .... 5  Research in Accounting .... 5

BUSINESS FINANCE

SECOND YEAR
Second Year Accounting, 10 Credits

THIRD YEAR
Autumn Quarter Credits  Winter Quarter Credits  Spring Quarter Credits
Business Organization .... 5  Corporation Finance .... 5  Investments and Speculations .... 5
Foreign Exchange ........ 5  Banking Practice .... 5  Commercial Credits .... 5
Political Science ........ 5  Social Ethics ........ 5  Business Statistics .... 5

FOURTH YEAR
Economics of Transportation ........ 5  Railroad Finance .... 5  Advanced Money and Banking .... 5
Risk and Social Insurance .... 5  Research in Business .... 5  Approved Electives .... 5
Approved Electives .... 5  Approved Electives .... 5  Approved Electives .... 5

INDUSTRIAL AND EMPLOYMENT MANAGEMENT

SECOND YEAR
Second Year Accounting, 10 Credits

THIRD YEAR
Autumn Quarter Credits  Winter Quarter Credits  Spring Quarter Credits
Business Organization .... 5  Corporation Finance .... 5  Business Statistics .... 5
Economics of Markets .... 5  Sales Management .... 5  Political Science .... 5
Economics of Advertising 5  Advanced Accounting .... 5  Advanced Accounting .... 5
### Fourth Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Labor Problems</td>
<td>5</td>
<td>Industrial and Employment Management</td>
<td>5</td>
<td>Commercial Credits</td>
<td>5</td>
</tr>
<tr>
<td>Cost Accounting</td>
<td>5</td>
<td>Ethics</td>
<td>5</td>
<td>Investments and Speculations</td>
<td>5</td>
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<tr>
<td>Plant Construction</td>
<td>5</td>
<td>Advanced Economics</td>
<td>5</td>
<td>Research in Industrial and Employment Management</td>
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</tbody>
</table>

### Marketing

#### Third Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
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<td>5</td>
<td>Corporation Finance</td>
<td>5</td>
<td>Business Statistics</td>
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</tr>
<tr>
<td>Economics of Marketing</td>
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<td>Sales Management</td>
<td>5</td>
<td>Commercial Credits</td>
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<tr>
<td>Economics of Advertising</td>
<td>5</td>
<td>Political Science</td>
<td>5</td>
<td>Electives</td>
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</table>

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Money and Banking</td>
<td>5</td>
<td>Trade of Europe</td>
<td>5</td>
<td>Thought</td>
<td>5</td>
</tr>
<tr>
<td>Trade of Far and Near East</td>
<td>5</td>
<td>Industrial Management</td>
<td>5</td>
<td>Trade of America</td>
<td>5</td>
</tr>
<tr>
<td>Research in Marketing and Advertising</td>
<td>5</td>
<td>Electives</td>
<td>5</td>
<td>Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

*Students in Marketing, Merchandising and Advertising should consult with the head of that department as early as possible in their college course, especially if they have in mind some phase of this subject in which they desire to specialize. For students in merchandising and advertising there are electives in Home Economics, Journalism and Painting, Sculpture and Design which need to be fitted into their program, and conflicts in hours may result if these electives are too long delayed. For students who desire to specialize in the Marketing of Lumber not only B.A. 109 but Forestry 6, 120, 153 and 157 are highly desirable.

### Merchandising

#### First Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
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<tr>
<td>General Economics</td>
<td>5</td>
<td>English</td>
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<tr>
<td>Economics Resources</td>
<td>5</td>
<td>Accounting</td>
<td>5</td>
<td>Electives</td>
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<tr>
<td>Psychology</td>
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</table>

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
<td>Business Law</td>
<td>3</td>
<td>Business Law</td>
<td>3</td>
<td>Business Law</td>
<td>5</td>
</tr>
<tr>
<td>Money and Banking</td>
<td>5</td>
<td>Social and Economic</td>
<td>5</td>
<td>Theory of Statistics</td>
<td>5</td>
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<tr>
<td>Textiles</td>
<td>3</td>
<td>Standards</td>
<td>5</td>
<td>Home Furnishing</td>
<td>3</td>
</tr>
<tr>
<td>Industrial History</td>
<td>5</td>
<td>Industrial History</td>
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<td>Approved Electives</td>
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#### Second Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
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<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Economics of Marketing</td>
<td>5</td>
<td>Sales Management</td>
<td>5</td>
<td>Electives</td>
<td>5</td>
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</tbody>
</table>

#### Third Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics of Advertising</td>
<td>5</td>
<td>Political Science</td>
<td>5</td>
<td>Sociology</td>
<td>5</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>5</td>
<td>Approved Electives</td>
<td>5</td>
<td>Approved Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

#### Fourth Year

During the senior year the student will spend alternate quarters on full time in the merchandising field in which he desires to specialize. (See general statement of Apprenticeships in Marketing, Merchandising, and Advertising). The program for the other quarters of the senior year will be made up of approved electives chosen with reference to his special field, only advanced economics being required of all.
### UNIVERSITY OF WASHINGTON

#### ADVERTISING

##### THIRD YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Composition</td>
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<td>Advanced Composition</td>
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</tr>
<tr>
<td>Economics of Marketing</td>
<td>5</td>
<td>Sales Management</td>
<td>5</td>
</tr>
<tr>
<td>Economics of Advertising</td>
<td>5</td>
<td>Corporation Finance</td>
<td>2</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>2</td>
<td>Electives</td>
<td></td>
</tr>
</tbody>
</table>

##### FOURTH YEAR

| Trade of Far and Near East | 5 | Trade of Europe | 5 | Trade of Americas | 5 |
| Banking | 5 | Typography of Advertising | 2 | Typography of Advertising | 2 |
| Research in Marketing and Advertising | 3 | Research in Marketing and Advertising | 3 | |

#### TRANSPORTATION

Majors in Transportation should work out their complete four year course after consultation with the head of the department. The group of subjects chosen will vary in accordance with the interest of the student. No effort is made here to fit a complete course for transportation majors upon the minimum requirements as stated on page 106.

##### SECOND YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
<td>Advanced Composition</td>
<td>5</td>
<td>Advanced Composition</td>
<td>5</td>
</tr>
</tbody>
</table>

##### THIRD YEAR

| Economics of Transportation | 5 | Railroad Finance and Administration | 5 | Business Statistics | 5 |
| Business Report Writing | 5 | Banking Practice | 5 | Commercial Credits | 5 |
| Business Organization | 5 | Marine Insurance | 5 | |

##### FOREIGN TRADE

##### THIRD YEAR

<table>
<thead>
<tr>
<th>Spring Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Economics of Transportation</td>
<td>5</td>
<td>Marine Insurance</td>
<td>5</td>
</tr>
<tr>
<td>Economics of Markets</td>
<td>5</td>
<td>Political Science</td>
<td>5</td>
</tr>
<tr>
<td>Foreign Exchange</td>
<td>5</td>
<td>Electives</td>
<td>5</td>
</tr>
</tbody>
</table>

##### FOURTH YEAR

| Exporting and Importing | 5 | East | 5 | Trade of Americas | 5 |
| Commercial Policies | 5 | Trade of Europe | 5 | Social Ethics | 5 |
| Advanced Economics | 5 | Research in Foreign Trade | 5 | |

#### INSURANCE

##### Second Year Accounting, 10 Credits

##### THIRD YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Winter Quarter</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk and Insurance</td>
<td>5</td>
<td>Political Science</td>
<td>5</td>
</tr>
<tr>
<td>Business Organization</td>
<td>5</td>
<td>Office Management</td>
<td>5</td>
</tr>
<tr>
<td>Contracts</td>
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<td>Contracts</td>
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</tr>
</tbody>
</table>

*At least two years of modern foreign language will be required of all majors in Foreign Trade unless they are specifically exempted from the requirement.
COLLEGE OF BUSINESS ADMINISTRATION

FOURTH YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credit</th>
<th>Winter Quarter</th>
<th>Credit</th>
<th>Spring Quarter</th>
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</thead>
<tbody>
<tr>
<td>Fire Insurance</td>
<td>5</td>
<td>Marine Insurance</td>
<td>5</td>
<td>Real Estate and Casualty</td>
<td>5</td>
</tr>
<tr>
<td>Advanced Economics</td>
<td>5</td>
<td>Corporation Finance</td>
<td>5</td>
<td>Insurance</td>
<td>5</td>
</tr>
<tr>
<td>Social Ethics</td>
<td>5</td>
<td>Business Administration</td>
<td>5</td>
<td>Research in Insurance</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Insurance Law</td>
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SECRETARIAL WORK

THIRD YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
<td>Political Science</td>
<td>5</td>
<td>Office Management</td>
<td>5</td>
<td>Social and Economic</td>
<td>5</td>
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<td>Secretarial Training</td>
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<tr>
<td>Business Organization</td>
<td>5</td>
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FOURTH YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<tbody>
<tr>
<td>Advanced Economics</td>
<td>5</td>
<td>Business Administration</td>
<td>5</td>
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<tr>
<td>Research in Secretarial Training</td>
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<td>Electives</td>
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COMMERCIAL TEACHING

SECOND YEAR

Second Year Accounting, 10 Credits

THIRD YEAR

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<td>Business Organization</td>
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<td>Secretarial Training</td>
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FOURTH YEAR

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<tr>
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<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<td>Advanced Economics</td>
<td>5</td>
<td>Commercial Teacher's Course</td>
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<tr>
<td>Electives</td>
<td>10</td>
<td>Electives</td>
<td>10</td>
<td>Practice Teaching</td>
<td>Electives</td>
</tr>
</tbody>
</table>

GENERAL INFORMATION

Textbooks—Syllabus Fees.—Many courses in the College of Business Administration require a textbook, in a few instances more. The faculty aims to keep the textbook expense as low as is consistent with a high standard of class work.

Syllabus or consultation fees are asked in all except research courses. The service rendered in either case is necessary and valuable. With the exception of courses in accounting this fee has been fixed at $1.50 a course. A fee of $10 will be asked for any one quarter of instruction in shorthand or typing, as these are not a part of the regular curriculum and must finance themselves.

Library Facilities.—The college is placing in the library a large number of supplementary books. For many years government reports, containing a vast amount of material for the student of business, have been filed in the library. 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 report from time to time on current topics of interest.

Student Organizations.—Three professional societies with national affiliations have been established at the College of Business Administration. Beta Gamma Sigma and Alpha Kappa Psi are professional fraternities for men which at present count chapters in many eastern institutions. Membership
is based upon high scholarship. Their aim is to further serious study of business problems. Phi Sigma Chi is a similar organization among the women majoring in business administration. Its purpose is not social, but professional, and membership is restricted to candidates for the B.B.A. degree. A number of prominent business women in Seattle and eastern cities are honorary members. The parent chapter of Pan Xenia, an honor society for majors in foreign trade, was founded two years ago at the University of Washington and bids fair to play an important part in the future of our foreign trade department.

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, five hours of military science per week.
Women students.—Physical education, five times per week for two years.

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

Contact with Actual Business.—The business men of the state and especially of the city of Seattle, are cooperating in a most genuine way with the College of Business Administration. Students are encouraged to avail themselves of the many opportunities to do part-time work in local concerns along their chosen lines.

In addition to part-time employment an alternating quarter system of office practice and academic work has been established in the division of maritime commerce. The office practice work is made a definite part of the training. Students are referred to the Maritime Commerce bulletin for further information.

During the senior year, or during a year of graduate work, students specializing in marketing, merchandising, or advertising are given the opportunity to spend alternate quarters in actual business under the immediate supervision of a field director. This plan involves either attendance at summer school or working under supervision during the summer between the junior and senior year. These apprenticeships are made possible by the active cooperation of Seattle and Tacoma business houses. They give the student the benefit of a favorable introduction to the best business practice, and also give him this introduction while he is still in college. His theories may be vitalized by supervision of department heads in the business and the teacher of theory in college discussing with him the application of theory to actual business as the student finds it.

This apprenticeship system is to be extended until it includes students in all of the departments of the College. Chinese students of the college of Business Administration are placed in Seattle business houses, either already engaged in trade with the Orient or contemplating entering that field. The China Club of Seattle has shown its usual fine desire to cooperate with the University, in securing twenty or more such apprenticeships. Much benefit is expected to accrue both to the Chinese students who are initiated into actual American business methods as well as to the firms which will now receive advice as to the needs of the market in China and will later have native representatives in China familiar with their goods, methods, and business standing.

Advisory Boards.—The College of Business Administration has formed advisory boards of business men throughout the state for foreign trade, money and banking, merchant marine management, and insurance. Other board for transportation, employment management and executive management, sales
management, accounting, commercial teaching, secretarial training and merchandising are being formed. The purpose is to create a direct cooperation between education and industry, principle and practice.

The Students' Advisory Council.—The B.A. Council, organized in the autumn quarter of 1919 by the students of the College, is a representative body having as its members three officers, two representatives from each of the three upper undergraduates classes, one representative from the freshman class, and one from the graduate school. It functions in an advisory capacity on matters relating to standard of scholarship, student esprit-de-corp; cooperation between the faculty and the student body on other matters which are brought to its attention by the faculty or the student body. The regular Business Administration assemblies are organized and conducted under the direction of the Council.

Cases of student discipline are investigated and reviewed, and the council renders service as a court of appeals.

The mentor system is the conception of the Council. The mentor plan provides for the appointment of a group of senior and graduate students to meet the freshmen of the College at a certain appointed time in three conferences during the quarter. It is the Big Brother and Sister movement made concrete. The mentors take the responsibility of seeing that every freshman student in his or her group gets the largest possible benefit out of his College life.

International Relations.—Plans are now being completed to establish exchange scholarships with China and with some of the South American republics. The opportunities which are thus afforded for American students to study abroad and for foreign students to gain a better understanding of American life and thought will be of a great educational value.

Fellowships.—The college is now in a position to grant several fellowships with opportunity for assisting in the instruction. Address Dean of the College of Administration.

Outside Lectures.—The College of Business Administration to supplement as far as possible the work given with practical lectures and discussions by business men. Many of the leading business men of Seattle and the state have delivered lectures in their special fields to classes.

Courses

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).
SCHOOL OF JOURNALISM

THE FACULTY

HENRY SUEZALO, Ph.D. (Columbia), LL.D. (California) .................................. President
JOHN THOMAS CONDON, LL.M. (Northwestern) .................................. Dean of Faculties
MATTHEW LYLE SPEINER, Ph.D. (Chicago) .................................. Professor of Journalism; Director
FRED WASHINGTON KENNEDY .................................. Assistant Professor of Journalism; Director of the Journalism Laboratories
ROBERT WILLIAM JONES, A.B., LL.B. (Missouri), A.M. (South Dakota) .................................. Assistant Professor of Journalism
MAURICE HICKLIN, A.B., B.J. (Missouri) .................................. Instructor in Journalism
GEORGE BERNARD ASTEL .................................. Student Assistant
*EVERHART ARMSTRONG, B.S. (Delaware) .................................. Associate in Journalism
NAIDA LOUISE CURTIS, B.S. (Columbia) .................................. Secretary to the Director

EDMOND STEPHEN MEANY, M.L. (Wisconsin) .................................. Professor of History
WILLIAM SAVERT, Ph.D. (Harvard) .................................. Professor of Philosophy
PERRIN JOSEPH FRENCH, Ph.D. (Johns Hopkins) .................................. Professor of Romantic Languages
STEVENSON SMITH, Ph.D. (Pennsylvania) .................................. Professor of Psychology
LESLIE JAMES AYER, J.D. (Chicago) .................................. Professor of Law
FRED CARLTON ATKIN, Ph.D. (Chicago) .................................. Professor of Education
WILLIAM DANIEL MOWREY, Ph.D. (Michigan) .................................. Assistant Professor of Business Administration
ROBERT MAX GARRETT, Ph.D. (Marlch) .................................. Assistant Professor of English
AMBRONS PATTENSON .................................. Associate in Fine Arts
FRANK H. HAMACK .................................. Assistant in Business Administration

THE SCHOOL AND ITS 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.

The professional courses in the School of Journalism and those prescribed in the colleges of Liberal Arts and Science are planned with two aims in view—to offer instruction and practice in all important details of newspaper work, and to provide such studies as are best adapted to give the broad training necessary for successful pursuit of journalism as a profession. In the first the courses include reporting, copy reading, editorial writing, advertising, cartooning, trade journalism, the mechanics of printing and publishing, and the practical work of the business and administrative offices. In the second are history, economics, political science, sociology, philosophy, psychology, language, literature, and similar subjects necessary in developing the broader scholarship indispensable in modern journalism.

This double ideal of the School of Journalism curriculum has justified itself in the increasing demands of Pacific coast editors for University graduates. Requests to date have exceeded the supply to such an extent that the School has been compelled to recommend students who have not completed their training. Ultimately the School hopes to meet the demand with graduates only.

*Spring Quarter, 1922
School of Journalism

Equipment.—Journalism and printing take up the entire first floor of Commerce Hall, 208 x 70 feet, occupied first in September, 1917. On this floor are the class rooms, the journalism library and reading room, the faculty offices, the University Press, and all the mechanical equipment for teaching practical journalism. The University Press does practically all the printing required on the campus.

Frederick A. Churchill Junior Memorial Library.—In March, 1918, a separate journalism library and reading room was opened, 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 carefully selected books and periodicals relating to printing, advertising, current events, short story, and all phases of the editorial side of the newspaper.

Journalism “Morgue.”—In the Memorial Library is a journalism “morgue,” for newspaper and periodical clippings on current topics classified for instant reference. This contains biography, book reviews, and dramatic criticism, besides a continuous chronicle of events.

Student Publications.—The editorial and business offices of The University of Washington Daily, Sun Dodger, Columns, and Tyee are on the first floor of Commerce Hall. Ownership of The Daily and Tyee is vested in the student body. Ownership and control of The Columns and Sun Dodger are held by corporations of students. All of these are supervised by the School of Journalism, the staff members of each being recruited mainly from the School. All offer opportunities for practical experience in magazine and newspaper work. Places on the editorial and business staffs of each, awarded for the most part on a basis of literary and executive ability, are open to all students in the School of Journalism. Opportunity for wide experience in reporting, copy reading, editorial writing, and advertising is offered on The University of Washington Daily, published as a four to six-page paper by the students.

Journalistic Clubs.—Three national organizations are maintained by students in the School of Journalism. Junior and senior men have a chapter of Sigma Delta Chi, one of the two national journalistic fraternities. Junior and senior women maintain a chapter of Theta Sigma Phi, the national journalistic sorority founded at the University of Washington in 1910. Members of the Sun Dodger staff have also a chapter of Hammer and Coffin, the national comic-magazine fraternity.

Opportunity for Self-Help.—The director of the School of Journalism has frequent calls from business managers and publishers for students with some experience to do part time work in advertising, publicity, and reporting. All the local newspapers and many of the more important dailies in neighboring cities maintain special reporters and correspondents at the University. Remuneration for this work ranges up to $60 a month, according to the service given. Promise of employment, however, cannot be made in advance. Positions usually are given those on the ground who are able to show by actual experience that they can do the work required.

Admission.—On the successful completion of 90 plus 10 credits of prescribed and elective work at the University of Washington, or an equivalent amount from another institution of accredited standing, students are granted the junior certificate, which admits to the School of Journalism. (See pages 70-71).
Fees.—In certain courses in journalism laboratory fees are charged. These go toward purchase of textbooks, student materials, community typewriters—of which the School has nineteen—and toward subscriptions for newspapers and periodicals, of which the School takes forty or fifty annually, in addition to a large number of weeklies that come to the director’s desk on exchange. The number of courses requiring fees varies from year to year. In 1922-23 the maximum laboratory fees in journalism, in addition to the regular University fees, will not be more than $2.50 a quarter for any student, regardless of the number of courses taken.

Pre-Journalism Majors.—The director of the School of Journalism is the advisor for all students in journalism from the beginning of the freshman year. Registration of pre-journalism majors at the beginning of each quarter is held in the director’s office. To him should be taken questions about coordinating courses in other schools and any matters touching the scholastic work of journalism majors.

Journalism Curriculum.—From the beginning of the freshman year a specific curriculum of studies (see page 117) is required of students expecting to major in journalism. Courses in news writing, the country newspaper, and elements of publishing are open to students of sophomore rank. Entrance to the School of Journalism is granted on the ability shown by the individual in these courses to do newspaper work successfully. Formal admission is not permitted until the junior year.

Shorthand and Typewriting.—All written work in the School of Journalism must be done on a typewriter. Both shorthand and typewriting are required for graduation. Prospective students may save themselves much time, however, by learning shorthand and typing before entering the University. Tests in each are given quarterly. Those passing the tests successfully are excused from the University courses.

Graduation.—The curriculum of the School of Journalism leads to the degree of bachelor of arts in journalism, for which 180 credits must be obtained, plus 10 hours in physical training or military science. Sixty of these credits must be in journalism. And a minimum of 90 plus 10 hours must have been earned before the student is formally registered in the School of Journalism. An oral examination before the journalism faculty is required of seniors not less than two weeks before the end of the quarter in which they expect to graduate.

Graduate Study.—Advanced courses in journalism, history, economics, political science, sociology, and English are offered students wishing to take graduate study in preparation for newspaper work or teaching journalism. A wide demand exists in high schools, colleges, and universities for instructors adequately trained to teach journalism. The University library contains a large collection of bound newspapers and magazines and furnishes unusual opportunity for a historical study of American journalism. Special provision is made for directing the work of graduate students interested in historical, political, psychological, or language studies in journalism. The courses required are determined by the nature and amount of undergraduate work the candidate has done in journalism and the phase of it in which he wishes to specialize, such as advertising, the business office, trade journalism, or the purely editorial field. A thesis constitutes one of the requirements. On completion of the requisite number of hours, the degree of master of arts in journalism is granted by the University.
**Specialization.**—Students looking forward to specialized branches of journalistic work, such as trade or class journalism, advertising, or the business office, will find the School of Journalism equipped to aid them. While emphasis is laid on the editorial side of the newspaper field, provision is made in the curriculum for practical training in other departments as well.

**CURRICULUM**

Requirements for the degree of bachelor of arts in journalism are scheduled below. The courses are arranged in the order in which they normally follow each other. Those with a double dagger are required. Those marked with a single dagger are regarded as essential. Others are suggested electives.

### First Year

<table>
<thead>
<tr>
<th>Architecture</th>
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<tr>
<td>10:11-12. Freehand Drawing</td>
<td>3</td>
<td>5-6. English Political and Social History</td>
<td>10</td>
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<tr>
<td>Economics</td>
<td>1. General Economics</td>
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<tr>
<td></td>
<td>6. Business Correspondence</td>
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<tr>
<td>English</td>
<td>1. Composition</td>
<td>5</td>
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<tr>
<td>64-66. Great English Writers</td>
<td>10</td>
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<tr>
<td>Foreign Language</td>
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<td>1. Introduction to Sociology</td>
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### Second Year

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<tr>
<td>11-12. Elementary Accounting</td>
<td>10</td>
<td>50-57-58. Illustration</td>
<td>9</td>
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<tr>
<td>English</td>
<td>1. Business Law</td>
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<tr>
<td>67-69-69. Great American Writers</td>
<td>6</td>
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<tr>
<td>Foreign Language</td>
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<td>1-2-3. Military Science</td>
<td>5</td>
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<tr>
<td>History</td>
<td>57-59. History of the United States</td>
<td>10</td>
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<tr>
<td>71-72-73. Ancient History</td>
<td>9</td>
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<tr>
<td>Journalism</td>
<td>51. News Writing</td>
<td>5</td>
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<tr>
<td></td>
<td>70. Elements of Publishing</td>
<td>5</td>
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<tr>
<td>Military Science</td>
<td>51-52-53. Practical Military Science</td>
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<td>4-5-6. History of Music</td>
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### Third Year

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</thead>
<tbody>
<tr>
<td>Astronomy</td>
<td>1. Introduction to Astronomy</td>
<td>1</td>
<td>131. Europe since 1870</td>
</tr>
<tr>
<td></td>
<td>54. Economics of Markets</td>
<td>3</td>
<td>147. Civil War Period</td>
</tr>
<tr>
<td></td>
<td>118. Business Management</td>
<td>5</td>
<td>149. National Development</td>
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<tr>
<td></td>
<td>96. The Bible as Literature</td>
<td>3</td>
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<tr>
<td></td>
<td>104-105-106 Contemporary Literature</td>
<td>9</td>
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<tr>
<td></td>
<td>147-148-149. The English Novel</td>
<td>9</td>
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</tr>
<tr>
<td>Foreign Language</td>
<td>10</td>
<td>120. Copy Reading</td>
<td>6</td>
</tr>
<tr>
<td>Greek</td>
<td>11. Greek Civilization</td>
<td>5</td>
<td>130. Fundamentals of Advertising</td>
</tr>
</tbody>
</table>

1. Students who have not had science in high school are required to take ten hours of chemistry or physics and ten of botany or zoology in the University. Students entering without foreign language are required to take twenty hours of a modern foreign language in the University without credit.

2. Students who have taken, or who plan to take, three or more years of ancient language, may omit this requirement.
Students who have taken, or who plan to take, three or more years of ancient language, may omit this requirement.

Advertising.—Students expecting to make advertising a profession should elect the following courses from those scheduled above: Architecture 10-11-12 (Freehand Drawing); Economics 106 (Economics of Markets); Economics 138 (Sales Management); Economics 180 (Trade of the Americas); Journalism 130 (Fundamentals of Advertising); Journalism 131 (Display Advertising); Journalism 133 (Advertising Typography); Journalism 160 (Trade Journalism); Painting and Design 56-57-58 (Illustration). All these will be found of particular value in advertising work.
COLLEGE OF ENGINEERING

THE FACULTY

HENRY SUEBALLO, Ph.D. (Columbia), LL.D. (California) .................................................. PRESIDENT

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

CARL EDWARD MAFMUGSON, Ph.D. (Wisconsin), E.E. (Minnesota) ............................ Professor of Electrical Engineering; Director of Engineering Experiment Station; DEAN

EVERETT OWEN HARTWOOD, C.E., M.A. (Virginia), S.B. (Massachusetts Institute of Technology) ............................................. Professor of Mechanical Engineering

CHARLES CHURCH MOOD, M.S., C.E. (Lafayette), M.C.E. (Cornell) ........................... Professor of Civil Engineering

WILLIAM FRANKLIN ALLISON, B.S., C.E. (Purdue), C.E. (Cornell) ......................... HENRY KIRKSTEN BENSON, Ph.D. (Columbia) .................................................. Professor of Chemical Engineering

GEORGE SAMUEL WILSON, B.S. (Nebraska) ................................................................. Associate Professor of Mechanical Engineering

CHARLES WILLIAM HARMS, C.E. (Cornell) ............................................................... Associate Professor of Civil Engineering

EDGAR ALLISON LOWE, B.S., M.E. (Wisconsin) .......................................................... Associate Professor of Electrical Engineering

ARTHUR MILTON WINSLOW, Ph.B. (Brown), B.S. (Massachusetts Institute of Technology) ............................................. Associate Professor of Mechanical Engineering

HARRY ROYST, B.S. (C.E.), (Illinois) .............................................................................. Associate Professor of Civil Engineering

FREDERICK KURT KIRKSTEN, B.S., E.E. (Washington) ....................................................

LESLIE FOREST CURTIS, B.S. (Tufts), M.S., E.E. (Washington) ................................. ISAAC LEONARD COLLIER, B.S., C.E. (Washington) .................................................. Assistant Professor of Civil Engineering

CHARLES CULLENBORN MAY, B.S., C.E. (Washington), Assistant Professor of Civil Engineering

JOHN CHARLES KATHEDY, A.M., B.S., C.E. (Washington) ...........................................

CHARLES FALCONER WEID, C.E. (Pennsylvania State College) ........................................ Associate in Civil Engineering

CLARENCE LESTER WHITE, C.E. (Iowa) ................................................................. Instructor in Civil Engineering

GORDON RUSSELL SHUCK, E.E. (Minnesota) ............................................................. Instructor in Electrical Engineering

HARRY J. McINTYRE, B.S. (M.E.) (Washington) ........................................................... Instructor in Mechanical Engineering

EDMOND CLARENCE MILLER, B.S. (E.E.) (Washington) ............................................ Instructor in Civil Engineering

ROBERT QUIKEL BROWN, B.S. (E.E.) (Washington) ..................................................... Instructor in Electrical Engineering

CHIUS GREENSHINE DODSON, M.E. (Montana School of Mines) .................................... Instructor in Civil Engineering

FOREST CHARLES DANA, B.S. (C.E.) (Washington) ...................................................... Instructor in Civil Engineering

ALBERT KALIN, B.S. (E.E.) (Washington) ................................................................. Instructor in Electrical Engineering

BENJAMIN TAYLOR, B.S. (Cornell Agricultural College) ........................................... Instructor in Mechanical Engineering

ROBERT H. G. EMDONDS, B.S. (Whitman) ................................................................. Instructor in Mechanical Engineering

GEORGE LESLIE ROADE, B.S. (E.E.) (Washington) ..................................................... Acting Instructor in Electrical Engineering

JOHN HOWARD THOMPSON, B.S. in Metallurgical Engineering (Washington) ...........

JACK ROSSLOOK TOLMIE, B.S. (E.E.) (Washington) ..................................................... Instructor in Electrical Engineering

EDWIN HOOD WILCOX, M.E. (Washington) ............................................................... Instructor in Civil Engineering

A. TITUSBOld, B.S. (C.E.) (Washington) ................................................................. Instructor in Civil Engineering

GEORGE S. SMITH, B.S. (E.E.) (Washington) ............................................................... Instructor in Electrical Engineering

EDWARD LEONARD STRANGBO, B.S. (C.E.) (Washington) ........................................ Associate in Civil Engineering

CHAUNOT WEICHERD, B.S. (C.E.) (Washington) .......................................................... Instructor in Engineering Shops

FREDERICK MORGAN PAGELFORD, Ph.D. (Yale) ..........................................................

GEORGE MCMILLAN SMITH, Ph.D. (Freiburg) .............................................................. Professor of English; Dean of the Graduate School

EUGENE TEMPLE BELL, Ph.D. (Columbia) ............................................................... Professor of Inorganic Chemistry

JOHN WENXNIL, Ph.D. (Wisconsin), D.F.H. (Harvard) ................................................. Professor of Bacteriology

LESLIE JAMES ATHER, B.S. (Upper Iowa), J.D. (Chicago) ........................................... Professor of Law

JOSEPH DANIELS, S.B. (Massachusetts Institute of Technology), M.S. (Lehigh) ........

HERNLOUIS BRASEK, Ph.D. (Cornell) ................................................................. Associate Professor of Engineering Physics

GEORGE EDWIN GAVITT, B.S. (C.E.) (Michigan) ....................................................... Assistant Professor of Mathematics

LEWIS IRVING NANCE, Ph.D. (Pennsylvania) .............................................................. Assistant Professor of Mathematics

SAMUEL HERBERT ANDERSON, Ph.D. (Illinois) .............................................................. Assistant Professor of Physics

*Leave of absence

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CURRICULA AND DEGREES.—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 more general training than is given in the regular four-year curricula. This curriculum leads to the degree of bachelor of science (B.S.), and should be 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 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) consisting chiefly of problems taken from engineering work, and analyzed from an engineering standpoint.

The freshman work in the departments of chemical, civil, electrical, and mechanical engineering, is identical, making it possible for a student to delay the definite choice until the beginning of, the sophomore year.

All freshman and 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. 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 or B. The candidate must comply with the regulations of the Graduate School and 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 three years on graduates of this college holding the degree (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.

Engineering Laboratories.—For description of laboratories see pages 29-36.
COLLEGE OF ENGINEERING

REQUIREMENTS FOR ADMISSION

Full information regarding requirements for admission, registration, and expenses may be found on pages 40, 48, 49.

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.

CURRICULA OF THE COLLEGE OF ENGINEERING

FOR THE FRESHMAN YEAR IN ALL DEPARTMENTS

<table>
<thead>
<tr>
<th>FRESHMAN</th>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
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<th>Spring Quarter</th>
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<td>Gen. Chem. 23</td>
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<td>Drawing, C.E. 1</td>
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<td>Drawing, C.E. 2</td>
<td>3</td>
<td>Surveying, C.E. 21</td>
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<td>Mil. Sci. or Phys. Ed.</td>
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<td>Mil. Sci. or Phys. Ed.</td>
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IN CHEMICAL ENGINEERING

Leading to the degree of Bachelor of Science in Chemical Engineering

FRESHMAN

The same for all curricula. See above.

SOPHOMORE

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<thead>
<tr>
<th>Autumn Quarter</th>
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<td>Freshman</td>
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<tr>
<td>Qual. Chem. 101</td>
<td>Quant. Chem. 112</td>
<td>Quant. Chem. 113</td>
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<tr>
<td>Mechanism—M.E. 81</td>
<td>Steam Eng.—M.E. 82</td>
<td>Steam Lab.—M.E. 83</td>
</tr>
<tr>
<td>Dif. Col.—Math. 61</td>
<td>Int. Cal.—Math. 62</td>
<td>Chem. Tech. Ch. 79a, 79b, 3</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed.</td>
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<td>Mil. Sci. or Phys. Ed.</td>
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JUNIOR

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<tr>
<th>Autumn Quarter</th>
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<tbody>
<tr>
<td>Ind. Chem. 121</td>
<td>Ind. Chem. 122</td>
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<tr>
<td>English 4</td>
<td>Org. Chem. 128 or 132</td>
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<tr>
<td>Org. Chem. 181 or Thermo. &amp; Refrig.—M. E.</td>
<td>Mechanics—C.E. 181</td>
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<tr>
<td>188</td>
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<td>Ind. Seminar Chem.</td>
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</table>

Electives must in all cases be approved by the head of the department.
### IN CIVIL ENGINEERING

Leading to the degree of Bachelor of Science in Civil Engineering

The same for all curricula. See page 121.

#### SOPHOMORE

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
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<td>St. Eng.—M.E. 82</td>
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<td>St. Eng. Lab.—M.E. 83</td>
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<td>Economics</td>
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<tr>
<td>Physics 97</td>
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<td>Physics 98</td>
<td>5</td>
<td>Physics 99</td>
<td>5</td>
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<tr>
<td>R.R. Surv.—C.E. 22</td>
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<td>Higher Surv.—C.E. 22</td>
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<td>Field Eng.—C.E. 24</td>
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#### JUNIOR

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<th>Spring Quarter</th>
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<td>Dir. Cur.—E.E. 101</td>
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<td>Alt. Cur.—E.E. 121</td>
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<td>3</td>
<td>Calc.—Math. 62</td>
<td>3</td>
<td>Highways—C.E. 122</td>
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Electives must in all cases be approved by the head of the department.

#### SENIOR

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<th>Autumn Quarter</th>
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<th>Credits</th>
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<td>Structures—C.E. 124</td>
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<td>Thesis or electives</td>
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<td>Water Sup.—C.E. 128</td>
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<td>Business Law—B.A. 55.</td>
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<td>Business Law—B.A. 64</td>
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Electives must in all cases be approved by the head of the department.

### IN ELECTRICAL ENGINEERING

Leading to the degree of Bachelor of Science in Electrical Engineering

The same for all curricula. See page 121.

#### SOPHOMORE

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
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<th>Credits</th>
<th>Spring Quarter</th>
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<tr>
<td>Dif. Calc.—Math 61</td>
<td>3</td>
<td>Int. Calc.—Math 62</td>
<td>3</td>
<td>Int. Calc.—Math 63</td>
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<td>1</td>
<td>Shop 54</td>
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<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
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#### JUNIOR

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<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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<tr>
<td>D.C. Lab.—E.E. 110</td>
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<td>D.C. Lab.—E.E. 112</td>
<td>4</td>
<td>A.C. Lab.—E.E. 162</td>
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#### SENIOR

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<th>Autumn Quarter</th>
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<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<td>A.C.—E.E. 163</td>
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<td>Trans.—E.E. 105, 106 or A.C.—E.E. 198 or Thesels 188</td>
<td>4</td>
<td>Electives</td>
<td>14</td>
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<td>A.C.—E.E. 164</td>
<td>4</td>
<td>Thesis 186</td>
<td>4</td>
<td>Electives</td>
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<td>Physics 114</td>
<td>3</td>
<td>Mach. Des.—E.E. 133</td>
<td>5</td>
<td>Electives</td>
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</table>

Electives must in all cases be approved by the head of the department.
### IN MECHANICAL ENGINEERING

Leading to the degree of Bachelor of Science in Mechanical Engineering

#### FRESHMAN

The same for all curricula. See page 121.

#### SOPHOMORE

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<td>Cal.—Math. 63</td>
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<tr>
<td>Physics 97</td>
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<td>Physics 98</td>
<td>5</td>
<td>Physics 99</td>
<td>5</td>
</tr>
<tr>
<td>Mechanism—M.E. 81</td>
<td>3</td>
<td>El. Steam.—M.E. 82</td>
<td>3</td>
<td>Steam Lab.—M.E. 83</td>
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<td>Mil. Sci. or Phys. Ed.</td>
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</tbody>
</table>

#### JUNIOR

| Dir. Cur.—E.E. 101      | 4       | Alt. Cur.—E.E. 121     | 4       | Hydraulics—C.E. 142   | 5       |
| Dir. Cur. Lab.—E.E.     | 2       | Exp. Engr.—M.E. 122    | 3       | English 4              | 3       |
| Exp. Eng.—M.E. 132     | 3       | Eng. & Boll.—M.E. 124  | 3       | Exp. Engr.—M.E. 168   | 3       |
| Mach. Des.—M.E. 123     | 3       | Shop 106               | 1       | Mechanics—C.E. 152    | 3       |
| Electives               | 9       |                        |         | Shop 107               | 1       |

#### SENIOR

| Thermo. & Ref.—M.E.     | 2       | Heat. & Vent.—M.E. 182 | 3       | Steam Turb.—M.E. 179  | 3       |
| Electives               | 4       | Electives              | 5       | Thesis 310 or Research | 3       |
|                        | 16      |                        |         | Electives              | 15      |

### IN NAVAL ARCHITECTURE AND MARINE ENGINEERING

#### FRESHMAN

The same for all curricula. See page 121.

#### SOPHOMORE

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
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<td>5</td>
<td>Physics 99</td>
<td>5</td>
</tr>
<tr>
<td>Mechanism—M.E. 81</td>
<td>3</td>
<td>El. Steam.—M.E. 82</td>
<td>3</td>
<td>Steam Lab.—M.E. 83</td>
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<td>1%</td>
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</table>

#### JUNIOR

| Dir. Cur.—E.E. 101      | 4       | Alt. Cur.—E.E. 121     | 4       | Hydraulics—C.E. 142   | 5       |
| Dir. Cur. Lab.—E.E.     | 2       | Exp. Engr.—M.E. 122    | 3       | English 4              | 3       |
| Exp. Eng.—M.E. 132     | 3       | Eng. & Boll.—M.E. 124  | 3       | Exp. Engr.—M.E. 168   | 3       |
| Mach. Des.—M.E. 123     | 3       | Shop 106               | 1       | Mechanics—C.E. 152    | 3       |
| Shop 106                | 2       | Shop 105               | 1       | Shop 107               | 1       |

#### SENIOR

| Thermo. & Ref.—M.E.     | 2       | Heat. & Vent.—M.E. 182 | 3       | Steam Turb.—M.E. 179  | 3       |
| Electives               | 6       | Electives              | 5       | Thesis 210             | 4       |

Electives must in all cases be approved by the head of the department.
Leading to the degree of Bachelor of Science

The student must register in the chemical, civil, electrical or mechanical engineering department of the College of Engineering.

- Mathematics 51, 52, 53, 61, 62, 63, 12 ........................................... 26
- Physics 97, 98, 99 ................................................................. 15
- Chemistry 1, 2, 26, or 21, 22, 23 ............................................... 15
- English 4 (Certificates in English Composition) ................................... 3
- Military Science or Physical Education ............................................. 10
- Civil Engineering 1, 2, 11, 12, 13, 21, 131, 132 ................................ 24
- Electrical Engineering 101, 102, and 131, 123 or 161, 162 .................. 13
- Mechanical Engineering 81, 82, 88, 91, 92, 93 .................................. 15
- Business Administration 1 or 2, 11, 12, 54, 55, 167 ........................ 26
- Technical Electives (department in which the student is registered) ........ 21
- General Electives ....................................................................... 25

Total ......................................................................................... 192

Electives must in all cases be approved by the dean of the College of Engineering. 142 + 10

IN AERONAUTICAL ENGINEERING

Students who desire to major in aeronautical engineering should include the following courses in the technical and general electives of the curriculum for the bachelor of science degree in the College of Engineering. These courses may also be taken as electives in the curricula for the bachelor of science degree in chemical, civil, electrical and mechanical engineering.

- 111. Aerial Propellers.
- 121. Airplane Design.
- 141. Airships.
- 161. Aerial Transportation.

Electives must in all cases be approved by the dean of the College of Engineering.

COURSES

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).

ENGINEERING EXPERIMENT STATION

THE STAFF

HENRY SUEZALLO, Ph.D., (Columbia), LL.D., (California) ............... PRESIDENT
JOHN THOMAS CONDON, LL.M., (Northwestern) ............................... DEAN OF FACULTIES
CARL EDWARD MAGNUSON, Ph.D., (Wisconsin), E.E. (Minnesota), Electrical Engineering

HUGO WINKENWEDDE, M.F., (Yale) ............................................. DIRECTOR
MILTON ROBERTS, A.B., (Stanford) ............................................. Forest Products
HENRY KESTER BESN, Ph.D., (Columbia), Chemical Engineeringand Industrial Chemistry
CHARLES WILLIAM HARRIS, R.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 Standard and Tests

For description of the work of the Experiment Station see page 37.
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
William Pierce Goetsch, A.B. (Knox) .............................................................. Professor of Dramatic Art
Carl Freeling-Hwyn Gould, A.B. (Harvard) .................................................. Associate Professor of Architecture
*Walter Isaacs, B.S. (James Milliken) ............................................................ Associate Professor of Fine Arts
Francis Dickey, A.M. (Columbia) ........................................................................ Assistant Professor of Music
Moritz Rosen, Graduate (Warsaw Conservatory) ........................................... Assistant Professor of Music
Albert Franz Vining, (New York College, Stuttgart Conservatory, Lechatskly) .... Assistant Professor of Music
Carl Paulson, A.M. (Harvard) ........................................................................... Assistant Professor of Music
Robert Fulton McClelland, (Massachusetts Institute of Technology) .............. Instructor in Architecture
George C. Kirchen, (Leipzig) .............................................................................. Instructor in Music
Harold Odell Sexsmith, (Armeur Institute), (Chicago Art Institute) ............... Instructor in Music
Mrs. Louise Van Oel. ...................................................................................... Instructor in Architecture
Albert Foster Adams, ..................................................................................... Instructor in Music
*Annette Edens, (New York School of Fine and Applied Arts, Columbia) ...... Instructor in Drawing
Eleanor French, B.Mus. (Washington), M.A. (Columbia) ................................ Instructor in Music
Ambrose Patterson, B.Mus. (Washington) ..................................................... Associate in Fine Arts
Mrs. Eugenia Workman ..................................................................................... Associate in Fine Arts
James A. Wehn, ............................................................................................... Associate in Modeling and Sculpture
Ada Tipton, B.Mus (Simpson) .......................................................................... Instructor in Music
Glenn Hughes, A.M. (Washington) ................................................................. Instructor in Dramatic Art
Eleanor Campbell, ............................................................................................ Instructor in Design
HeLEN Rhodes, (Columbia) .............................................................................. Acting Instructor in Drawing
Ella Jane Simmons, A.M. (Columbia) ............................................................... Instructor in Fine Arts
Anna Elspeth Storm ........................................................................................ Instruction in Design
HeLEN Frazier, B.Mus. (Washington) .............................................................. Assistant in Music
Louise Dow Benton, B.Mus. (Washington) ..................................................... Assistant in Music
Florence Bishop Wilson, B.Mus. (Washington) .............................................. Assistant in Music
Clara Catherine Bunch, A.M. (Washington) ..................................................... Assistant in Music

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 Professor of Hygiene
Charless Church Moore, C.E., M.S. (Lafayette), M.C.E. (Cornell) .................. Professor of Civil Engineering
Thomas K. Sidet, Ph.D. (Chicago) .................................................................... Associate Professor of Latin and Greek
Charles Goggo, Ph.D. (Wisconsin) .................................................................. Associate Professor of Romance Languages
Robert Max Garrett, Ph.D. (Munich) ............................................................... Associate Professor of English
Eric Temple Bell, Ph.D. (Columbia) ................................................................. Associate Professor of Mathematics
Harvey Bruce Denison, A.B. (Oxford) ............................................................. Assistant Professor of Greek
Gino Antonio Ratti, Ph.D. (Grenoble) ............................................................... Assistant Professor of French
Ernst Otto Eckelman, Ph.D. (Heidelberg) ....................................................... Assistant Professor of German
Samuel Herbert Anderson, Ph.D. (Illinois) ..................................................... Assistant Professor of Physics
Mary Emma Gross, A.M. (Teachers' College, Columbia) ............................. Director of Physical Education for Women
Curt John Ducas, Ph.D. (Harvard) ................................................................. Assistant Professor of Philosophy
Leslie Spire, Ph.D. (Columbia) ....................................................................... Assistant Professor of Anthropology
Alexander Chippen Roberts, A.M. (Washington) ........................................... Associate in Education

*Absent on leave, 1922-1923.
This college comprises the departments of architecture, music, painting, sculpture, design, and dramatic art. In the department of architecture a curriculum of four years is offered leading to the degree of bachelor of architecture; in music there are curricula of four years leading to the degree of bachelor of music, with major in applied music, composition, or public school music, and to the degree of bachelor of arts in music. Curricula of four years are offered leading to the degree of bachelor of fine arts, with a major in painting and design, interior decoration, public school drawing, or music and drawing. Two-year curricula lead to certificates of proficiency for supervisors of art and music. The department of dramatic art offers major courses in the study of the drama and dramatic interpretation.

**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 college 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.

**Methods of Instruction.**—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 draftsman 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.

**Requirements for Admission**

Full information regarding requirements for admission, registration, and expenses may be found on pages 40, 48, 49.

It is advisable that students intending to enter the course in architecture present credits for preparatory work in trigonometry and freehand drawing. Beginning in 1921 two years of a foreign language will be included among specific entrance requirements, to be made up in the University without credit, if they have not been taken in high school.

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.
FOR THE BACHELOR OF MUSIC DEGREE WITH A MAJOR IN APPLIED MUSIC
(Piano, Violin, Voice, Violoncello, Organ)

FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Music 1 (Apprec.)</td>
<td>2</td>
<td>Music 2</td>
<td>2</td>
<td>Music 3</td>
<td>2</td>
</tr>
<tr>
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<td>5</td>
<td>2</td>
<td>9</td>
<td>2</td>
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<tr>
<td>7 (Sight Singing)</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>15</td>
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<td>14 (Ear Training)</td>
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<td>15</td>
<td>2</td>
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<td>Phys. Ed. or Mil. Sci.</td>
<td>1%</td>
<td>Phys. Ed. or Mil. Sci.</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>16%</td>
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<td>16%</td>
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<td>16%</td>
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</table>

SECOND YEAR

| Music 10 or elective   | 1       | MUSIC 11 (or elective) | 1       | MUSIC 12 (or elective) | 1       |
| 89 (Applied)           | 3       | 69              | 3       | 70              | 3       |
| 51 (Harmony)           | 3       | 52              | 3       | 53              | 3       |
| Pol. or Soc. Sci.      | 5       | Physics 50      | 5       | Physics 55       | 5       |
| Foreign Language       | 5       | Foreign Language | 3       | Foreign Language | 3       |
| Phys. Ed. or Mil. Sci. | 1%      | Phys. Ed. or Mil. Sci. | 1% | Phys. Ed. or Mil. Sci. | 1% |
|                        | 18%     |                | 16%     |                | 16%     |

THIRD YEAR

| MUSIC 10 (or elective) | 1       | MUSIC 11 (or elective) | 1       | MUSIC 12 (or elective) | 1       |
| 119 (Applied)         | 3       | 119             | 3       | 120             | 3       |
| 101 (Adv. Harmony)    | 3       | 102             | 3       | 103             | 3       |
| 104 (Adv. History)    | 2       | 105             | 2       | 106             | 2       |
| 107 (Counterpoint)    | 2       | 108             | 2       | 109             | 2       |
| 110 (Instr. Form)     | 3       | Foreign Language | 3       | Foreign Language | 3       |
| Foreign Language      | 3       |                | 16      |                | 16      |
|                        | 16%     |                | 16%     |                | 16%     |

FOURTH YEAR

| MUSIC 10 (or elective) | 1       | MUSIC 11 (or elective) | 1       | MUSIC 12 (or elective) | 1       |
| 109 (Applied)         | 3       | 109             | 3       | 170             | 3       |
| 107 (Composition)     | 2       | 107             | 2       | 150             | 2       |
| 151 (Adv. Appr.)      | 2       | 152             | 2       | 153             | 2       |
| Electives              | 8       | Electives       | 8       | Philosophy 129  | 5       |
|                        | 16      |                | 16      |                | 15      |
|                        | 16%     |                | 16%     |                | 16%     |

FOR THE BACHELOR OF MUSIC DEGREE WITH A MAJOR
IN COMPOSITION

FIRST YEAR

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<thead>
<tr>
<th>Autumn Quarter</th>
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<th>Winter Quarter</th>
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<th>Spring Quarter</th>
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<td>Music 2</td>
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<td>Music 3</td>
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<tr>
<td>4 (History)</td>
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<td>5</td>
<td>2</td>
<td>8</td>
<td>2</td>
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<tr>
<td>14 (Ear Training)</td>
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<td>2</td>
<td>15</td>
<td>3</td>
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<tr>
<td>51 (Beg. Harm'y)</td>
<td>3</td>
<td>52</td>
<td>3</td>
<td>53</td>
<td>3</td>
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<tr>
<td>31 (Applied)</td>
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<td>32</td>
<td>3</td>
<td>33</td>
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<tr>
<td></td>
<td>16%</td>
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*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.
## UNIVERSITY OF WASHINGTON

### SECOND YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
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<th>Spring Quarter</th>
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<td>$Music 11 (Chor.) or elect</td>
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<td>$Music 12 (Chor.) or elect</td>
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<tr>
<td>101 (Adv. Hist.)</td>
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<td>102</td>
<td>2</td>
<td>103</td>
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<tr>
<td>107 (Counterpoint)</td>
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<td>108</td>
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<td>109</td>
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<td>Foreign Language</td>
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<tr>
<td>Pol. or Soc. Science</td>
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### THIRD YEAR

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<td>107 (Composition)</td>
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<td>119</td>
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### FOURTH YEAR

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<td>120</td>
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<td>191 (Adv. Appr.)</td>
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<td>138</td>
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<td>102 (Polyphonic)</td>
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<td>161</td>
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<td>203 (Adv. Comp.)</td>
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<td>204 (Orchestr.)</td>
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<td>Philosophy 120 (Aesth.)</td>
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## FOR THE BACHELOR OF MUSIC DEGREE WITH A MAJOR

### IN PUBLIC SCHOOL MUSIC

### FIRST YEAR

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<th>Autumn Quarter</th>
<th>Credits</th>
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<td>6 (History)</td>
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<td>7 (Sight Singing)</td>
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<tr>
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<td>16%</td>
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### SECOND YEAR

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### THIRD YEAR

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*Only those who have successfully completed the work in Mus. 11 will be eligible for registration in Mus. 12.*
# COLLEGE OF FINE ARTS

## FOURTH YEAR

<table>
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<td>Music 109 (Counterpoint) 2</td>
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<td>112 (Instr. Forms) 2</td>
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<td>164 (Ed.&amp; Superv.) 2</td>
<td>155 (Ed.&amp; Superv.) 2</td>
<td>156 (Ed.&amp; Superv.) 2</td>
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Total: 15 / 15 / 15

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FOR THE DEGREE OF BACHELOR OF ARTS IN MUSIC

### FIRST YEAR

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<td><em>Music, elective</em> 3</td>
<td><em>Music, elective</em> 3</td>
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<tr>
<td>English Composition 3</td>
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<td>Foreign Language 5</td>
<td>Foreign Language 5</td>
<td>Foreign Language 5</td>
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<td>Chemistry, Botany or Zoology 5</td>
<td>Education 110 (Instr. Forms) 2</td>
<td>Philosophy 120 (Aesth.) 5</td>
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<td>Phys. Ed. or Mil. Sc. 1%</td>
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Total: 17% / 17% / 17%

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### SECOND YEAR

<table>
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<th>Autumn Quarter Credits</th>
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<td><em>Music, elective</em> 5</td>
<td><em>Music, elective</em> 5</td>
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<tr>
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<td>Physics 61-62 5</td>
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<tr>
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Total: 16% / 16% / 16%

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### THIRD YEAR

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<tr>
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<td>Liberal Arts, elective • 10</td>
<td>English Composition 3</td>
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<tr>
<td>Liberal Arts, elective 5</td>
<td>*Liberal Arts, elective • 10</td>
<td>Liberal Arts, elective 5</td>
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</table>

Total: 16 / 16 / 16

---

### FOURTH YEAR

<table>
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<tr>
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<th>Spring Quarter Credits</th>
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<tr>
<td>Music, elective 5</td>
<td>Music, elective 5</td>
<td>Music, elective 5</td>
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<td>*Liberal Arts, elective • 10</td>
<td>*Liberal Arts, elective • 10</td>
<td>*Liberal Arts, elective • 10</td>
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</table>

Total: 15 / 15 / 15

---

A total of forty hours of foreign language pursued either in the high school or in the University is required for a degree in the College of Fine Arts. If a student has finished this work in the high school, he shall substitute approved electives in the University. If he presents no foreign language for admission to the University, he must supply the deficiency in addition to the hours demanded by the respective curricula, without credit.

Students of the public school music course are required to take Education 145 in the senior year. This practice teaching substitutes for the senior thesis.

---

### CURRICULA IN ARCHITECTURE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE

### FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter Credits</th>
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<th>Spring Quarter Credits</th>
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<tbody>
<tr>
<td>Hist. &amp; Elem. Arch. 1</td>
<td>Hist. &amp; Elem. Arch. 2</td>
<td>Hist. &amp; Elem. Arch. 3</td>
</tr>
<tr>
<td>Arch. Drawing 4</td>
<td>Arch. Drawing 5</td>
<td>Arch. Drawing 6</td>
</tr>
<tr>
<td>Descri. Geom. 7</td>
<td>Shades &amp; Shadows 8</td>
<td>Perspective 9</td>
</tr>
<tr>
<td>Statics 47</td>
<td>Statics 48</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>Freehand Draw. 10</td>
<td>Freehand Draw. 11</td>
<td>Freehand Draw. 12</td>
</tr>
<tr>
<td>English 4</td>
<td>English 5</td>
<td>English 6</td>
</tr>
<tr>
<td>Phys. Ed. or Mil. Sc. 1%</td>
<td>Phys. Ed. or Mil. Sc. 1%</td>
<td>Phys. Ed. or Mil. Sc. 1%</td>
</tr>
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</table>

Total: 17% / 17% / 17%

---

*(1) Among the music courses indicated above the following are required: 1, 2, 3, 4, 5, 6, 8, 9, 11, 15, 16, 51, 52, 53, 101, 102, 103.

*Liberal Arts electives for the junior and senior years should be in Upper Division courses.*
SECOND YEAR

Autumn Quarter Credits Winter Quarter Credits Spring Quarter Credits
Hist. & Elem. Arch. 51 2 Hist. & Elem. Arch. 52 2 Hist. & Elem. Arch. 53 2
Arch. Design 54 8.6 Arch. Design 55 6 Arch. Design 56 6
Bldg. Constr. 60 2 Bldg. Constr. 61 2 Bldg. Constr. 62 2
P.S.&D. 72 2 P.S.&D. 73 2 P.S.&D. 74 2
Mathematics 57 2 Mathematics 58 2 Mathematics 59 2
Foreign Language 1 5 Foreign Language 2 5 Foreign Language 3 5
Phys. Ed. or Mill. Sci. 1.5 Phys. Ed. or Mill. Sci. 1.5 Phys. Ed. or Mill. Sci. 1.5

Note.—Students electing structural option will, in spring quarter, junior year, omit Arch. 103, 114, and register for Physics 3-5 hours.

THIRD YEAR

Hist. Arch. 101 2 Hist. Arch. 102 2 Hist. Arch. 103 2
Arch. Design 104 5 Arch. Design 105 5 Arch. Design 106 5
Mechanics (C.E.) 131 3 Mechanics (C.E.) 132 3 Mechanics (C.E.) 133 3
Physics (Gen.) 1 4 Physics (Gen.) 2 4 Physics (Gen.) 3 4

FORTH YEAR

Arch. Design 154 5 Arch. Design 155 5 Arch. Design 156 5
Freehand Draw. 157 7.5 Freehand Draw. 158 8.5 Freehand Draw. 159 7.5
P.S.&D. 16 1 P.S.&D. 17 1 P.S.&D. 18 1
Steam Eng. (H.I.B.I.) 83 3 Heat & Vent. (M.E.) 182 3 Heat & Vent. (M.E.) 183 3
Sanitation & Plbg. 115 2 Spec. & Office Prac. (Arch. 118) 2 Spec. & Office Prac. 119 2

FOURTH YEAR

Structure Engineering Option
Frame Struc. (C.E.) 134 3 Bridges (C.E.) 161 5 P.I. Survey (C.E.) 21 3
Steam Eng. (M.E.) 84 3 Alt. Curr. (E.E. 121-122) 6 Wood Anal. (For. 103) 2
Dir. Curr. (E.E. 101-102) 10.5 6 Heat & Vent. (M.E.) 182 3
Bus. Law (Law) 54 3 Bus. Law 56 3 Bus. Law 58 3
Sanitation Plbg. (Arch. 115) 2

FOR THE DEGREE OF BACHELOR OF FINE ARTS WITH A MAJOR IN PAINTING AND DESIGN

FIRST YEAR

Autumn Quarter Credits Winter Quarter Credits Spring Quarter Credits
P.S.D. (Freehand) 5 2 P.S.D. (Freehand) 0 2 P.S.D. (Freehand) 7 3
*P.S.D. (Art Struc.) 9 4 *P.S.D. (Art Struc) 10 4 *P.S.D. (Art Struc) 11 4
Art. Apprec. 18 1 Art. Apprec. 17 1 Art. Apprec. 16 1
English Composition 3 English Composition 3 English Composition 3
Foreign Language 5 Electives 5 Electives 5
Phys. Ed. or Mill. Sci. 1.5 Phys. Ed. or Mill. Sci. 1.5 Phys. Ed. or Mill. Sci. 1.5

SECOND YEAR

P.S.D. (Illustration) 56 3 P.S.D. (Illustration) 57 3 P.S.D. (Illustration) 58 3
Greek Art 6 3 Greek Art 6 7 Greek Art 6 10
Foreign Language 5 Electives 3 Electives 3 Electives 3
P.S.D. (Illustration) 56 3 P.S.D. (Illustration) 57 3 P.S.D. (Illustration) 58 3
Greek Art 6 3 Greek Art 6 7 Greek Art 6 10
Foreign Language 5 Electives 3 Electives 3 Electives 3
P.S.D. (Illustration) 56 3 P.S.D. (Illustration) 57 3 P.S.D. (Illustration) 58 3
Greek Art 6 3 Greek Art 6 7 Greek Art 6 10
Foreign Language 5 Electives 3 Electives 3 Electives 3

Electives 3 Electives 3 Electives 3

*The course in art structure comprises the following: Freshman, principles of design; sophomore, needle designing, woodblock printing, design; junior, pottery, interior decorating, posters, ceramics, jewelry, landscape composition, design.
## College of Fine Arts

### Third Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
<td>P.S.D. (Art Struct.)</td>
<td>5... 3</td>
</tr>
<tr>
<td>P.S.D. (Art Struct.)</td>
<td>9... 4</td>
</tr>
<tr>
<td>Art Appreciation</td>
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</tr>
<tr>
<td>Political Science</td>
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<tr>
<td>Electives</td>
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</tr>
<tr>
<td>P.S.D. (Art Struct.)</td>
<td>10... 4</td>
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<tr>
<td>P.S.D. (Illustration)</td>
<td>57... 3</td>
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<td>Electives</td>
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<tr>
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### Fourth Year

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<tr>
<td>P.S.D. (Life 160 or Mural Dec. 163)</td>
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<th>Credits</th>
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<tr>
<td>Mural Dec. 160</td>
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### For the Degree of Bachelor of Fine Arts

**Public School Drawing**

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<td>P.S.D. (Illustration)</td>
<td>56... 3</td>
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**Second Year**

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<th>Credits</th>
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<tr>
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<td>108... 3</td>
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<tr>
<td>Greek Art</td>
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<tr>
<td>Education</td>
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**Third Year**

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### Fourth Year

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<tr>
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**Education**

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<td>5... 3</td>
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<tr>
<td>P.S.D. (Art Struct.)</td>
<td>9... 4</td>
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<tr>
<td>English Composition</td>
<td>8</td>
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<tr>
<td>Foreign Language</td>
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<td>Phys. Ed. or Mil. Sc.</td>
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**Second Year**

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
<td>P.S.D. (Illustration)</td>
<td>107... 3</td>
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<tr>
<td>Greek Art</td>
<td>1</td>
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<tr>
<td>Education</td>
<td>5</td>
</tr>
<tr>
<td>Elective</td>
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<table>
<thead>
<tr>
<th>Winter Quarter</th>
<th>Credits</th>
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<tbody>
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<td>P.S.D. (Art Struct.)</td>
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<tr>
<td>P.S.D. (Art Struct.)</td>
<td>107... 3</td>
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**Third Year**

<table>
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<tr>
<td>P.S.D. (Art Struct.)</td>
<td>107... 3</td>
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<tr>
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**Fourth Year**

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<tr>
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<tbody>
<tr>
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<td>Education</td>
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<td>Elective</td>
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### For the Degree of Bachelor of Fine Arts With a Major in Interior Decoration

**First Year**

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<td>5... 3</td>
</tr>
<tr>
<td>P.S.D. (Art Struct.)</td>
<td>9... 4</td>
</tr>
<tr>
<td>English Composition</td>
<td>8</td>
</tr>
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<td>Foreign Language</td>
<td>5</td>
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<tr>
<td>Phys. Ed. or Mil. Sc.</td>
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**Second Year**

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
<td>P.S.D. (Art Struct.)</td>
<td>107... 3</td>
</tr>
<tr>
<td>P.S.D. (Art Struct.)</td>
<td>108... 3</td>
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<tr>
<td>Education</td>
<td>5</td>
</tr>
<tr>
<td>Elective</td>
<td>5</td>
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<table>
<thead>
<tr>
<th>Winter Quarter</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>P.S.D. (Art Struct.)</td>
<td>109... 3</td>
</tr>
<tr>
<td>P.S.D. (Art Struct.)</td>
<td>110... 3</td>
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<tr>
<td>Greek Art</td>
<td>1</td>
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<tr>
<td>Education</td>
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## Notes

*Among the courses in Education, Practice Teaching must be included in the senior year.*
## FOR THE DEGREE OF BACHELOR OF FINE ARTS WITH A MAJOR IN MUSIC AND DRAWING

<table>
<thead>
<tr>
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<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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<tbody>
<tr>
<td>English Composition</td>
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<td>5</td>
<td>Electives</td>
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### UNIVERSITY OF WASHINGTON

### SECOND YEAR

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<td>Arch. (History)</td>
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<td>Arch. (Dimension Dr.)</td>
<td>13</td>
<td>2</td>
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<tr>
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<td>Phys. Ed. or Mil. Sci.</td>
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<td>1%</td>
<td>Electives</td>
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### THIRD YEAR

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<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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<tbody>
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<td>5</td>
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<td>Fine or Lib. Arts Elec.</td>
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<td>1</td>
<td>Fine or Lib. Arts Elec.</td>
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<td>H. E. House Furn.</td>
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### FOURTH YEAR

### FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Music 4 (Hist. of Music)</td>
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<tr>
<td>Music 7 (Sight Singing)</td>
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<tr>
<td>Lab. Science</td>
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<tr>
<td>English Composition</td>
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<tr>
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### SECOND YEAR

<table>
<thead>
<tr>
<th>Winter Quarter</th>
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<tbody>
<tr>
<td>Music 8 (Hist. of Music)</td>
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</tr>
<tr>
<td>Music 9 (Sight Singing)</td>
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<tr>
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<tr>
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### THIRD YEAR

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<td>Music 12 (School Music)</td>
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### FOURTH YEAR

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<td>Music 18 (Art Apprec.)</td>
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<tr>
<td>Music 19 (Art Apprec.)</td>
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<tr>
<td>Music 20 (Music Apprec.)</td>
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</tr>
<tr>
<td>Music 21 (Music)</td>
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### NOTES

*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

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<td>English Composition</td>
<td>3 ••</td>
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<td>10 •••</td>
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<td>11 •••</td>
<td>Art Appreciation</td>
<td>12 •••</td>
</tr>
<tr>
<td>Electives</td>
<td>5 •••••</td>
<td>Electives</td>
<td>5 ••••</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>16 ••••</td>
<td><strong>Total</strong></td>
<td>16 ••••</td>
<td><strong>Total</strong></td>
<td>16 ••••</td>
</tr>
</tbody>
</table>

### SECOND YEAR

| P.S.D. (Freehand) | 56 ••• | P.S.D. (Freehand) | 57 ••• | P.S.D. (Freehand Cast) | 58 ••• |
| Psychology | 5 ••• | Education | 5 ••• | Education | 5 ••• |
| Education 190-1 | 3 •••• | Electives | 3 •••• | Electives | 3 •••• |
| **Total** | 15 •••• | **Total** | 15 •••• | **Total** | 15 •••• |

### CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF ARTS IN DRAMATIC ART

### FIRST YEAR

<table>
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<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
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<tr>
<td>Dramatic Art, elective</td>
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</tr>
<tr>
<td>English Composition</td>
<td>3 ••</td>
<td>English Composition</td>
<td>3 ••</td>
<td>English Composition</td>
<td>3 ••</td>
</tr>
<tr>
<td>Foreign Language</td>
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<td>5 •••</td>
<td>Foreign Language</td>
<td>5 •••</td>
</tr>
<tr>
<td>Chem., Botany or Zool.</td>
<td>5 •••</td>
<td>Chem., Botany or Zool.</td>
<td>5 •••</td>
<td>Elective</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td>17¾ •••</td>
<td><strong>Total</strong></td>
<td>17¾ •••</td>
<td><strong>Total</strong></td>
<td>17¾ •••</td>
</tr>
</tbody>
</table>

### SECOND YEAR

| Dramatic Art, elective | 5 ••• | Dramatic Art, elective | 5 ••• | Dramatic Art, elective | 5 ••• |
| Arch. (Hist.) | 1 ••• | Arch. (Hist.) | 1 ••• | Arch. (Hist.) | 1 ••• |
| Foreign Language | 5 ••• | Electives | 5 ••• | Pol. or Soc. Science | 5 ••• |
| Electives | 2 ••• | Phys. Ed. or Mil. Sci. | 1¾ ••• | Mil. Sci. or Phys. Ed. | 1¾ ••• |
| **Total** | 17¾ ••• | **Total** | 15¾ ••• | **Total** | 15¾ ••• |

### THIRD YEAR

| Dramatic Art, elective | 6 ••• | Dramatic Art, elective | 6 ••• | Dramatic Art, elective | 6 ••• |
| Psychology | 5 ••• | Liberal Arts, electives | 10 ••• | Liberal Arts, electives | 10 ••• |
| Liberal Arts, electives | 5 ••• | **Total** | 16 ••• | **Total** | 16 ••• |

### FOURTH YEAR

| Dramatic Art, elective | 5 ••• | Dramatic Art, elective | 5 ••• | Dramatic Art, elective | 5 ••• |
| Liberal Arts, electives | 10 ••• | Liberal Arts, electives | 10 ••• | Liberal Arts, electives | 10 ••• |
| **Total** | 15 ••• | **Total** | 15 ••• | **Total** | 15 ••• |

### Courses

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index.)

† Liberal Arts electives for the junior and senior years should be in Upper Division courses.
COLLEGE OF FISHERIES

THE FACULTY

HENRY SUZALLO, Ph.D. (Columbia), LL.D. (California), PReSIDENT

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

JOHN N. COBB, Professor of Fisheries, DIRECTOR

DONALD R. CRAWFORD, B.S. (Washington), Instructor in Fish Culture

CLARENCE L. ANDERSON, B.S. (Washington), Instructor in Fisheries

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

FREDERICK MORGAN FISHEL, Ph.D. (Yale), Professor of English and Dean of the Graduate School

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

CHARLES WILLIS JOHNSON, Ph.C., Ph.D. (Michigan), Professor of Pharmaceutical Chemistry, and State Chemist

THEODORE CHRISTIAN EYTH, Ph.D. (Chicago), Professor of Botany

ROBERT EUGENE MORITZ, Ph.D. (Nebraska), Ph.D. (Strasbourg), Professor of Mathematics

HARVEY LANTZ, A.M. (DePauw), LL.B. (Kent), Professor of Law

EVERETT OWEN EASTWOOD, C.E., A.M. (Virginia), S.B. (Massachusetts Institute of Technology), Professor of Mechanical Engineering

HENRY KIRKLAND BIXON, Ph.D. (Columbia), Professor of Chemical Engineering

JOHN WENZEL, Ph.D. (Wisconsin), Dr.P.H. (Harvard), Professor of Bacteriology

STEPHENSON SMITH, Ph.D. (Pennsylvania), Professor of Psychology

LESLIE JAMES AYER, J.D. (Chicago), Professor of Law

STEPHEN IVAN MILLER, A.B. (Stanford), LL.B. (Michigan), Professor of Economics and Dean of the College of Business Administration

GEOGRaH MCPHAIL SMITH, Ph.D. (Freiburg), Professor of Inorganic Chemistry

WILLIAM MAURICE DENN, Ph.D. (Illinois), Professor of Organic Chemistry

GEORGE BURLINGTON RUG, Ph.D. (Chicago), Associate Professor of Botany

WILLIAM DANIEL MOHRART, Ph.D. (Michigan), Associate Professor of Business Administration

GEOGRaH SAMUEL WILSON, B.S. (Nebraska), Associate Professor of Mechanical Engineering

JOHN LOCKE WORCESTER, M.D. (Medical School, University of Alabama), Associate Professor of Anatomy

WILLIAM EDWARD COX, A.M. (Texas), Associate Professor of Business Administration

HERMAN VANCE TARTT, B.S. (Oregon Agricultural College), Associate Professor of Chemistry

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

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

FRED HARVEY HEMATH, Ph.D. (Yale), Assistant Professor of Chemistry

ELDEN VESTEY LYNCH, Ph.D. (Wisconsin), Assistant Professor of Pharmacology and Chemistry

HOMACE GUNTHER, Ph.D. (Kansas), Assistant Professor of Zoology

THOMAS G. THOMPSON, Ph.D. (Washington), Assistant Professor of Chemistry

JEAN ROBIN WILKES, Ph.C., B.S. (Washington), Assistant State Chemist and Bacteriologist

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Purpose and Location

The College of Fisheries was established in 1919. It has a two-fold purpose: First, to afford instruction in the principles and practices of fishery; second, to promote the interest of fisheries in the state of Washington and in the United States by encouraging the right use of fishery resources.

The college has exceptional advantages in its location. The University campus is located on the shores of Lakes Washington and Union, which bodies of water are connected by canals with each other and with Puget Sound. In the latter are carried on extensive commercial fisheries for fishes, oysters, clams, crabs, etc., while fleets of vessels with headquarters at Seattle and other cities on the Sound, carry on extensive fisheries in the ocean adjacent to the Washington coast, and on the fishing banks along the Alaska coast. Numerous canneries, smokehouses, cold storage plants, fertilizer plants, etc., are to be found in Seattle and other places on the Sound. A number of fish hatcheries are owned and operated in the state of Washington by the federal, state and county governments. At Friday Harbor the University owns and operates an excellent marine biological station. These many advantages present unrivaled opportunities for the studying of the fisheries, aquatic life and fish culture.

Requirements for Admission and Graduation

Full information regarding requirements for admission, registration, and expenses may be found on pages 40, 48, 49.

Degrees.—The four-year curricula in the College of Fisheries lead to the degree of bachelor of science (B.S.) in fisheries.

The degree of master of science (M.S.) in fisheries will be conferred upon any graduate of the four-year curricula who has completed at least one year of graduate work and has presented a satisfactory thesis with the grade of A. or B. A graduate of any other institution of equal rank will be given full graduate standing, but the candidate must have a satisfactory knowledge of zoology, chemistry, bacteriology and botany. The selection of work for this degree must, in each case, be approved by the director of the 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.

Facilities for Study

Shellfish Culture.—On Puget Sound and in Hood Canal are located numerous private oyster beds where cultivation has been practiced for some years. The state also owns certain oyster reserves which will be utilized for experimental purposes. These are all within reasonable distance of Seattle and are available for study purposes by the students of the College.

Fishery Operations.—Trap netting, purse and haul seining, gill netting, trolling, hand and long-line fishing, oyster gathering, clam digging, kelp harvesting, and other forms of commercial fishing, are carried on either in the harbor of Seattle, or waters adjacent, during the proper seasons, and can be observed and studied on the ground.

Commercial Plants.—In or near Seattle and available for study are plants for the canning of salmon, pilchards, clams, etc.; the mildcuring of salmon; the pickling of salmon, herring, sablefish, etc.; the freezing and cold storage of salmon, halibut, sablefish, herring, steelhead trout, and smelt; the smoking
of salmon, halibut, sablefish, herring, sturgeon, etc.; the extraction of oils from fishery products and the preparation of fish meal and fertilizer from the residue; and the extraction of chemical products from kelp and other aquatic plants. Two large can-making establishments, several plants manufacturing canning machinery, and a number of others supplying various machines and supplies for the fisheries, are also located in Seattle. Such of these industries as are not in Seattle are conveniently situated on Puget Sound, and the transportation costs to them would be very low.

**Aquarium.**—In the Fisheries building of the State Fisheries Board, at Fourth avenue and Seneca street, Seattle, a working aquarium is available for studying purposes.

**Laboratories.**—For description of fisheries laboratories see page 31.

**Field Excursions.**—Much of the instruction in fish culture and fisheries technology is given in the field, necessitating frequent excursions to nearby hatcheries, fishing camps, oyster beds, and industrial plants, and also the use in nearby waters of the varied fishery apparatus owned by the College. The expenses of these excursions will be comparatively small.

**Summer Work.**—Students of fisheries are urged to spend their summer vacation in some line of practical work connected with the fishery industry. As the college is convenient to the more important fisheries and hatcheries of the Northwest coast and Alaska, ample opportunity is afforded for summer employment. Students not only acquire valuable experience in this way, but earn a considerable portion of their university expenses.

**Fishery Club.**—The Fishery Club is an organization open to all students of the College of Fisheries. It aims: (1) To secure full acquaintance and good fellowship among students and instructors; (2) to keep in touch with everyday problems in fisheries, and the men who are doing things worth while in this industry, and (3) to interest the public in the College of Fisheries and in the fishery problems of the state and nation.

**Short Courses for Fishermen and Fish Culturists.**—These courses will be given during each winter quarter, provided there are a 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 courses is without examinations. Examinations will be given in the various subjects at the close of the course and a certificate showing the work satisfactorily covered issued to each student.

**Outline for Curricula**

**Choice of Electives.**—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.

For specialization in fisheries administration, the following electives are recommended: Fisheries 4, 5; business law (B.A. 54, 55); money and banking (B.A. 57); economics of markets (B.A. 106); business organization (B.A. 105); plant management (B.A. 167); advertising (B.A. 137); accounting (two quarters, B.A. 11-12); admiralty law (Law 165); psychology 1 and 121; modern language (Spanish or German preferred); business statistics (B.A. 118).

For specialization in fisheries technology and fish culture: Fisheries 4, 5; engineering drawing (C.E. 1, 2); mechanical engineering 82, 198; chemistry and food analysis 105-106-107; industrial chemistry 123; physiological
College of Fisheries

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chemistry 144; chemistry of nutrition 193; refrigeration (M.E. 183); economic marine botany 130; public hygiene (Bact. 103); modern language (Spanish or German preferred); trigonometry (Math. 4); elements of statistical methods (Math. 13); business statistics (B.A. 118); oceanography (Geol. 114); aquatic botany 53; parasitology (Zool. 107).

I. FISH CULTURE

FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>Zoology 1</td>
<td>5</td>
<td>Zoology 2</td>
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<td>Zoology 102</td>
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<tr>
<td>Fisheries 1</td>
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<td>Fisheries 2</td>
<td>2</td>
<td>Chemistry 3 or 23</td>
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<td>Chemistry 1 or 21</td>
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<td>Chemistry 2 or 22</td>
<td>5</td>
<td>Economics 2</td>
<td>3</td>
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<tr>
<td>English 4</td>
<td>3</td>
<td>English 5</td>
<td>3</td>
<td>Fisheries 6</td>
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<td>Mil. Sci. or Phys. Ed.</td>
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<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
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</table>

SECOND YEAR

| Fisheries 3   | 5       | *Physics 48  | 5       | Zoology 108 | 5       |
|               |         | Electives    | 10      | Electives   | 10      |
| Electives     | 5       | Mil. Sci. or Phys. Ed. | 1½ | Mil. Sci. or Phys. Ed. | 1½ |

THIRD YEAR

| Fisheries 101 | 5       | Fisheries 102 | 5       | Fisheries 103 | 5       |
| Bacteriology 101 | 5       | Bacteriology 102 | 5       | Fisheries 105 | 5       |
| Electives      |         |              |         | Electives    | 7       |

FOURTH YEAR

| Fisheries 150 | 5       | Fisheries 151 | 5       | Fisheries 152 | 5       |
| Fisheries 117 | 5       | Electives     | 10      | Electives    | 10      |

II. FISHERIES TECHNOLOGY

FIRST YEAR

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<th>Autumn Quarter</th>
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<th>Credits</th>
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<td>5</td>
<td>Zoology 111</td>
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<td>2</td>
<td>Economics 2</td>
<td>3</td>
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<td>Fisheries 6</td>
<td>2</td>
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<td>English 4</td>
<td>3</td>
<td>English 5</td>
<td>3</td>
<td>Electives</td>
<td>5</td>
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<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
</tr>
</tbody>
</table>

SECOND YEAR

| Chemistry 128 | 5       | *Physics 48   | 5       | Electives    | 10      |
| Fisheries 3   | 5       | Electives     | 5       | Mil. Sci. or Phys. Ed. | 1½ |

THIRD YEAR

| Bacteriology 101 | 5       | Bacteriology 102 | 5       | Fisheries 107 | 5       |
| Fisheries 106 | 5       | Fisheries 104 | 5       | Fisheries 105 | 5       |
| Electives      | 5       | Pharmacy 10     | 1       | Fisheries 115 | 3       |
| Electives      |         |              |         | Electives    | 3       |

FOURTH YEAR

| Fisheries 155 | 5       | Fisheries 156 | 5       | Fisheries 157 | 5       |
| Electives     | 10      | Electives     | 10      | Electives    | 10      |

*If the student has taken one year of physics in high school he will substitute electives for Physics 47 and 48.
For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).

**WINTER SESSION FOR FISHERMEN**

The third annual short session for fishermen will open on January 2, 1923, continuing until about March. The short courses, and such others as later investigation may determine are necessary, are offered for the benefit of persons who are interested in the various branches of fisheries. Admission to the courses is without examination. No previous preparation, training or fishery experience is necessary to enter, other than ability to read and write English. The past experience and future aims of each student are taken into consideration, and the character of his work arranged accordingly. Examinations will be given in the various subjects at the close of the course and a certificate showing the work satisfactorily covered issued to each student.

The courses include the following subjects: The canning and curing of fishery products; Scotch and other methods of curing herring; fish culture and pond culture.

Inquiries in regard to the short courses may be addressed to the Director, College of Fisheries.
COLLEGE OF FORESTRY

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), ......................... Professor of Forestry
*Elias Terrat Clark, M.F. (Yale), .............................. Associate Professor of Forestry
Brod Leonard Grondal, M.S.F. (Washington), ................ Assistant Professor of Forestry
Conrad W. Zimmerman, A.B. (Washington), ................... Lecturer in Timber Physics

Trevor Kingard, A.M. (Washington), ......................... Professor of Zoology
Henry Kreitzer Benson, Ph.D. (Columbia), .................. Professor of Chemical Engineering
George Samuel Wilson, B.S. (Nebraska), .................. Associate Professor of Mechanical Engineering
George Irving Gavitt, B.S. (C.E.), (Michigan), ............ Assistant Professor of Mathematics
John William Hotson, Ph.D. (Harvard), ...................... Assistant Professor of Botany
David Connolly Hall, M.D. (Chicago), ..................... University Health Officer; Professor of Hygiene
Clinton Louis Utterback, M.S. (Washington), ................ Instructor in Physics

*Absent on leave.

GENERAL INFORMATION

The College of Forestry was established in 1907. It has exceptional advantages in its location. The University campus comprises 582 acres of which 109 are open water; and 40 acres of timber offer 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 woodworking industries, the student has unrivaled opportunities for studying wood utilization.

FOREST CLUB

The Forest Club is an organization comprised of all students of the College of Forestry. It aims: To secure acquaintance and good fellowship among students and instructors; to keep in touch with everyday problems in forestry and lumbering, and the leaders in these industries; to interest the public in the college and in the forestry and lumbering problems of the state.

The Club has issued the “Forest Club Annual” regularly since 1913. This publication has been devoted to articles and illustrations of the College, to scientific and popular articles about forestry and to a complete roster of students and alumni. Beginning with April, 1922, the Annual was super-
ceded by a quarterly known as the "University of Washington Forest Club Quarterly". The subscription price is $2 a year. It is devoted largely to the Western forestry and lumbering interests.

Officers of the club for the year 1921-1922 are: President, J. O. Shank; vice-president, J. D. Roberts; secretary-treasurer, L. L. Simpson; editor, Will Schwiesow; advertising manager, Albert Lauber.

FIELD INSTRUCTION AND SUMMER WORK

Much of the instruction in technical forestry and lumbering is given in the field, in nearby forests, logging camps, saw mills, woodworking plants, and plants that manufacture equipment. This work is intensely practical and enables the student to correlate the theoretical classroom instruction with its application in the field.

Students in forestry are also urged to spend their summer vacation in some line of practical work connected with the forest industry. The school, situated in the heart of a great lumbering section and near extensive national forests, offers ample opportunity for summer employment. Students not only acquire valuable experience in this way, but earn a considerable portion of their university expenses.

FOREST AND LUMBERING LABORATORIES

For description of laboratories see pages 31, 32.

REQUIREMENTS FOR ADMISSION AND GRADUATION

Full information regarding requirements for admission, registration, and expenses may be found on pages 40, 48, 49.

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.

Short Courses for Forest Rangers and Lumbermen.—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. (For details of short courses, see page 143.

Undergraduate Work.—For the degree of bachelor of science in forestry (B.S.F.) the student shall have completed in addition to the required subjects outlined in the curriculum, at least 46 credits in subjects selected from forestry, lumbering, engineering, or the botanical, chemical, zoological, geological or economic sciences, the subjects to be approved by the student’s class advisor, but in no case shall more than 25 in any department other than forestry be allowed toward graduation. The total number of credits required for graduation shall be 180 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.

Graduate Work.—Two advanced degrees are offered to students who have received the bachelor’s degree at this University or other institutions of equal rank, and have a satisfactory knowledge of the fundamental sciences. For the degree of master of forestry (M.F.) he shall have been credited at this University with 225 credits, of which at least 78 are in approved technical forestry subjects. For the degree of master of science in forestry (M.S.F.) he shall be required to present a minor in one or two subjects in the College of Science. In addition to these requirements for either degree
he must present a thesis embodying the results of independent research and pass an oral examination open to all members of the faculty. Only grades of A and B can be counted toward a graduate degree.

Special Opportunities for Advanced Work

Attention is called to the equipment and to the special advanced courses for graduate students. The physical equipment of the College of Forestry and the exceptional advantages of its location are particularly advantageous for graduate students. The advanced courses include dendrology, silviculture, management, 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. 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, providing they have training in the fundamental sciences, mathematics and surveying.

Organization of the Curriculum

The curriculum of the College of Forestry is organized to give the student a broad general training during his first two years attendance with opportunity for specialization during the two final years. However, enough elementary technical work is included in the lower division so that the student will have received definite preparation for some practical field of work by the end of his freshman or sophomore year.

A very fair degree of specialization can be made in the four year undergraduate course, but emphasis should be placed upon the importance of a year of graduate work for thorough specialization. The College of Forestry is prepared to offer work for thorough specialization in (1) forest service and state work, (2) logging engineering, (3) forest products, (4) the lumber business.

Arrangements may also be made for specialization along other lines, such as forest pathology, forest entomology, recreation or any others into which a broad training in forestry enters. This may be done by a substitution of some of the required courses for those of other departments. All such substitutions require the sanction of the dean and the University graduation committee.

Choice of Electives.—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 advisers unless such deviation is imperative.

The curriculum of the College is practically identical for all students during the first two years, but provides for specialization in the upper division courses in (1) forest management, (2) logging engineering, (3) forest products, and (4) the business of lumbering. Arrangements may also be made for specialization in other lines associated with forestry and lumbering. Consult the Dean of the College of Forestry. Students should decide by the end of their sophomore year in which field they desire to specialize. The student should be especially careful to register for the electives required for his advanced specialized courses as no student will be admitted to the advanced subjects who has not had the necessary prerequisites. These are definitely stated in connection with the course descriptions.
LOWER DIVISION

It will be the aim to prepare students who cannot go farther than the end of the Lower Division for forest ranger service, and as assistants to logging engineers. Upon approval of the dean they will be allowed to substitute certain of the subjects of the junior year for some of the required freshman and sophomore work.

FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
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<tr>
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<td>Bot. 12</td>
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<tr>
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<td>For. 8 (Gen. For.)</td>
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<td>Math. 58</td>
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<td>Math. 54 (Foresters)</td>
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<td>Math. 55</td>
<td>3</td>
<td>For. 4 (Protection)</td>
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<td>Phys. Ed. or Mil. Sci.</td>
<td>1½</td>
<td>Phys. Ed. or Mil. Sci.</td>
<td>1½</td>
</tr>
<tr>
<td>Shop</td>
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<td>Shop</td>
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</tbody>
</table>

SECOND YEAR

| For. 53 (Construction) | 3 | Chem. 2 (Gen. Chem.) | 5 | For. 52 (Measuret.) | 5 |
| For. 57 (Silvics) | 3 | For. 51 (Measuret.) | 5 | For. 58 (Silvics.) | 5 |
| Chem. 1 (Gen. Chem.) | 5 | English          | 3 | Geol. 5 (Forestry) | 5 |
| Econ. 1 (Gen.) | 5 | Elective         | 2 |                |         |
| Phys. Ed. or Mil. Sci. | 1½ | Phys. Ed. or Mil. Sci. | 1½ | Phys. Ed. or Mil. Sci. | 1½ |

UPPER DIVISION

Beginning with the Upper Division, the student should carefully consider the electives with reference to the specialty he intends to make his life work.

THIRD YEAR

| For. 101 (Technol.) | 5 | For. 158 (UHil.) | 5 | For. 105 (Preserv.) | 5 |
| Physics 97 (Engs.) | 5 | Physics 98 (Engs.) | 5 | For. 104 (Tim. Tests) | 6 |
| M.E. 52 (Steam Engs.) | 3 | Recreation       | 5 |                |         |
| Chem. 101 (Qual Anal.) | 5 | Chem. 111 (Quant An.) | 5 | Bot. 111 (Pathology) | 5 |
| B.A. 11 (Accounting) | 5 | B.A. 12 (Accounting) | 5 | B.A. 56 (Bus. Law) | 3 |
| C.E. 22 (Log. R.B.) | 5 | B.A. 55 (Bus. Law) | 3 |                |         |
| B.A. 54 (Bus. Law) | 3 | M.E. 55          | 3 |                |         |

Suggested Electives

| For. 151 (Management) | 5 | For. 126 (Econ.) | 3 | All elective. |
| For. 153 (Gen. Lumber) | 5 | For. 152 (Management) | 5 | Recreation | 6 |

FOURTH YEAR

| For. 185 (Log. Eng.) | 4 | For. 186 (Log. Eng.) | 4 | For. 187 (Log. Eng.) | 16 |
| For. 183 (Milling) | 5 | For. 184 (Mfg. Prob.) | 3 | For. 188 (Adv. Prod.) | 5 |
| For. 119 (Admin.) | 3 |                | 3 |                |         |

Suggested Electives

GRADUATE

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 is, 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 master’s degree.

| For. 202 (Thesis) | 3 | For. 202 (Thesis) | 3 | For. 202 (Thesis) | 3 |
| For. 201 (For. Geog.) | 3 | For. 209 (Seminar) | 2 | For. 228 (Adv. Manage.) | 3 |
| For. 208 (Seminar) | 2 | For. 208 (Seminar) | 10 | For. 224 (Adv. Milling) | 5 |
| For. 221 (History) | 2 | For. 221 (History) | 2 | For. 221 (History) | 2 |

COURSES

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index.)
**GENERAL INFORMATION**

*Admission*—Without examination. Only requirement is that applicants must be at least 20 years old and show evidence of ability to carry the work with profit to themselves. If in doubt write. See special requirement under course in Logging.

*Expenses*—The total expenses for the twelve weeks, exclusive of fare to Seattle, need not exceed $165.

<table>
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<tr>
<th>Description</th>
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<tr>
<td>Tuition</td>
<td>$20</td>
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<tr>
<td>Deposit for material supplied</td>
<td>$2</td>
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<tr>
<td>Deposit to insure care in use of instruments (returnable)</td>
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<tr>
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<tr>
<td>Books, drawing instruments, etc.</td>
<td>$10-15</td>
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<tr>
<td>Field trips, about</td>
<td>$10</td>
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*Equipment Required*—Since much of the field work will be done in the woods each man should be equipped with suitable rough clothing and shoes. Men owning compasses or barometers are requested to bring them.

*How to Enroll*—On arrival at the University, students should report at the Office of the Dean, Room 209 Forest Products Laboratory, where they will be given all necessary directions.

The time for the course is limited, all men should report for enrollment on January 2 or 3, in order that all classes may begin promptly at 8 o'clock on the morning of January 4.

*Attendance and Deportment*—Students in these courses will be expected to attend classes regularly and in all respects will be required to observe the same rules that apply to the regular long course students in the University.

*Examination and Certificate*—Examinations will be given in the various subjects at the close of the course and a certificate showing the work satisfactorily covered issued to each student.

*Special Lectures and Demonstrations*—Arrangements are now under way for a number of special lectures and demonstrations by prominent men in forestry and lumbering.

Three distinct courses are offered:

*I. Forestry*—For men who are now employed as forest rangers and guards who wish to increase their efficiency, for persons who wish to prepare for this work and for timberland owners who desire some practical knowledge of the care and management of their timber holdings. The course includes the following subjects: Forest Administration, Characteristics of Trees, Silviculture, Forest Measurements, Surveying, Logging, Forest Economics.

*Note:* Elective courses will be given only if a sufficient number elect them.

*II. Logging*—For persons engaged in woods work about the donkey engine, with the scaler, the cruiser, the logging engineer, or in any other capacity, who wish to prepare themselves for advancement. It is not for men engaged in mill work. All persons wishing to enter this course must have had at least 3 months' experience in a logging camp and should at time of registration bring a statement to this effect from a former employer or foreman.
This course includes the following subjects: Characteristics of Trees, Surveying, Forest Measurements, Forest Economics, Logging, Electives from Forestry Course.

III. Lumber and Its Uses. Outlined with special reference to presenting this information for the use of persons engaged in office work at the sawmills, lumber salesmen, architects, engineers, builders and building inspectors.

The course includes the following subjects: Characteristics of Trees, Properties of Wood, Wood Utilization, Forest Economics.

Other subjects to be elected from the course in forestry.
SCHOOL OF LAW

THE FACULTY

HENRY SUEHALLO, Ph.D. (Columbia), LL.D. (California).............President

JOHN THOMAS CONDON, LL.M. (Northwestern).........................Professor of Law; Dean

HARVEY LANTZ, A.M. (De Paul), LL.B. (Kent)............................Professor of Law

IVAN WILBUR GOODNER, LL.B. (Nebraska)............................Professor of Law

CLARK PRESOFTT BISSETT, A.B. (Robart)............................Professor of Law

LESLIE JAMES ATHER, B.S., J.D. (Chicago)............................Professor of Law

JOSEPH GHRATTAN O'BRIAN, A.B. (Jesuit College)..................Lecturer on Law

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 School is a member of the Association of American Law Schools.

The Law Building.—The Law School occupies the entire upper floor of Commerce Hall. 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 north 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 25,000 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.

The University general library contains 112,870 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.

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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 per quarter. In adopting this system the total hour values of courses prevailing in the schools of the Association of American Law Schools have been generally 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 at the opening of any quarter. However, students beginning the study of law cannot be registered for the full fifteen-hour course except when entering at the first, or autumn quarter.

Fees.—A fee of fifteen dollars ($15) per quarter for persons who have been domiciled in the state of Washington or territory of Alaska, for at least one year prior to date of registration, and of fifty dollars ($50) per quarter for all others, is charged in the Law School, payable at the beginning of each quarter. A law library fee of ten dollars ($10) per quarter is also charged all law students, payable at the beginning of each quarter. A diploma fee of five dollars ($5) is charged all students to whom diplomas are issued.

For information on other general University fees and expenses applicable to all students, see pages 49-53.

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. Students intending to practice in the state of Washington 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 AND GRADUATION

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. The entrance requirements are stated fully in the section of the catalogue relating to entrance information (Pages 40-47.)

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 General Information, page 45) will be admitted to take such work in law as their previous preparation
enables them to carry successfully, and upon satisfactory completion of suf­
ficient 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 re­
quirements 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 en­
trance 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 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 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 may be
granted upon the completion of the fourth year.

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

Students are 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 the 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 Law School, 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.

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 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, other than the prescribed fee for excess hours, except that in 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 law work in the Law School, aggregating 135 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.

Courses

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).
COLLEGE OF MINES

THE FACULTY

HARRY SULLALO, Ph.D. (Columbia), LL.D. (California) .................................. PRESIDENT

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

MILNOB 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 CORBY, E.M. (Montana State School of Mines), A.M. (Columbia), Assistant Professor of Mining Engineering and Metallurgy

HEWITT WILSON, C.E. (Ohio State University) .......................................................... Assistant Professor of Ceramics

HARVEY L. GLENN, B.S. (Iowa State College) ........................................... Lecturer on Assaying of Bullion

FREDERICK POWELL, B.M. (Columbia) ........................................... Lecturer on Gold Dredging


HAROLD V. REDMOND, Assistant in Metallurgy

GEORGE F. MCCORMICK, Assistant in Mining

JAMES MCKIM, Assistant in Ore Dressing

JOHN THOMAS CONDON, LL.M. (Northwestern) ........................................... Professor of Law

HARRY KERSTEN BENSON, Ph.D (Columbia) ........................................... Professor of Chemical Engineering

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

FREDERICK ARTHUR OBERT, Ph.D. (Michigan) ........................................... Professor of Physics

ROBERT EUGEN MORRIS, Ph.D. (Nebraska) ........................................... Professor of Mathematics

CARL EDWARD MAGNUSSON, E.E. (Minnesota), Ph.D. (Wisconsin) ...................................

Professor of Electrical Engineering and Dean of the College of Engineering

ENERDY OWEN EASTWOOD, C.E.A.M. (Virginia), S.B. (Massachusetts Institute of Technology) ........................................... Professor of Mechanical Engineering

DAVID CONNOLLY HALL, Sc.M., M.D. (Chicago) ........................................... Professor of Hygiene

CHARLES CHURCH MOORE, M.S., C.E. (Lafayette), M.C.E. (Cornell) ...................................

Professor of Civil Engineering

WILLIAM FRANKLIN ALLISON, C.E. (Cornell) ........................................... Professor of Civil Engineering

Professor of Municipal and Highway Engineering

CHARLES LEONARD PHILLIPS, Colonel C.A.C., U.S.A., (U.S. Military Academy), A.B. (Colby), C.E. (Maine) ........................................... Professor of Military Science and Tactics

LORD DONALD ALLAN, A.B. (Michigan) ........................................... Associate Professor of English

CHARLES WILLIAM HARRIS, C.E. (Cornell) ........................................... Associate Professor of Civil Engineering

WANDERLIN CURTIS, Ph.D. (Harvard) ........................................... Associate Professor of Economics

GEORGE SAMUEL WILSON, B.S. (Nebraska) ........................................... Associate Professor of Mechanical Engineering

EDGAR ALLON LOW, B.S., B.E. (Wisconsin) ........................................... Associate Professor of Electrical Engineering

HENRY LOUIS BRESIL, Ph.D. (Cornell) ........................................... Associate Professor of Engineering Physics

*CHARLES EDWIN WEaver, Ph.D. (California) ........................................... Associate Professor of Geology

ALLEN FULLER CARPENTER, Ph.D. (Chicago) ........................................... Associate Professor of Mathematics

GEORGE IRVING GAVITT, B.S., (C.E.) (Michigan) ........................................... Assistant Professor of Mathematics

GEORGE E. GOODSPeed, S.B. (Massachusetts Institute of Technology) ...................................

Assistant Professor of Geology

FRED HARVEY EDMUND, Ph.D. (Yale) ........................................... Assistant Professor of Chemistry

CHRIS. G. DOBSON, B.M. (Montana State School of Mines) ...................................

Instructor in Engineering Shops

ADVISORY BOARD COLLEGE OF MINES

UNIVERSITY OF WASHINGTON

ROY H. CLARK, mining engineer ........................................... Peyton Building, Spokane

JOHN ERIKSON, mine operator ........................................... Erikson Building, Seattle

J. T. HEFFERNAN, president of the Heffernan Engine Works, mine operator ..............

106 Railroad Avenue South, Seattle

CHARLES HUSEY, 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 Pacific Coast Coal Company ..............Seattle

*Absent on leave.
Scope and Facilities

Degrees.—The College of Mines offers specialized training in mining engineering, metallurgy, and ceramics. The four-year curricula lead to degrees as follows:

I. Bachelor of science in mining engineering, B.S. (Min.E.)
II. Bachelor of science in geology and mining, B.S. (Geol. and Min.)
III. Bachelor of science in metallurgical engineering, B.S. (Met.E.)
IV. Bachelor of science in coal mining engineering, B.S. (Coal Min. E.)
V. Bachelor of science in ceramic engineering, B.S. (Cer. E.)

The degree of engineer of mines (E.M.) is given to graduates in mining engineering who have practiced their profession for at least three years and who present a satisfactory thesis. Graduates in metallurgy may receive the degree of metallurgical engineer (Met.E.) under similar conditions, and the appropriate advanced degrees are also open to graduates of the other curricula.

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. Methods important to the mining engineer are the operations of the steam shovels, which are now used largely 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, 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.

Laboratories.—For description of mining, metallurgical and ceramic laboratories, see page 34.

Mining Society.—The Mining Society, affiliated with the American Institute of Mining and Metallurgical Engineers, has a membership composed of all students in the College. 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.

Mining and Metallurgical Research

The purpose of this department is to stimulate and encourage development in the mining, metallurgical and ceramic industries 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 $780 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 June 1, 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, metallurgical engineering, or ceramic engineering, unless an equivalent degree has previously been earned.

Arthur A. Denny Fellowship.—In addition to the foregoing a fellowship of $500 annual value is open to students in the College of Mines who are residents of the state of Washington. This fellowship is awarded on the bases of scholastic excellence and general merit, but only to those who need financial assistance. Applications must be made to the Dean of the College before March 15 preceding the academic year for which the fellowships are to be granted. The purpose of the fellowship is to encourage graduate work in the College.

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.

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 Pittsburgh station and the safe methods of charging, tamping, and firing are explained. Coal men interested in the washing of coals are given full practice with the several types of apparatus used for this purpose.
152 University of Washington

Winter Session for Mining Men.—Applicants must be at least twenty years old. Admission to classes is without examination. For schedule of courses see pages 155, 156.

Requirements for Admission

Full information regarding requirements for admission, registration, and expenses may be found on pages 40, 48, 49.

Curricula of the College of Mines

Mining Engineering (Option I)

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Second Year

| Mathematics 61 | 3 | Mathematics 62 | 3 | English | 4 |
| Physics 97 | 5 | Physics 98 | 5 | Physics 100 | 5 |
| Geology 1 | 3 | Geology 21 | 3 | Geology 120 | 5 |
| Mining 51 | 3 | Civil Engineering 27 | 3 | Chemistry 111 | 5 |
| Mil. Sci. or Phys. Ed. | 1½ | Mil. Sci. or Phys. Ed. | 1½ | Mil. Sci. or Phys. Ed. | 1½ |

†Mining practice in summer vacations.

Third Year

| Civil Engineering 131 | 3 | Civil Engineering 132 | 3 | Geology 122 | 2 |
| Geology 123 | 8 | Electrical Eng. 101-102 | 8 | Electrical Eng. 121-122 | 8 |
| Mining 101 | 5 | Metallurgy 102 | 5 | Mining 106 | 2 |
| Mechanical Eng. 54 | 1 |

Fourth Year

| Mining 151 | 3 | Mining 154 | 2 | Mining 152 | 5 |
| Mining 153 | 2 | Mining 155 | 1 |
| Metallurgy 156 | 5 | Mining 108 | 1 |
| Metallurgy 162 | 2 | Mining 108 | 1 |
| Electives | 5 | Electives | 4 |

Geology and Mining (Option II)

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†Practice in mining, metallurgy, geology or ceramics, accompanied by a report on the work performed is required of all students during a summer vacation following the sophomore or junior year.
### Third Year

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
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*Mining practice in summer vacations.*

<table>
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<tbody>
<tr>
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<tr>
<td>Metallurgy 161</td>
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<tr>
<td>Geology 128</td>
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<td>Electives</td>
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### Metallurgical Engineering (Option III)

#### First Year

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#### Second Year

| Mathematics 61 | 3 | Mathematics 62 | 3 | English 4 | 3 |
| Physics 97 | 5 | Physics 85 | 5 | Physics 96 | 5 |
| Geology 1 | 5 | Geology 21 | 5 | Geology 120 | 2 |
| Mining 51 | 3 | Civil Engineering 275 | 5 | Chemistry 111 | 5 |
| Mil. Sci. or Phys. Ed. | 1 | Mil. Sci. or Phys. Ed. | 1 | Mil. Sci. or Phys. Ed. | 1 |

#### Third Year

| Civil Engineering 131 | 3 | Civil Engineering 182 | 3 | Electrical Eng. 121-122 | 5 |
| Mining 101 | 8 | Electrical Eng. 101-103 | 6 | Metallurgy 102 | 5 |
| Metallurgy 101 | 5 | Metallurgy 103 | 4 | Mining 106 | 3 |
| Mechanical Eng. 54 | 1 | Metallurgy 103 | 4 | Electives | 2 |
| Electives | 8 | | | | |

*Mining practice in summer vacations.*

### Fourth Year

| Mining 151 | 3 | Mining 154 | 2 | Mining 152 | 3 |
| Mining 153 | 2 | Metallurgy 105 | 5 | Mining 155 | 3 |
| Metallurgy 104 | 3 | Metallurgy 106 | 3 | Metallurgy 104 | 5 |
| Metallurgy 155 | 2 | Metallurgy 101 | 5 | Electives | 6 |
| Metallurgy 162 | 2 | Mining 103 | 1 | Electives | 3 |

### Coal Mining Engineering (Option IV)

#### First Year

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*Practice in mining, metallurgy, geology or ceramics, accompanied by a report on the work performed is required of all student during a summer vacation following the sophomore or junior year.*
## UNIVERSITY OF WASHINGTON

### SECOND YEAR

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<td>Civil Engineering 57</td>
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### THIRD YEAR

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<tbody>
<tr>
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<td></td>
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</tbody>
</table>

### FOURTH YEAR

| Mining 151                         | 3       | Mining 154                        | 2       | Mining 155                        | 1       |
| Mining 153                         | 2       | Mining 171                        | 3       | Mining 182                        | 3       |
| Metallurgy 155                     | 3       | Mining 170                        | 5       | Mining 178                        | 2       |
| Mining 170                         | 3       | Mining 103                        | 1       | Electives                         | 9       |
| Mechanical Eng. 54                 | 4       | Electives                         | 4       |                                    |         |
| Electives                          | 3       |                                    |         |                                    |         |
|                                     |         | **Total Credits**                 | **15**  | **Total Credits**                 | **15**  |

## CERAMIC ENGINEERING (OPTION V)

### FIRST YEAR

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<td>Civil Engineering 27</td>
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<td>Chemistry 111</td>
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### SECOND YEAR

| Civil Engineering 131             | 3       | Civil Engineering 132             | 3       | English 4                         | 3       |
| Mining 101                        | 3       | Metallurgy 103                    | 2       | Metallurgy 102                    | 5       |
| Chemistry 133 Electives           | 3       | Chemistry 182 Electives           | 3       | Ceramics 102                       | 3       |
| Ceramics 100                      | 3       | Ceramics 101                      | 3       | Ceramics 110                       | 2       |
| Ceramics 104                      | 3       | Ceramics 105                      | 3       | Mining 106                        | 2       |
|                                    |         | **Total Credits**                 | **15**  | **Total Credits**                 | **15**  |

### THIRD YEAR

<table>
<thead>
<tr>
<th>Mining Practice in Summer Vacations.</th>
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<tbody>
<tr>
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### FOURTH YEAR

| Ceramics 121                       | 5       | Ceramics 122                      | 5       | Ceramics 123                       | 5       |
| Ceramics 131                       | 3       | Ceramics 182                      | 3       | Ceramics 183                       | 2       |
| Electives                          | 7       | Mining 103                        | 1       | Electives                          | 8       |
| Electives                          | 3       |                                    |         |                                    |         |
|                                     |         | **Total Credits**                 | **15**  | **Total Credits**                 | **15**  |

## COURSES

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).

*Practice in mining, metallurgy, geology or ceramics, accompanied by a report on the work performed is required of all students during a summer vacation following the sophomore or junior year.*
The twenty-sixth annual winter session for mining men will open on January 4, 1923, and will continue until March 21. During this period each year twelve of the instructors in mining engineering offer a course for the benefit of persons interested in prospecting, mining, milling, assaying or smelting. A five-day excursion to a mining district is offered at the close of the session. 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 with little 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, 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, quartz and placer mining, dredging, milling and smelting.

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**

Students need not enroll for all the subjects listed in a group, changes in the choice of subjects in each group may be made, depending on individual circumstances. For students who return a second year, special courses are arranged in continuation of their previous work.

A tuition fee of $20 is required of all students registering in the winter mining session, and each student makes a deposit 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 cost on the average about $10. The total cost of the full course for three months is less than $40 in the placer group and $60 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 reasonable costs. The University operates a cafeteria, and 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 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

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<td>Mining</td>
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<td>DOBSON</td>
<td>LANDES</td>
<td>ROBERTS</td>
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<td>Milling</td>
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</table>

For more detailed information apply to the dean of the College of Mines.
The College and its Equipment

The College of Pharmacy was organized in 1894 to provide an opportunity for young men and women to become well trained practical pharmacists. The work of the original two-year course has been extended to three, four and five year courses. In the three-year course 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 the State of Washington

The Administrative Code passed by the 1921 legislature abolished the Board of Pharmacy and placed the registration of pharmacists under a new department created by the Code and called the Department of Licenses.
The Department of Licenses will continue to enforce the requirements for registration as pharmacists that have been enforced by the Board of Pharmacy since 1914.

These requirements are:—

1. Graduation from an approved College of Pharmacy.
2. (a) Graduates of two-year courses are required to have two years of practical experience.
   (b) Graduates of three-year courses are required to have 18 months of practical experience.
   (c) Graduates of four-year courses are required to have 12 months of practical experience.

Graduates of the University of Washington College of Pharmacy are registered without examination upon payment of a fee of $8. Graduates who have not had the required amount of practical experience are registered as assistant pharmacists and upon completing the required amount of practical experience obtain full registration as pharmacists.

Higher Standards in Pharmacy.—The minimum course of study in the College of Pharmacy is Three Years. The aim of this course is to give thorough scientific training for retail pharmacists; if the student desires, he may elect certain studies in the College of Business Administration that will better prepare him for the business side of retail pharmacy.

Retail pharmacy is recognized both as a profession and a business. The College of Pharmacy desires to meet as far as possible these two conditions. Special attention is given, primarily, to a thorough scientific training for the compounding and dispensing of drugs and medicines; such business training will be included as time will permit in the three-year course. Students desiring further business training can complete, in one more year, the four-year combined scientific and business course. In this four-year course the student receives training in economics, psychology, business law, accounting, advertising, salesmanship and business management. All of this training is useful in the everyday life of the business side of retail pharmacy.

Students desiring more extensive training in scientific pharmacy may complete the three-year course by including advanced work in prescriptions, manufacturing pharmacy, toxicology, physiological chemistry and bacteriology. Graduates of this course are trained for positions in strictly prescription stores and for work in clinical diagnosis.

Graduates of the four-year scientific course are trained for positions as expert laboratory workers in both State and Federal laboratories, bacteriologists for physicians, City Boards of Health, and for State and Federal laboratories, manufacturing pharmacists and chemists for large pharmaceutical houses, and as teachers in the colleges of pharmacy.

It should be noted therefore that the College sets a high standard for pharmaceutical training and that a number of opportunities are open to graduates who take the time to thoroughly prepare themselves for responsible positions.

Preparation for Medicine.—Students taking the four-year scientific course have the opportunity of electing studies that will give them clear entrance to the best medical colleges. Pharmaceutical training is an excellent preparation for medicine. It gives the student a knowledge of drugs and medicines that can be obtained in no other way. In addition the graduate in pharmacy who finally completes medicine has the benefit of the two professions.

The American Conference of Pharmaceutical Faculties.—The College of Pharmacy is a member of the American Conference of Pharmaceutical Faculties. The objects of the conference are: to promote closer relations be-
tween 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.

GENERAL INFORMATION

Garden of Medicinal Plants.—The College of Pharmacy maintains on the campus a garden in which plants of pharmaceutical importance are cultivated. The area and scope of this garden have been gradually extended, until the college now has a complete collection of medicinal plants which furnishes valuable material for classes in botany, materia medica and drug assay.

A specialist in medicinal plant cultivation, formerly associated with the U. S. Bureau of Plant Industry, is a member of the staff of the College of Pharmacy and is in charge of the garden of medicinal plants. Persons interested in medicinal plant cultivation are urged to write Mr. James Thompson, College of Pharmacy, University of Washington, Seattle, for desired information.

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. Send your prescriptions with a history of difficulties encountered to Professor Cornelius Osseward, who is in charge of prescription courses in the College of Pharmacy.

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 given great importance to 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 Pharmacopoeia 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.

Women in Pharmacy.—The opportunities for women in pharmacy are just as great as for men. Women are finding a place in retail pharmacy and are becoming noted for the satisfaction they give in both the scientific and business side of the average drug store. Women graduates of the four year course are also giving excellent satisfaction as food and drug chemists, bacteriologists and as teachers in colleges of pharmacy.

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.
The Arthur A. Denny Fellowship.—The College of Pharmacy is indebted to the Arthur A. Denny estate for a fellowship that pays $500 per year to the student selected for this honor. The fellowship is granted each year to a graduate of the four-year course in pharmacy. The graduate is selected on the basis of excellence in scholarship and promise of ability to do research work in some subject of pharmaceutical importance.

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 1921-1922 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.

1. ADMISSION TO THE THREE-YEAR COURSE LEADING TO THE DEGREE OF PHARMACEUTICAL CHEMIST.

For admission to the three-year course, no subjects are prescribed beyond the general requirements for freshman standing in the University. (See page 43).

2. ADMISSION TO THE FOUR-YEAR COURSE, LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY.

For admission to this course a candidate must present the following credits, in the fifteen units required for freshman standing in the University:

- 2 units in one foreign language.
- 1 unit in one of the following sciences: physics, chemistry, botany, zoology, physiology, general biology.

3. ADMISSION TO 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.

4. STUDENTS NOT CANDIDATES FOR DEGREES.

Persons over twenty-one years of age, who present evidence of adequate preparation, may be admitted as special students. In general a student from an accredited high school will not be admitted as a special if he has been in attendance at high school during the previous year.

Applicants for admission as specials should file their applications and credentials with the registrar at least four weeks before the beginning of the quarter in which they wish to attend. Blanks for this purpose may be obtained from the registrar at any time.

DEGREES

1. 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.

2. 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.
3. 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.

NOTE—Students who have entered as candidates for the two-year degree of Graduate in Pharmacy (Ph.G.) prior to September, 1921, have the right to complete the requirements for this degree.

CURRICULA REQUIRED FOR GRADUATION

1. A three-year course which prepares its graduates for responsible positions as practical pharmacists. Opportunity is given in this course for training in business law, advertising, accounting, advanced work in pharmacy, bacteriology and chemistry.

2. 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.

3. A four-year combined scientific and business course which includes the regular pharmacy work of the three-year course together with advanced training in pharmacy, and courses in the College of Business Administration and Schools of Journalism and Law which insures 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.

4. 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.

1. WITH DEGREE OF PHARMACEUTICAL CHEMIST. (Three-Year Course).

**FIRST YEAR**

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacy 1</td>
<td>5</td>
<td>Pharmacy 2</td>
<td>5</td>
<td>Pharmacy 3</td>
<td>5</td>
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<tr>
<td>Chemistry 8</td>
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<td>5</td>
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<tr>
<td>Physiology 7</td>
<td>5</td>
<td>Botany 15</td>
<td>5</td>
<td>Botany 14</td>
<td>4</td>
</tr>
<tr>
<td>Mil. ScI. or Phys. Ed.</td>
<td>1⅔</td>
<td>Mil. ScI. or Phys. Ed.</td>
<td>1⅔</td>
<td>Mil. ScI. or Phys. Ed.</td>
<td>1⅔</td>
</tr>
</tbody>
</table>

**SECOND YEAR**

| Chemistry 37   | 5       | Chemistry 38   | 5       | Chemistry 39   | 5       |
| Pharmacy 8     | 5       | Pharmacy 9     | 4½      | Pharmacy 10    | 4½      |
| Pharmacy 10    | 4½      | Pharmacy 12    | 3       | Pharmacy 13    | 3       |
| English 1      | 3       | Mil. ScI. or Phys. Ed. | 1⅔ | Mil. ScI. or Phys. Ed. | 1⅔ |
| Mil. ScI. or Phys. Ed. | 1⅔ | Mil. ScI. or Phys. Ed. | 1⅔ | Mil. ScI. or Phys. Ed. | 1⅔ |

**THIRD YEAR**

| Pharmacy 101  | 2       | Pharmacy 102  | 2       | Pharmacy 103  | 2       |
| Pharmacy 117  | 2       | Pharmacy 118  | 2       | Pharmacy 119  | 3       |
| Pharmacy 121  | 2½      | Pharmacy 122  | 2       | Pharmacy 123  | 2½      |
| Approved Electives | 9½ | Approved Electives | 9½ | Approved Electives | 9½ |

Total scholastic hours for graduation—135 plus 10 hours military or physical education. Electives in junior year may be arranged to meet requirements of either four-year course.
## 2. WITH DEGREE OF BACHELOR OF SCIENCE. (Four-Year Scientific Course).

### FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Pharmacy 2</td>
<td>5</td>
<td>Pharmacy 3</td>
<td>5</td>
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<tr>
<td>Physiology 7</td>
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<td>Botany 13</td>
<td>5</td>
<td>Botany 14</td>
<td>4</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed.</td>
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<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
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### SECOND YEAR

<table>
<thead>
<tr>
<th>Ceremony</th>
<th>Credits</th>
<th>Laboratory Science</th>
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<th>Laboratory Science</th>
<th>4-5</th>
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<tbody>
<tr>
<td>Pharmacy 101</td>
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<td>Pharmacy 102</td>
<td>2</td>
<td>Pharmacy 103</td>
<td>2</td>
</tr>
<tr>
<td>Pharmacy 117</td>
<td>2</td>
<td>Pharmacy 118</td>
<td>2</td>
<td>Bacteriology 101</td>
<td>1</td>
</tr>
<tr>
<td>Language (Mod. Foreign)</td>
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<td>Language (Mod. Foreign)</td>
<td>5</td>
<td>Language (Mod. Foreign)</td>
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</tr>
<tr>
<td>Physics</td>
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<tr>
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### FOURTH YEAR

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<td>Language (Mod. Foreign)</td>
<td>5</td>
<td>Approved Elective</td>
<td>5</td>
</tr>
<tr>
<td>Physics</td>
<td>5</td>
<td>Approved Elective</td>
<td>5</td>
<td></td>
<td></td>
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<tr>
<td>Laboratory Science</td>
<td>4-5</td>
<td>Laboratory Science</td>
<td>4-5</td>
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</tbody>
</table>

The student is required to take 25 hours of one modern foreign language or 30 hours (15 each) if two languages are taken.

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.

Total scholastic hours for graduation—186 plus 10 hours in military or physical education.

## 3. WITH DEGREE OF BACHELOR OF SCIENCE. (Four-Year Combined Scientific and Business Course.)

### FIRST YEAR

<table>
<thead>
<tr>
<th>Autumn Quarter</th>
<th>Credits</th>
<th>Winter Quarter</th>
<th>Credits</th>
<th>Spring Quarter</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacy 1</td>
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<td>Pharmacy 2</td>
<td>5</td>
<td>Pharmacy 3</td>
<td>5</td>
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<tr>
<td>Chemistry 8</td>
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<tr>
<td>Physiology 7</td>
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<td>Botany 13</td>
<td>5</td>
<td>Botany 14</td>
<td>4</td>
</tr>
<tr>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
<td>Mil. Sci. or Phys. Ed.</td>
<td>1½</td>
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### SECOND YEAR

<table>
<thead>
<tr>
<th>Ceremony</th>
<th>Credits</th>
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<th>4-5</th>
<th>Laboratory Science</th>
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<td>Pharmacy 117</td>
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<tr>
<td>Language (Mod. Foreign)</td>
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<td>Language (Mod. Foreign)</td>
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<td>Language (Mod. Foreign)</td>
<td>5</td>
</tr>
<tr>
<td>Pharmacy 15</td>
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<td>Pharmacy 15</td>
<td>5</td>
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<td></td>
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<td>1</td>
<td>Pharmacy 126</td>
<td>1</td>
<td>Pharmacy 127</td>
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</tbody>
</table>
### College of Pharmacy

#### Fourth Year

<table>
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<th>Winter Quarter</th>
<th>Spring Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus. Admin. 11 (Acc'tg)</td>
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<td>Bus. Admin. 12 (Acc'tg)</td>
</tr>
<tr>
<td>Bus. Ad. 138 (Elec'tics)</td>
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<td>Bus. Ad. 137 (Elec'tics)</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>5</td>
<td>Approved Electives</td>
</tr>
</tbody>
</table>

Total scholastic hours for graduation—180 plus 10 hours of military or physical education.

Attention of the student is called to business administration courses number 6, Business Correspondence; 67, Money and Banking; 106, Economics of Markets; 126, Commercial Credits; 141, Fire Insurance; 157, Income Tax as desirable electives.

4. 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.

5. WITH DEGREE OF DOCTOR OF PHILOSOPHY.

Students wishing to take the degree of doctor of philosophy with the thesis in the pharmaceutical field, shall take it under the same regulations as in the department of chemistry, writing the thesis under one of the pharmaceutical members of the department of chemistry. Prospective candidates for this degree should write for Graduate School Bulletin.

### Courses

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).
GRADUATE SCHOOL

THE FACULTY

HENRY SUZZALLO, Ph.D. (Columbia), LL.D. (California) ........................................President
JOHN THOMAS CONDON, LL.M. (Northwestern) ..................................................Dean of Faculties
FREDERICK MORGAN PARDUE, Ph.D. (Yale) .........................................................Professor of English; Dean
HENRY LANDER, A.M. (Harvard), Professor of Geology and Mineralogy; Dean of the College of Science.
EDMUND STEPHEN MEANY, M.L. (Wisconsin) .......................................................Professor of History
J. ALLEN SMITH, Ph.D. (Michigan) .................................................................Professor of Political Science
CARO LINE HAVEN OHRE .................................................................Professor of Spanish
THEO Y R KINGAID, A.M. (Washington) .................................................................Professor of Zoology
MINOR ROBERTS, A.B. (Stanford), Professor of Mining Engineering and Metallurgy; Dean of the College of Mines.
FREDERICK ARTHUR OSBORN, Ph.D. (Michigan), Professor of physics; Director of Physics Laboratories.
WILLIAM SAVERT, Ph.D. (Harvard) .................................................................Professor of Philosophy
DAVID THOMSON, B.A. (Toronto) .................................................................Professor of Latin; Dean of the College of Liberal Arts
CHARLES WILLIS JOHNSTON, Ph.D. (Michigan), Professor of Pharmaceutical Chemistry; Dean of the College of Pharmacy.
Pierre Joseph Frein, Ph.D. (Johns Hopkins) .............................................................Professor of French
THEODOR CHRISTIAN FRITZ, Ph.D. (Chicago) ......................................................Professor of Botany
ROBERT EDWARD MORETZ, Ph.D. (Nebraska), Ph.N.D. (Strassburg), Professor of Mathematics.
CARL EDWARD MAGNUSSON, Ph.D. (Wisconsin), B.E. (Minnesota), Professor of Electrical Engineering; Dean of the College of Engineering.
EVERETT OWEN EASTWOOD, C.E., M.A. (Virginia), S.B. (Massachusetts Institute of Technology), Professor of Mechanical Engineering.
WILLIAM ELMER HUNTER, A.M. (Indiana) ............................................................Librarian and Director of the Library School
OLIVER HUNTINGTON RICHARDSON, Ph.D. (Heidelberg) ....................................Professor of European History
CHARLES CHURCH MORE, M.S., C.E. (Lafayette), M.C.E. (Cornell), Professor of Civil Engineering.
HENRY KREITZER BENSON, Ph.D. (Columbia) .........................................................Professor of Chemical Engineering
JOHN WENZEL, Ph.D. (Wisconsin) .................................................................Professor of Bacteriology
HUGO WINKENWORDER, 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 School of Education.
EDWIN JOHN VICINZER, Ph.D. (Minnesota) .........................................................Professor of Scandinavian Languages
EDWIN ISABEL RAITT, M.A. (Columbia) .................................................................Professor of Home Economics
WILLIAM FRANKLIN ALLISON, B.S., C.E. (Cornell), Professor of Municipal and Highway Engineering.
STEVENVSON SMITH, Ph.D. (Pennsylvania) ............................................................Professor of Psychology
ALLAN ROGERS BENHAM, Ph.D. (Yale) .................................................................Professor of English
STEPHENV IVAN MILLER, Dr. A.B. (Stanford), LL.B. (Michigan), Professor of Economics; Dean of the College of Business Administration.
FRED CARLTON AYES, Ph.D. (Chicago) .................................................................Professor of Education
WILLIAM MAURiCH DIXON, Ph.D. (Illinois) ..............................................................Professor of Chemistry
HOWARD WOOLSTON, Ph.D. (Columbia) .................................................................Professor of Sociology

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MATTHEW LYLE SCONPER, Ph.D. (Chicago), Professor of Journalism; Director of the School of Journalism.

GEORGE McPhAIL SMITH, Ph.D. (Freiburg) .............Professor of Inorganic Chemistry

THOMAS LAMMERS KIBLER, Ph.D. (George Washington University), Professor of Transportation

HOWARD THOMPSON LEWIS, A.M. (Wisconsin) .......Professor of Business Administration

HUST PERSONS KIRKLAND, A.B. (Cornell) ............Professor of Forestry

*CHARLES EDWIN WEAVER, Ph.D. (California) ............Professor of Geology

JOHN LOCKE WORCESTER, M.D. (Birmingham School of Medicine) ......Professor of Anatomy

GEORGE WALLACH UFHELY, Ph.D. (Harvard) ............Professor of Spanish

HOWARD H. PEETSON, Ph.D. (Iowa) ....................Professor of Business Administration

ERIO TEMPLE BULL, Ph.D. (Columbia) .............Professor of Mathematics

EDWARD D. RANDOLPH, A.M. (Columbia) ..........Professor of Education

THOMAS KAT SIDST, Ph.D. (Chicago) ...............Associate Professor of Latin and Greek

EDWARD McMACHON, A.M. (Wisconsin) .............Associate Professor of American History

GEORGE SAMUEL WILSON, B.S. (Nebraska) .......Associate Professor of Mechanical Engineering

OTTO PATZER, Ph.D. (Wisconsin) ...........Associate Professor of French

CHARLES WILLIAM HARRIS, C.E. (Corry) ..........Associate Professor of Civil Engineering

VANDENBERGH CURTIS, Ph.D. (Harvard) ......Associate Professor of Economics

EDGAR ALLEN LOW, B.S. (E.E.) (Wisconsin).Associate Professor of Electrical Engineering

JOSEPH DANIELS, M.S. (Lehigh) ......Associate Professor of Mining Engineering and Metallurgy

HENRY LOUIS BOREL, Ph.D. (Corry) ............Associate Professor of Engineering Physics

GEORGE BURTON RIGG, Ph.D. (Chicago) ............Associate Professor of Botany

ARTHUR MAXWELL WINSLOW, Ph.B. (Brown), B.S. (Massachusetts Institute of Technology),

Associate Professor of Mechanical Engineering.

HUNTON DUNCAN MCKENZIE, Ph.D. (Chicago) ........Associate Professor of Sociology

EIIAS TRIZT CLARK, M.F. (Yale) ...............Associate Professor of Forestry

ROBERT MAX GADEZRT, Ph.D. (Munich) ..........Associate Professor of English

FREDERICK KURT KRISTEN, B.S., E.E. (Washington), Associate Professor of Electrical Engineering.

BOY MARTIN WINGR, Ph.D. (Johns Hopkins) ..........Associate Professor of Mathematics

HBRMAN VANCE TARAS, Ph.D. (Chicago) ..........Associate Professor of Chemistry

HENRY A. LANGHENALM, Ph.D. (Wisconsin) .........Associate Professor of Pharmacy

EDWARDS JAMES SANDERS, A.M. (Harvard) ...........Assistant Professor of Geology

EII VICTOR SMITH, Ph.D. (Northwestern) ...........Assistant Professor of Zoology

CLARENCE RAYMOND CURTIS, E.M. (Montana State School of Mines), A.M. (Corry),

Assistant Professor of Mining Engineering and Metallurgy.

HERBERT OTTO ECKHART, Ph.D. (Heidelberg) ...........Assistant Professor of German

JOHN WILLIAM HETON, Ph.D. (Harvard) ...........Assistant Professor of Botany

LEWIS IVEN TRICKN, Ph.D. (Pennsylvania) ...........Assistant Professor of Mathematics

SAMUEL EMMERIT ANDERSON, Ph.D. (Illinois) .......Assistant Professor of Physics

CURT JOHN DUGARIS, Ph.D. (Harvard) ............Assistant Professor of Philosophy

RICE LEONARD GRATI, M.S.F. (Washington) .......Assistant Professor of Forestry

FRED H. HEATH, Ph.D. (Yale) .............Assistant Professor of Electrical Engineering

*LESLIE FORREST CURTIS, B.B. (Tufts) ...........Assistant Professor of Philosophy

EDWIN RAY GUTHRIE, Ph.D. (Pennsylvania) ...........Assistant Professor of Psychology

HEWITT WILSON, Cert. Eng't. (Ohio State University) .......Assistant Professor of Ceramics

CURTIS TALMAGE WILLIAMS, Ph.D. (Clark) ..........Assistant Professor of Education

MARSH KERKIN, A.M. (Ohio) ...........Assistant Professor of Home Economics

LESBIE SPER, Ph.D. (Corry) ............Assistant Professor of Anthropology

J. PAGNOL JAMESON, D.Sc. (University of Aberdeen, Scotland), Assistant Professor of Zoology.

RALPH MARO BLAKE, Ph.D. (Harvard) .................Instructor in Philosophy

GRADUATE COUNCIL: DRAN PADDLEFORD, Chairman; DRAN CONDON, THOMSON, ROBERTS, and MAGNUSON; PROFESSORS MEYER, OSSOHN, FETE, HONTE, DUBEHN, WOODSTON, CURTIS, WILLIAMS AND GUTHRIE.
SPECIAL NOTE.—For detailed information concerning special facilities for graduate work in the various departments, consult the bulletin issued by the Graduate School.

The Aims of Graduate Study.—The principal aims of graduate study are the development of intellectual independence through the cultivation of the scientific attitude of mind, and the promotion of the spirit of research. The graduate student is therefore thrown more largely upon his own resources than the undergraduate, and must measure up to a more severe standard. The University is consistently increasing the emphasis upon graduate work in order that it may be a strong center for advanced study.

Organisation.—The Graduate School was formally organized in May, 1911. The graduate faculty includes:

1. All heads of departments which offer graduate work to major students and all full professors in such departments.

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.

Fees.—Graduate students pay a tuition fee of $15 a quarter for the autumn, winter and spring quarters, if residents of the State of Washington or of Alaska, or $50 a quarter for each of these quarters if non-residents. The regular fee for the summer quarter is $20 for students working at the University; $15, including a $3 laboratory fee, for students working at the Biological Station.

Members of the staff on a full-time teaching schedule are relieved of all tuition. Teaching fellows, graduate scholars—formerly known as graduate assistants and graduate readers,—and non-instructional employees of the University pay a tuition fee of one dollar per quarter for each credit hour on the election blank.

The incidental fees, such as library and laboratory fees, are required from all who receive graduate instruction.

GRADUATE FELLOWSHIPS AND SCHOLARSHIPS

Loretta Denny Fellowships.—Three fellowships, of $500 each, open to graduate students in any department of the University. Awarded by the faculty on the basis of scholastic excellence and general merit, but only to those who need financial assistance. Applications for these fellowships should be made on blanks supplied by the dean of the Graduate School, and must be in his hands on or before March 15 preceding the academic year for which the fellowships are to be granted.

Arthur A. Denny Fellowships.—Six fellowships of $500 each, open to graduate students in the departments of civil engineering, education, English, history, mining engineering, and pharmacy respectively. Awarded by the departments concerned on the basis of scholastic excellence and general merit, but only to those who need financial assistance. Applicants must be residents of the state of Washington. Applications for these fellowships should be made to the heads of the departments concerned on blanks supplied by them, and must be in their hands on or before March 15 preceding the academic year for which the fellowships are to be granted.
National Research Fellowships.—Fellowships in physics and chemistry, offered by the National Research Council, are open to promising research students, who have already taken the doctor’s degree or have equivalent qualifications. A successful candidate can pursue his research at any university or research-institute chosen by him and which is acceptable to the appointing board. The salary will ordinarily be $1800 for the first year. Fellows are eligible for successive reappointments ordinarily with increase in salary. For details address the dean of the Graduate School or the heads of the departments.

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 or the Arthur A. 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.

Research Fellowships in Mining and Metallurgy.—The College of Mines of the University in cooperation 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 $780 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.

Du Pont Fellowship.—Through its chemical department, Du Pont de Nemours & Co. offer a scholarship of $700 in chemistry, known as the “Du Pont Scholarship,” open to a senior student or graduate student in chemistry or chemical engineering.

The Bon Marche Industrial Fellowship.—The Bon Marche of Seattle offers an annual fellowship of $600 to a graduate student in Home Economics for research work in textiles. The recipient of this fellowship is required to give one fourth of her time for eleven months to the testing of textiles for the Bon Marche.

Research Fellowship in Geology.—A research fellowship, given anonymously and carrying a stipend of $500, is offered to a graduate student making a major in geology.

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. These fellowships range from $540 to $720.

Graduate Scholarships.—A number of graduate scholarships are open to students who perform service as laboratory assistants, assistants in charge of quiz sections, or readers. The remuneration is proportioned to the service, and ranges from $180 to $360.

Rosenberg Scholarship.—A scholarship of $200, known as the “Samuel Rosenberg Scholarship, endowed in loving memory by Ella S. Rosenberg, his wife,” is open to graduate students in French.
Three classes of students are recognized in the Graduate School:
1. Candidates for the master's degree.
2. Candidates for the doctor's degree.
3. Students not candidates for a degree.

Admission.—A graduate of the University or of any other institution of equal rank, will be given full graduate standing. Before being recognized as a candidate for a degree, however, a student must be approved by a committee appointed by the dean of the Graduate School, which shall also constitute the advisory committee to oversee the student's subsequent work. Unless the committee are already sufficiently acquainted with the candidate's capacity and attainments, there shall be a conference of the committee and the candidate, the purpose of which is twofold:

(a) To determine whether the student has the quality of mind and the attitude toward advanced work which would justify his going on for an advanced degree.

(b) To satisfy the major and minor departments and the graduate council that the student has the necessary foundation in his proposed major and minor subjects. If he lacks this foundation, he will be required to establish it through undergraduate courses or supervised reading.

If the student is from a college or university which falls below a satisfactory standard in curriculum, efficiency of instruction, equipment, or requirements for graduation, he may be required to take other undergraduate courses in addition to those required as a foundation in the major and minor subjects.

After having been approved by his advisory committee, a candidate for a degree must file with the dean of the Graduate School an outline of his proposed work, on a blank provided for that purpose. When it has received approval of the graduate council and the student has been notified, he will be regarded as a candidate for a degree.

Students on the Staff.—Assistants, associates, or others in the employ of the University are normally permitted to carry three hours of graduate work if full-time employees, and ten to eleven hours if half-time employees. Permission to exceed these hours must be secured from the dean of the Graduate School and the president.

Graduate Study in the Summer.—As the summer offers leisure for advanced study to a large number of teachers, the University lays special emphasis on graduate work during the summer quarter. Graduates of colleges or universities in attendance then are urged to enroll for the strictly graduate courses, as these courses give an opportunity to work with a select group of mature students toward the acquisition of an advanced degree.

Graduate students will enroll with the dean of the Graduate School.

Attendance during three summer quarters will satisfy the residence requirement for the master's degree. A fair amount of credit toward the doctor's degree may also be earned in the summer quarter.

Degrees

The Doctor's Degree

Doctor of Philosophy.—Graduate students will be received as candidates for the degree of doctor of philosophy in such departments as are adequately equipped to furnish requisite training. Each department introduces its pro-
gram of courses with a specific statement of the graduate training that it is
prepared to direct, and of the distinctive opportunities that it offers for
graduate work. This degree is conferred only on those who have attained
proficiency in a chosen field and who have demonstrated their mastery by
preparing a thesis which is a positive contribution to knowledge.

The requirements for the degree of doctor of philosophy are as follows:

1. At least three years of graduate work, of which not less than one
   year must be spent in residence at the University of Washington. If a can-
   didate is otherwise engaged in any regular employment, a correspondingly
   longer period of study will be required.

2. Completion of courses of study in a major and two minor subjects,
   the work in the minors to constitute approximately one-third of this work.
   The marks for graduate students shall be "passed" or "failed". In courses
   open to undergraduates and graduates, the passing grade for a graduate
   student shall be "B" or above if the course is in his major subject, "C" or
   above, if the course is in his minor subject. Before being recognized as a
   candidate for the degree, a student must be approved by a committee as
   provided above.

   These courses of study cover at least two years of work. The work of
   the first year is virtually identical with that for the master's degree, and
   normally the candidate will wish to take this degree incidentally; the work of
   the second year is of still more advanced character. Not earlier than the
   end of the second year and at least a year before the time when the can-
   didate expects to take the degree, the major and minor departments, supple-
   mented by a representative from the graduate council, shall submit the can-
   didate to a careful oral and written examination, to determine whether he has
   the native equipment and the scholarship to warrant him in continuing.

3. The preparation of a thesis, as stated above, embodying the results
   of independent research. This thesis may properly be initiated in the second
   year, and should occupy the greater part of the third year. If the thesis is
   of such a character, or falls in such a department, that it requires library
   or laboratory facilities beyond the resources of the University, the student
   will be required to carry on his investigation at some other university, at
   some large library, or in some special laboratory. This thesis must be ap-
   proved by a committee appointed by the major department, of which the in-
   structor in charge of the thesis shall be a member, and also by a special com-
   mittee from the graduate council.

4. Examinations as follows:

   The Preliminary Examination.—An oral and written examination, cov-
   ering the major and minor subjects. In so far as the examination is oral,
   it shall be before a committee appointed by the dean of not less than three
   representatives of the major department, not less than one representative of
   each of the minor departments, and a representative of the graduate council.
   The preliminary examination will normally be taken not less than two quar-
   ters before the final examination.

   The Final Examination.—An oral, or oral and written examination,
   covering the work of the candidate, especially that part of it in which the
   thesis falls. The examination shall be given by a committee appointed by
   the dean including, so far as feasible, all of the instructors with whom the
   student has worked and a representative of the graduate council. If there
   is division of opinion in the committee in charge of either examination, the
   case shall be decided by the graduate council, with right of appeal to the
   graduate faculty.
5. Evidence of a reading knowledge of scientific French and German and of such other languages as individual departments may require. Such evidence must be filed with the dean and approved by him at least one academic year before the degree is granted. Only in rare cases shall the requirement of a reading knowledge of scientific French and German be waived and then only when, in the judgment of the council, substitutions for either or both of these languages will be to the advantage of the student's training.

6. 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, at least four weeks before the date on which the candidate expects to take the degree.

The thesis, or such parts thereof, or such a digest as may be designated by the council, shall be printed. The candidate shall contribute $100 to a fund for printing of theses, whether his thesis appears in the University series or elsewhere. From this fund the library is provided with 150 copies and the candidate with 50 copies.

7. A card certifying that all courses and examinations have been passed and that the thesis has been accepted and properly filed in the library, shall be presented to the dean at least one week before graduation. This card must bear the signatures of all major and minor instructors in charge of the student's work, of the committee appointed by the major department to pass on the thesis, and of the librarian or his appointed representative.

THE MASTER'S DEGREE

Master of Arts.—The degree of master of arts implies advanced liberal training in some humanistic field, gained through intensive study of one of the liberal arts supplemented by study in one or two supporting subjects. This detailed study culminates in a thesis which, if not an actual contribution to knowledge, is concerned with the organization and interpretation of the materials of learning. Creative work of a high quality may be offered in lieu of a thesis.

Master of Science.—The degree of master of science implies training similar to the above in some province of the physical or biological sciences. The thesis for this degree, however, must be an actual contribution to knowledge.

The requirements for the degrees of master of arts and master of science are as follows:

1. At least three full quarters or their equivalent spent in undivided pursuit of advanced study. If a candidate has done graduate work elsewhere, his program may be slightly less exacting, but this work must pass review in the examination, and shall not reduce the residence requirement at this University.

2. Completion of courses of study in a major and one or two minor subjects, the whole to total not less than 36 hours, of which 24 are normally in the major. The marks for graduate students shall be "passed" or "failed". In courses open to undergraduates and graduates, the passing grade for a graduate student shall be "B" or above if the course is his major subject, "C" or above, if the course is in his minor subject.

The requirements of a minor or minors may be waived, but only on recommendation of the head of the major department and with the consent of the graduate council.
No work in the major subject may be counted toward the master's degree until the candidate has complied with the departmental requirements as to previous work in that subject, which in no case shall be less than eighteen hours.

Elementary or lower division courses may not count toward the minor requirement, and teachers' courses may not count toward either the major or minor requirements.

3. The preparation of a thesis, as defined above.

4. An oral, or written, or an oral and written examination, given by a committee appointed by the head of the major department, including so far as feasible, all the instructors with whom the student has worked. If division of opinion exists among the examiners, the case shall be decided by the graduate council, with right of appeal to the graduate faculty.

5. The candidate's thesis shall be in charge of the instructor in whose field the subject falls, and it must be approved by a committee of the major department, of which the instructor in charge shall be a member. If the committee is divided in opinion, the case shall be decided by the graduate council, with right of appeal to the graduate faculty. At least two weeks before the date on which the candidate expects to take the degree, one copy of the thesis in typewritten form or printed form (or library hand, in case the thesis is of such character that it cannot be typewritten) shall be deposited with the librarian for permanent preservation in the University archives. The thesis must meet the approval of the librarian as to form, and the cost of binding must be deposited with the thesis.

6. A card certifying that all courses and examinations have been passed, and that the thesis has been accepted and properly filed in the library, shall be presented to the dean at least one week before graduation. This card must bear the signatures of all instructors in charge of the student's work, of the instructors in charge of the thesis, and of the librarian or his appointed representative.

Master of Science in Technical Subjects.—The degree of master of science is given in technical subjects as follows:

- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Electrical Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Ceramic Engineering
- Master of Science in Coal Mining Engineering
- Master of Science in Geology and Mining
- Master of Science in Metallurgy
- Master of Science in Mining Engineering
- Master of Science in Forestry
- Master of Science in Fisheries
- Master of Science in Pharmacy

The requirements for these degrees are essentially the same as those for the degrees of master of arts and master of science.

Master's Degree in Technical Subjects.—The master's degree is given in technical subjects as follows:

- Master of Forestry
- Master of Business Administration
- Master of Laws
The requirements for these degrees are essentially the same as those for the degrees of master of arts and master of science, with the exception that all the work may be in the major.

PROFESSIONAL DEGREES

Professional Degrees.—The professional degrees of chemical engineer, civil engineer, electrical engineer, mechanical engineer, metallurgical engineer and engineer of mines may be conferred in three years on those who hold the bachelor of science degree in their respective lines from the University of Washington, who give evidence of having engaged continuously in acceptable engineering work and who present satisfactory theses.

COURSES

For description of courses, see Departments of Instruction, printed elsewhere in this catalogue. (See Index).
DEPARTMENTS OF INSTRUCTION

EXPLANATIONS

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.

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.

The descriptions of courses in each department include: (1) the number of the course as used in university records; (2) the title of the course; (3) a brief statement of its subject matter and method; (4) number of quarter credits given; (5) quarter in which it is given (autumn, winter, spring, summer); (6) name of instructor.

Courses preceded by an * are not given in 1922-1923.

AERONAUTICAL ENGINEERING

Engineering Hall

101. Aerodynamics.—Use of the wind tunnel in the determination of the characteristics of aerfoils, selection of aerfoils for a given purpose. Prerequisite, junior standing. Three credits. T. W. S. Kirsten

111. Aerial Propellers.—Study of the theory and design of airscrews including a review of the methods of calculating thrust and efficiency. Prerequisite, junior standing. Three credits. T. W. S. Kirsten

121. Airplane Design.—Selection of the type and construction of an airplane for a given purpose; computation of and performance from aerodynamic data; design of flying boats and seaplanes; the distribution of weights and the proportioning of parts. Prerequisite, A.E. 101. Three credits. W. S. Kirsten

**141. Airships.—Aerostatics, including a study of lighter-than-air machines. Prerequisite, A.E. 101, 121. Three credits. Kirsten

**161. Aerial Transportation.—Design and layout of landing fields and aircraft terminals. Aerial transportation as an industrial factor and as an instrument of warfare. Prerequisite, A.E. 111, 121, 141. Three credits. Kirsten

**Will be offered if a sufficient number of students elect the course.
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UNIVERSITY OF WASHINGTON

ANATOMY

Science Hall and Anatomy Laboratory

PROFESSOR WORCESTER

GROSS ANATOMY

101, 102, 103. General Human Anatomy.—Thorough study of the human body. Osteological collections loaned to the students. Especially intended for students taking the pre-medical, nurses’ or physical education courses; open to others. Prerequisite, Zool. 3 and 4 or their equivalent. Six credits a quarter; autumn, winter, and spring. Worcester.

104. Topographic Anatomy.—Cross and saggital sections for correlation. Prerequisites, Anat. 101, 102, and 103. Four credits; autumn, winter, spring. Worcester.

108. Special Dissections.—For physicians or students who have completed the above courses in gross anatomy. Hours and credits to be arranged; autumn, winter, spring. Worcester.

MICROSCOPIC ANATOMY

105, 106. Histology and Embryology.—Microscopic anatomy of developing and adult mammals studied both in their fresh and fixed conditions. Especially for students in pre-medical and nurses’ courses; open to others. Prerequisite, Zool. 3 and 4 or their equivalent. Six credits a quarter; autumn and winter. Worcester.

107. Neurology.—Dissection of the human brain and cord and special organs of sense; comparative developmental history of the central nervous system; a microscopic study of the nuclci and fiber tracts. Prerequisites, Anat. 105 and 106 or their equivalents. Especially for pre-medical students; open to others. Six credits a quarter; spring. Worcester.

200.—Graduate and research work in anatomy for those qualified. Credits and time arranged. Autumn, winter, spring. Worcester.

ARCHITECTURE

Education Hall

ASSOCIATE PROFESSOR GOULD; INSTRUCTORS, McCLELLAND, SEXSMITH

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 have credits in plane geometry, algebra through quadratics, trigonometry, physics, and at least two years of modern language. Forty hours of foreign language will be required before graduation. Twenty hours are provided for in the curriculum.


3. History and Elements of Architecture.—General survey of the important periods of architectural history studied, wherever possible, in terms of present-day conditions. Two credits; spring. Gould

4-5-6. Architectural Drawing.—Presentation of problems in architectural drawing based on the Greek and Roman Orders. Studies in plan, elevation, and section. Three credits a quarter; autumn, winter, spring. Sexsmith.

8. **Shades and Shadows.**—Construction by descriptive geometry of shades and shadows found in architectural renderings. Prerequisite, Arch. 7. Two three-hour laboratory periods a week. Two credits; winter. Sexsmith.

9. **Perspective Drawing.**—Theory of architectural perspective from simple problems in single point perspective up to and including the more complicated problems. Office methods and short-cut methods will be studied and compared with the theory. Two 3-hour laboratory periods. Prerequisite, Arch. 7. Two credits; spring.

10-11-12. **Free-hand Drawing.**—Fundamentals of free-hand drawing and free-hand perspective. Drawing in charcoal or crayon from cast or architectural ornament and from still life. One credit a quarter; autumn, winter, spring. McClelland.

13-14-15. **Dimension Drawing.**—Fundamentals of draftsmanship; orthographic projection, shades and shadows, perspective, brief study of the classic orders and mouldings. Majors in Painting, Sculpture and Design. Two credits a quarter; autumn, winter, spring. Sexsmith.

47-48. **Statics.**—Analysis of fundamental structural problems by application of the laws of equilibrium. Five credits a quarter; autumn and winter. Sexsmith.

51. **History and Elements of Architecture.**—Egyptian—Greek—Roman. Two credits a quarter; autumn. Gould.

52. **History and Elements of Architecture.**—Byzantine—Romanesque—Gothic. Two credits a quarter; winter.

53. **History and Elements of Architecture.**—Principals of design in terms of structural elements. Study and theory of planning. Two credits; spring. Gould and staff.

54-55-56. **Architectural Design.**—Problems in design and planning. Society of Beaux Arts Architects program will be used and work sent to New York City for judgment in competition with the work from leading architectural schools. Lab. deposit, $2. Five credits a quarter; autumn, winter, spring. Gould.

60-61-62. **Building Construction and Inspection.**—Lectures on building construction methods. Full size and large scale studies of detail. Inspection trips. Two credits a quarter; autumn, winter, spring. McClelland.

73-74. **Free-hand Drawing.**—Studies of architectural ornament and cast of the human figure. One credit a quarter; winter, spring. McClelland.


104-105-106. **Architectural Design.**—Advanced problems in ornamental design and planning as applied to different materials. Laboratory deposit, $2. Five credits a quarter; autumn, winter, spring. McClelland.

113-114. **Water Color.**—Still life studies, out-door subjects and architectural rendering. One credit a quarter; autumn, spring. McClelland.
Owing to Professor Boothroyd's resignation and the necessity on the part of the University to curtail expenses wherever possible, only courses 1 and 2 will be offered for the year, all other courses being temporarily suspended.

The work in astronomy is planned for two classes of students: (a) Those who desire some knowledge of astronomy as a part of a liberal education; (b) engineers and navigators who need some knowledge of the science as a part of their technical training.

In the College of Science, courses 11 and 12 satisfy the science requirements.

In the College of Liberal Arts, courses 11 and 131 are recommended for those electing astronomy for the science requirement. Those who want only five hours may take Ast. 11 or 1, 2 and 31.

1. Introduction to Astronomy.—Lectures illustrated by planetarium lantern slides and by views of the more interesting of the heavenly bodies with the equatorial telescope. Use of charts in the study of the sky with the unaided eye. Open to all students of the University. Lab. fee, $1. One credit; autumn, winter, spring. Smail.

2. Elements of Astronomy.—A descriptive course designed to give clear ideas regarding our place in the universe, the succession of the seasons, tidal phenomena, phases of the moon, etc., as well as some conception of the scope of astronomy and a clear idea of the scientific method. Five credits; autumn, winter, spring. Smail.

*11. The Solar System.—Observation and study of the real and apparent motions of the various bodies which make up the Solar System. Study of the fundamental principles of mechanics which are revealed through the science of astronomy. Five recitations and laboratory periods per week and three laboratory periods to be arranged. Lab. fee, $1. Five credits; autumn, winter.

*112. The Sun and Stars.—Prerequisite, course 11 and at least high school physics. Five recitation periods a week. Five credits; spring.

*123. Nautical Astronomy.—Actual determination of time, latitude and azimuth from observations made by the student with the sextant. Prerequisites, Math 52 and course 1 or the equivalents. Lab. fee, $2. Two lab. periods a week. Two credits; autumn.

*131. History of Astronomy.—An exposition of the scientific method as illustrated by the progress of astronomy. Prerequisites, course 11 or 2,
Physics 47, 48, 49 or equivalent. Two lecture and recitation periods a week. Two credits; spring.

*171. Engineering Astronomy.—Actual determination of time, latitude and azimuth from observations made on the sun and stars by the student with the surveyor's transit. Prerequisite, Math. 52, C.E. 21, and must be preceded or accompanied by course 1 or its equivalent. Two laboratory hours a week. Two credits; autumn. Lab. fee, $2.

*172. Geodetic Astronomy.—The precise determination of time, latitude and azimuth. Prerequisites, Ast. 171, Math. 62. Ten hours laboratory work a week. Five credits; winter. Lab. fee, $5.

BACTERIOLOGY AND PATHOLOGY

Science Hall
Professor Weinzirl; Assistant Professor Nickerson

With the exception of general bacteriology all the courses offered are applied in one of the following fields: (a) medicine; (b) sanitation; (c) industry. Laboratory work forms an important part of all courses.

SUGGESTED ELECTIONS

For majors in bacteriology:
Sophomore year ........................................... 101, 102, 103
Junior year ................................................... 104, 105, 106
Senior year ................................................... 210, 211, 212
213, 214, 215
For medical, dental students and nurses .................. 101, 105, 106
110, 111, 112
For home economics students ................................ 101, 102, 103
For fisheries students ...................................... 101, 102, 103
For pharmacists and engineers .............................. 101
For graduates .............................................. All courses above 100

4. Bacteriology of Foods.—S.C. Fisheries.—A brief study is made of the technique of handling bacteria. Most of the time is given to the bacteriology of fermentation, putrefaction, sterilization, sanitation, and canning. Lab. fee, $3; winter. Weinzirl.

101. General Bacteriology.—Technique in growing and examining bacteria, structure, functions and distribution; identification of species; study of common disease bacteria. Prerequisite, junior standing except for bacteriology majors. A knowledge of biology and general chemistry is desirable. Lab. fee, $3. Five credits; autumn, spring, summer. Weinzirl and assistant.

102. Sanitary Bacteriology.—Consideration of water supplies and sewage disposal; milk, meat and other foods; certain industrial applications; inspection trips. Prerequisite, Bact. 101. Lab. fee, $3. Five credits; winter. Weinzirl and assistant.

103. Public Hygiene.—Conservation of health; prevention of diseases; school hygiene; industrial hygiene, etc. Prerequisite, junior standing except for bacteriology majors. Five credits, lectures only, spring quarter. Weinzirl.

*Not offered in 1922-1923
104. **Serology.**—Consideration of the types of immunity; immunization of animals and man; study of immune products. Prerequisite, Bact. 101, and senior standing. Lab. fee, $4. Four credits; autumn.

105. **Infectious Diseases.**—Detailed study of the pathogenic bacteria, and methods of diagnosis of infectious diseases. Prerequisite, Bact. 101. Laboratory fee, $4. Four credits; winter.

106. **Clinical Diagnosis.**—Examination of sputum, urine, blood, gastric and intestinal contents, parasites, etc. Prerequisite, Bact. 101. Lab. fee, $4. Four credits; spring.

110. **Pathology.**—Gross and microscopic study of tumors. Class limited to ten students. Prerequisites, Bact. 101, Anat. 105. Lab. fee, $4. Three credits; autumn.

111. **Pathology.**—Gross and microscopic study of inflammation and degeneration. Prerequisite, Bact. 110. Lab. fee, $4. Three credits; winter.

112. **Pathology.**—Pathology applied to the systems of the body. Prerequisite, Bact. 111. Lab. fee, $4. Three credits; spring.

**GRADUATE COURSES**

204, 205, 206. **Advanced Bacteriology.**—The student may pursue work along the following lines: 1. technique; 2. physiology; 3. enzymes; 4. special groups of bacteria; 5. analysis; 6. diagnosis; 7. serology; 8. other topics on consultation. Not more than two topics may be taken during any one quarter. Laboratory work, written reports and conferences. Prerequisite, graduate standing. Lab. fee, $4. Five credits; autumn, winter, spring, summer. Weinzirl and assistants.

207, 208, 209. **Applied Bacteriology.**—By special arrangement the student may spend not less than 18 hours per week in the state and city laboratories. The student may do analysis one term, bacterial diagnosis a second term, and complement fixation a third term. Credit will depend upon a satisfactory statement from the director in charge of the laboratory. Prerequisite, graduate standing. Five credits; autumn, winter, spring, summer.

210, 211, 212. **Seminar.**—A consideration of topics not included in the regular courses; also reports on recent investigations and of research work done by the members. Prerequisite, senior or graduate standing, and Bact. 102 or 105. Two credits a quarter; autumn, winter, spring. Weinzirl.

213, 214, 215. **Research.**—Investigation of assigned problems. Open to qualified students after consultation. Credits and time to be arranged; autumn, winter, spring, summer.

**BOTANY**

*Science Hall*

**Professor Foth; Associate Professor Rigo; Assistant Professor Hotson**

**SUGGESTED SELECTIONS**

For the required biological science in the Colleges of Liberal Arts and Science, only courses 1, 2, 3, 105, 106, 107 will be accepted.

For a major: Courses 105, 106, 107, 140, 141, 142, 143, 144, 145 of which 105 and 106 are required.
For teaching botany: 105, 106, 107, 140, 141, 142, 143, 144, 145.
For pharmacy students: 13, 14.
For forestry students: 11, 12, 111, 140, 141, 142.
For fisheries students: 53, 130.

1. **Elementary Botany.**—The structure and functions of roots, stems, leaves and seeds. Only for those who have had no botany in high school. Five credits; autumn. Rigg and assistants.

2. **Elementary Botany.**—Types of the great groups of plants from the highest to the lowest. Open to students entering the second quarter without any previous botany. Five credits; winter. Frye and assistants.

3. **Elementary Botany.**—Plant analysis; field work with local flora. Open to students entering the third quarter without any previous botany. Five credits; spring. Frye and assistants.

8, 9, 10. **Ecology and Taxonomy.**—For city teachers. Field trips every other Saturday. Two to four credits a quarter; autumn, winter and spring quarters. Frye.

11, 12. **Foresters' Botany.**—Study of types of plants to illustrate the advance in complexity. For forestry students. Prerequisite, Bot. 1 or 2. Five credits a quarter; winter and spring. Hotson and assistant.

13, 14. **Pharmacy Botany.**—Gross structure of vegetative and reproductive parts of seeds; brief study of spore plants; microscopy of powdered drugs. Five credits, winter; four credits, spring. Rigg and assistant.

26. **School Garden.**—Prerequisite, Bot. 1, 2, or 10. Five credits; spring quarter. Hotson.

53. **Aquatic Botany.**—The plants of fresh water habitats especially those involved in the study of fishes and their culture. Five credits; spring. Hotson.

105, 106, 107. **Morphology and Evolution.**—Morphological study of types to show advances in complexity. Required for all majors unless courses 11 and 12 were taken in the freshman year. Prerequisite, Bot. 2 or 10, or Zool. 1 and 2, or senior standing without prerequisites. Five credits a quarter; autumn, winter, spring. Frye, and assistant.

111. **Forest Pathology.**—The recognition and treatment of common wood destroying fungi. Prerequisite, Bot. 10 or 105. Five credits; autumn. Hotson and assistant.

130. **Economic and Marine Botany.**—Economic marine plants, their condition, the products derived therefrom and the process of manufacture. Prerequisite one year of chemistry and junior standing. Four credits; autumn.

140, 141, 142. **General Fungi.**—Morphology and classification of fungi as a basis for plant pathology. Prerequisite, Bot. 11 or 105, junior standing. Five credits a quarter; autumn, winter and spring. Hotson.

143, 144, 145. **Plant Physiology.**—Prerequisite, two quarters of botany and Chem. 21, junior standing. Five credits a quarter; autumn, winter and spring. Rigg.

187. **Journal Club.**—Reviews of articles in current journals, suggested for seniors, graduates and instructors in the department. Prerequisite, junior standing; two years of botany. No credit; each quarter. Frye.
190, 191, 192. Rusts.—Morphology and classification of the Urediniales. Prerequisite, Bot. 142. Five credits a quarter; autumn, winter and spring. Hotson and assistants

GRADUATE COURSES

200. Proseminar.—Semi-independent work by students. Open only on consultation with the head of the department. Credit to be arranged. Frye, Rigg, Hotson

233. Research.—Credit to be arranged; any quarter. Frye, Rigg, Hotson

240. Phycomycetes.—Prerequisite, Bot. 142. Five credits. Any quarter. Hotson

241. Ascomycetes.—Prerequisite, Bot. 142. Five credits. Any quarter. Hotson


250. Algae.—Prerequisite, Bot. 105. Five credits; any quarter. Frye

251. Bryophytes.—Prerequisite, Bot. 106. Five credits; any quarter. Frye

252. Pteridophytes.—Prerequisite, Bot. 106. Five credits; any quarter. Frye

253. Gymnosperms.—Prerequisite, Bot. 107. Five credits; any quarter. Frye

254. Angiosperms.—Prerequisite, Bot. 107. Five credits; any quarter. Frye

261, 262, 263. Plant Pathology.—Study of diseases of plants and the fungi which produce them. Prerequisite, Bot. 142. Five credits a quarter; autumn, winter, spring. Hotson

271, 272, 273. Experimental Morphology.—Prerequisite is course 106, 145, one year chemistry, graduate standing. Two credits a quarter. Frye

279. Colloidal Biology.—Prerequisite, Bot 143, Chem. 32, graduate standing. Five credits; any quarter. Rigg

280. Micrometabolism.—Prerequisite, Bot. 12 or 107, 145, graduate standing. Five credits; any quarter.

CERAMICS

Mines Hall

ASSISTANT PROFESSOR WILSON

NOTE: Mining, metallurgical, geological, or ceramic experience. Each student is required to spend at least one summer vacation, or its equivalent, in practical contact with the industry, and to submit upon his return to college a detailed report of his observations. Work of this nature offers an opportunity to secure data and material for the graduation thesis.

90. Ceramic Materials.—Origin, occurrence, physical properties and preparation of clays, feldspar, limestone, magnesite, silica, and other materials used in the ceramic industry. Prerequisite, sophomore engineering or mining standing. Three lectures and recitations. Three credits; spring. Wilson

OK for fall F. W. Schroeder

Winter
DEPARTMENTS OF INSTRUCTION

*100 Ceramic Products. given winter (3)
*101. Drying and Burning.
*102. Ceramic Decoration.
*104, 105. Ceramic Calculations. given winter (3)
*110. Ceramic Physical-Chemical Measurements.
*121, 122, 123. Ceramic Products Laboratory. fall for 5
*125, 126, 127. Ceramic Plant Design.

140. Pottery.—Occurrence, winning and preparation of materials used in pottery manufacture. Processes used in molding, drying, firing, glazing, and decorating of pottery. Two lectures and recitations. Two credits; autumn.

Wilson

150. Lime, Plasters and Cements.—Raw materials, manufacture and testing of lime, calcined gypsum, sand-lime brick, and Portland cement. Prerequisite, Chem. 3. Three lectures and recitations. Three credits; winter.

Wilson

160. Glass Technology.—Theory and factory practice of glass manufacture. Prerequisite, Cer. 105. Two lectures and recitations. Two credits; autumn.

Wilson

170. Metal Enamels.—Theory and practice of metal enameling. Prerequisite, Cer. 105. Two lectures and recitations. Two credits; autumn.

Wilson

180. Refractories.—Origin, occurrence and physical properties of fireclays and other refractory materials. The manufacturing problems of fireclay, silica, magnesia, chromite brick, electric furnace products and special refractories. Prerequisite, junior standing. Two recitations and on lab. period. Lab. fee, $.5. Three credits a quarter; autumn, winter or spring.

191, 192, 193. General Ceramics.—Occurrence, winning and preparation of materials used in ceramics. Process used in preparation of raw materials, shaping, drying and firing of ceramic products. One recitation and two lab. periods. Lab. fee, $10. Three credits; autumn, winter and spring.

221, 222, 223. Ceramic Resources.—A study of the ceramic resources of Washington and the Pacific Northwest, or of some particular area in this region. Prerequisite, graduate standing. Hours and credits to be arranged.

Wilson

GRADUATE COURSES

231, 232, 233. Ceramic Manufacture.—Studies in the manufacture of clay products, especially the utilization of raw materials found in the Pacific Northwest. Prerequisite, graduate standing. Hours and credits to be arranged.

Wilson

CHEMISTRY

Bagley Hall.

PROFESSORS BENSON, JOHNSON, DENN, SMITH; ASSOCIATE PROFESSOR TARTAR; ASSISTANT PROFESSORS HEATH, THOMPSON, LYNN; INSTRUCTORS MCMLLIN, WHITWELL, POWELL, GAILLY; ASSOCIATES RADFORD, WHIPPLE, SIMON, DRAYES.

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 *Not offered in 1922-1923.
of culture and as a necessary complement of a liberal education. It is 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**

Students desiring to specialize in chemistry may select one of the three courses: (1) the elective curriculum designed for those who wish to take a general course in chemistry and leading to the degree of B.S. in the College of Science (see page 76); (2) the suggested curriculum designed for those who intend to make use of chemistry as a vocation and leading to the degree of B.S. in Chemistry (see page 78); (3) the prescribed curriculum in chemical engineering designed for those who plan to engage in the manufacturing industries and leading to the degree of B.S. in Chemical Engineering (see page 121.)

The fee for each laboratory course is $7.50 a quarter. This covers the general laboratory expenses such as gas, water, depreciation, etc. For the purchase of chemicals and apparatus, each student is required to buy a breakage ticket when he obtains his locker key. The cost of this ticket is $5. Any unused portion of the breakage ticket will be refunded.

1-2. General Inorganic Chemistry.—Fundamental chemical theory and the chemistry of the non-metallic elements. Open only to students not having had an accredited high school course in chemistry. Three lectures and two lab. periods a week. Five credits a quarter; any quarter. Smith, Tartar, Thompson

4. General Chemistry.—For short course miners. Three lectures and one 4-hour lab. period a week. No credit; winter. Thompson

5-6. General Chemistry.—Open only to women in home economics and physical education. Three lectures and two lab. periods a week. Five credits a quarter; winter, spring. Tartar

8-9-10. General Chemistry and Qualitative Analysis.—Open only to pharmacy students. The work in the spring quarter is qualitative analysis. Three lectures and two lab. periods a week. Five credits a quarter; autumn, winter, spring. Tartar

21-22. General Inorganic Chemistry.—Fundamental chemical theory and the chemistry of the non-metallic elements. Open only to students having had an accredited high school course in chemistry. Three lectures and two lab. periods a week. Five credits a quarter; any quarter. Smith, Tartar, Thompson

23. Elementary Qualitative Analysis.—Two lectures a week deal with the chemistry of the metallic elements. One lecture a week and the entire laboratory time is devoted to qualitative analysis. Prerequisite, Chem 2, 22 or equivalent. Three lectures and two lab. periods a week. Five credits; any quarter. Smith, Tartar, Thompson

37-38-39. Organic Pharmaceutical Chemistry.—Study of the organic chemicals of the U. S. Pharmacopoeia. Open only to pharmacy students. Prerequisite, Chem. 10 or its equivalent. Three lectures and two lab. periods a week. Five credits a quarter; autumn, winter, spring. Johnson

52. Chemical Technology.—Application of the preceding courses to chemical manufacturing practice. No fee. Prerequisites, Chem. 23, Physics 97, Math. 61. Three lectures. Three credits; spring. Whitwell
101. Advanced Qualitative Analysis.—Two lectures and three lab. periods a week. Prerequisite, Chem. 23 or its equivalent. Five credits; autumn, winter, spring.

Thompson

104. Food Chemistry.—For home economics students. Methods of analysis of various foods and federal and state laws studied. Two lectures and two lab. periods a week. Four credits; spring.

Lynn

105, 106, 107. Food Chemistry.—Laboratory and class work in analysis of food products and study of federal and state laws regulating the sale of food products and drug products. Five credits per quarter; autumn, winter, spring.

Lynn

111. Quantitative Analysis.—A brief course which deals with both gravimetric and volumetric methods. Prerequisite, Chem. 23 or its equivalent. Two lectures and three lab. periods a week. Five credits; autumn, winter, spring.

Heath

112. Quantitative Analysis.—Gravimetric analysis. Prerequisite, Chem. 23 or its equivalent. Two lectures and three lab. periods a week. Five credits; autumn, winter, spring.

Heath

113. Quantitative Analysis.—Volumetric analysis. Two lectures and three lab. periods a week. Prerequisite, Chem. 23 or its equivalent. Five credits; autumn, winter, spring.

Heath

114. Advanced Quantitative Analysis.—Two lectures and three lab. periods a week. Prerequisite, Chem. 23, and either 112 or 113. Five credits; autumn.

Heath

116, 117, 118. Industrial Chemistry.—Brief course covering the materials and processes involved in the manufacturing industries. Autumn—fuels, materials of construction, water supply and sanitation; winter—acids, alkalies and salts; spring—technology of oils, fats, resins and waxes. Any quarter's work may be taken separately. Three lectures. Prerequisite, Chem. 3 or 23 or equivalent. No fee. Three credits a quarter; autumn, winter, spring.

Benson

121, 122, 123. Industrial Chemistry.—Autumn—fuels, gases, cements, refractories, iron and steel, and alloys with special reference to technical testing; winter—machinery and processes for the manufacture of acids and alkalies; spring—organic industrial chemistry, particularly with the technology of oils, fats, paints, rubber and cellulose products. The work of each quarter may be undertaken independently. Three lectures and two lab. periods a week. Prerequisite, Chem. 52, 111 or equivalent. Five credits a quarter; autumn, winter, spring.

Benson, Whitwell

128-129. Organic Chemistry.—Brief course for medical, chemical engineering and technical students. Three lectures and two lab. periods a week. Prerequisite, Chem. 23 or its equivalent. Five credits a quarter; winter, spring.

Benson, Whitwell

131, 132, 133. Organic Chemistry.—For major students in chemistry and for students in the College of Science. Three lectures and two lab. periods a week. Prerequisite, Chem. 23 or its equivalent. Five credits; autumn, winter, spring.

Dehn

*Not offered in 1922-1923.
134. Manufacture of Industrial Organic Chemicals.—Laboratory course in the preparation of organic chemicals on a semi-commercial scale which may be taken independently or in lieu of the regular laboratory work in course 129 or 133. Two lab. periods a week. Two credits; spring. Powell.

135-136. Organic Chemistry.—For home economic students. Only women are admitted. Three lectures and two laboratory periods a week. Prerequisite, Chem. 6 or its equivalent. Five credits a quarter; autumn, winter. Powell.

141-142. Physiological Chemistry.—General course for students of medicine, biology and bacteriology. Chemical composition of foods, tissues, secretions and excretions, their physiological and pathological changes. Prerequisite, Chem. 111 or 113 and 129 or equivalent. Three lectures and two lab. periods. Five credits; autumn, winter. Gailey.

144. Physiological Chemistry.—For fisheries and other technical students. Prerequisite, Chem. 129 or its equivalent. Three lectures and two lab. periods a week. Five credits; spring. Gailey.

146. Chemistry of Blood and Urine.—Study of normal and pathological blood and urine. Intended for pre-medical students, nurses and clinical technicians. One lecture and two lab. periods. Prerequisite, Chem. 111 or 113 and 120. Three credits; spring. Gailey.

150. Industrial Seminar.—A special course for advanced students will be given each year by members of the staff especially qualified for some particular subject. During 1922-23 the subject will be synthetic dye-stuffs. Lectures and laboratory periods will be arranged. Two credits; winter. Dehn.

160-161. Elementary Physical Chemistry.—Brief course, general survey, descriptive, non-mathematical, particularly for the needs of premedic and science students majoring in subjects other than chemistry. Chemistry majors may, with the instructor's permission, take this instead of 181-182. Two lectures and one lab. period. Prerequisites, Chem. 111 or equivalent and ten hours of physics. Three credits a quarter; winter, spring. Tartar.

181-182. Physical and Theoretical Chemistry.—Course deals with the fundamental theories of chemistry based upon physical and chemical measurements. Three lectures and two lab. periods a week. Prerequisite, Physics 2 and Chem. 113. Five credits a quarter; autumn, winter. Tartar.

183. Electro-Chemistry.—Theories and laws of voltaic currents and laboratory work with electro-chemical processes and measurements. Three lectures and two lab. periods a week. Prerequisite, Chem. 182. Five credits; spring. Tartar.

*184. Chemistry of Colloids.

192. Chemistry of Plants and Animal Tissues.—Application of physiological chemistry to the study of biology. Prerequisite, Chem. 111 or 113 and 129. One lecture and two lab. periods. Three credits; winter. Gailey.

193. Chemistry of Nutrition.—Study of enzyme and chemical reactions involved in digestion and metabolism. Prerequisite, Chem. 111 or 113 and 129. Two lectures and one lab. period a week. Autumn. Gailey.

200. Journal Seminar.—Advanced students may register for assigned readings and reports on the chemical literature. Different members of the

*Not offered in 1922-1923.
staff will have charge of the course during the various quarters. No fee. One credit a quarter; autumn, winter, spring.

GRADUATE COURSES

203. Advanced Physical Chemistry.—Chemical statics and dynamics. Prerequisite, Chem. 182 or equivalent. No fee. Three lectures. Three credits; autumn.

205, 206, 207. Inorganic Preparations.—Preparation of special substances involving representative laboratory methods. Any quarter may be taken independently. Two lab. periods a week. Two credits a quarter; autumn, winter, spring.

208 — Seminar — 2 hrs

210, 211, 212. Organic Preparations.—Preparation of special substances involving representative laboratory methods. Any quarter may be taken independently. Two lab. periods. Two credits a quarter; autumn, winter, spring.

213. Organic Analysis.—Special methods used in the analysis of organic substances. Two lab. periods a week. Prerequisite, Chem. 133 and 113. Two credits; autumn.

215, 216, 217. Chemical Engineering.—For seniors and graduates in chemical engineering. Autumn—course consists of selected chemical processes with special emphasis on the factors of control and inspection; winter—preparation of drawings and specifications of fundamental apparatus such as driers, coolers, grinders, conveyors, evaporators, and stills, together with computations of heat interchange, etc.; spring—the evolution of a chemical process from assigned raw materials quantitatively and experimentally tested. This quarter's work may be reported in the form of a thesis for the bachelor's degree. Prerequisite, Chem. 123, C.E. 2 and M.E. 90. Lab. hours and fees to be arranged. Five credits a quarter; autumn, winter, spring.

Benson, Whitwell.

*219. Advanced Chemical Engineering.

221, 222, 223. Advanced Inorganic Chemistry.—A comprehensive course based on the periodic system of the elements; illustrative applications of various laws and theories. Two quarters devoted to the elements and their ordinary compounds, and one quarter to the chemistry of the higher order compounds. Recommended for all majors and graduate students. No fee. Two credits a quarter; autumn, winter, spring.

224, 225. History of Chemistry.—Lectures and assigned reading. No fee. Prerequisite, Chem. 133, 182. Two credits; autumn, winter.

231, 232, 233. Advanced Organic.—Detailed study of special fields of organic chemistry. Any quarter may be taken independently. Prerequisite, Chem. 129, 182. No fee. Three lectures; three credits a quarter; autumn, winter, spring.

Dehn.

250. Research.—The work in research is of three types: (1) Special investigations by advanced students may be carried on under the direction of members of the staff. (2) Research for the master's degree. Maximum credit is nine hours. (3) Research for the doctor's degree. Work for this degree may be carried on under the direction of any member of the regular staff of the department. Maximum credit is forty-five hours.

*Not offered in 1922-1923.
1. Engineering Drawing.—Lettering; engineering sketching, fundamental principles of working drawings; mapping, map conventions. Lab. deposit, $2. Three credits; autumn, winter, spring. White.

2. Engineering Drawing.—Detail and assembly drawings; readings of drawings; use of instruments; tracing; standards and conventions. Prerequisite, C.E. 1. Three credits; autumn, winter, spring. White.

4. Topographic Surveys.—Field and office collection of information and platting of field notes for topographic surveys. For geology students. Lab. fee, $2. Three credits per quarter; spring. Wilcox.

11. Engineering Problems.—Training in methods of attacking, analyzing and solving engineering problems. Coaching in proper methods of work and study, including training in systematic arrangement and clear workmanship. Deals mainly with the dynamic side of the problems. Three credits; autumn, winter, spring. Truesdell.

12. Engineering Problems.—Continuation of the work in C.E. 11 but devoting most of the time to statics. Prerequisites, C.E. 1, C.E. 11 and Math. 51. Must be preceded or accompanied by Math. 52. Three credits; autumn, winter, spring. Truesdell.


21. Plane Surveying.—Surveying methods, instruments, computations, mapping. U. S. public land surveys. Prerequisites, C.E. 1 and Math. 52. All freshmen engineers. Laboratory fee, $2. Three credits; autumn, winter, spring. Rubey.


23. Higher Surveying.—Meridian observations; triangulation and base line measurements; computations and adjustment of measurements; plane table surveying. Prerequisite, C.E. 21. Laboratory fee, $2. Four credits; winter. Rubey.

24. Field Engineering.—Field and office practice in the survey of highways, railroads, canals, etc. Prerequisites, C.E. 21 and C.E. 22. Laboratory deposit, $2. Four credits; spring. Rubey.

27. Mine Surveying.—Surface and underground practice; observation for meridian; topography; mining claim survey; tunnels, and vertical shaft work and connections; mapping. Prerequisite, C.E. 21. Sophomore mining engineers. Laboratory deposit, $2. Three credits; winter. Rubey.

30. Surveying.—(Short session in Forestry). Laboratory fee, $2. Five credits; winter. Hamilton.
38. Surveying.—(Short session in Mining). Laboratory fee, $2. Five credits; winter. Rubey.

55. Forest Surveying.—For students in forestry. Laboratory fee, $2. Two credits; winter. Hayden.

56. Forest Surveying.—Chain, compass, transit and level surveying, with reference to work in forestry. Laboratory fee, $2. Five credits; spring. Rubey.

91, 92, 93. Mechanics:—For Civil Engineers.—Applications of elementary principles of statics, dynamics, and mechanics of materials. Prerequisite C.E. 12. Three credits a quarter; autumn, winter, and spring. More.

112. Railway Construction.—Railway construction methods, machinery and tools; details of track, and terminal structures. Prerequisite, C.E. 24. Three credits; winter. Withdrawn Rubey.


122. Highways.—Location and construction of standard types, with application to local conditions. Prerequisite, C.E. 22. Three credits; spring. Allison.

**126. Roads and Pavements.—Materials, construction and maintenance. Laboratory study of materials used in pavements. Prerequisite, C.E. 122. Laboratory deposit, $2. Five credits; autumn. Allison.

131. Mechanics.—Algebraic and graphic application of elementary principles of statics. Prerequisites, C.E. 12 and Math. 62. Three credits; autumn, winter, or spring. More.

132. Mechanics.—Application of elementary principles of dynamics. Prerequisite, C.E. 131. Three credits; autumn, winter or spring. May.

133. Mechanics.—Continuation of C.E. 131 and C.E. 132; and mechanics of materials. Prerequisite, C.E. 132. Three credits; autumn, winter, spring. Dana.

134. Framed Structures.—Application of mechanics to analysis of structural details and simple framed structures. Prerequisite, C.E. 93 or C.E. 133. Three credits; autumn. Rathbun.


139. Reinforced Concrete.—Fundamental principles of reinforced concrete. Prerequisite, C.E. 93 or C.E. 133. Three credits; spring. More.

142. Hydraulics.—Flow of water through pipes, orifices, over weirs, and in open channels; energy and reaction of jets with application to impulse wheels; review of hydrostatics. Prerequisite, C.E. 131 or C.E. 93. Laboratory deposit, $2. Five credits; autumn, winter, spring. Harris.


**Will be offered if a sufficient number of students elect the course.
**145. Hydraulic Machinery.—Development and theory of water wheels and turbine pumps; design of a reaction turbine; reference to hydrostatic machinery and dredging equipment. Prerequisite, C.E. 142. Senior and graduate E.E. and M.E. Three credits; winter. Harris.

147. Hydraulic Power.—Generation of power; penstock and turbines; types of installations. Prerequisite, C.E. 142. Senior and graduate E.E. Five credits; spring. Harris.

153. Water Supply.—Principal engineering operations necessary to secure suitable water supplies for cities, towns and industrial plants. Senior and graduate C.E. Prerequisite, C.E. 142. Three credits; autumn. Allison.

154. Sewerage and Drainage.—Design and construction of sewerage and drainage systems for cities and towns. Senior and graduate C.E. Prerequisite, C.E. 142. Three credits; winter. Allison.

155. Water Supply Problems.—Methods used in obtaining a suitable supply; purification of water. Senior and graduate C.E. and Ch.E. Prerequisite, C.E. 142. Three credits; winter. Allison.


**158. Sewage Treatment.—Supplementary to C.E. 154, especially relating to public health; sewage disposal; garbage collection and destruction. Senior and graduate C.E. and Ch.E. Three credits; spring. Allison.

**160. Building Construction.—Study of construction problems from the standpoint of the builder. Prerequisite, C.E. 93 or C.E. 133. Three credits; spring. Weld.


167. Materials of Construction.—The properties of materials used in engineering construction; timber, concrete, steel, etc. Recitations and laboratory. Prerequisite, C.E. 93. Lab. fee, $2. Five credits; autumn. Collier.

169. Engineering Relations.—Consideration of the construction and operation of projects, and of the involved business relations. Prerequisite, senior standing. Five credits; autumn. Rubey.


210, 212, 214. Research.—Time to be arranged. Two to five credits; autumn, winter, spring.

CLASSICAL LANGUAGES AND LITERATURE

Denny Hall

Professor Thomson; Associate Professor Sidney; Assistant Professors Dinsmore, Clark

Requirements for a major: at least 36 hours in the department, chosen from the courses other than Greek 11 and 13-14; Latin, 1, 2, 3, 4, 5, 6, 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.

**Will be offered if a sufficient number of students elect the course.
1-2-3. Elementary Greek.—Introduction to a knowledge of the Greek language is made through the medium of Homer. Book I of the Iliad will be covered during the year. To insure proper adaptation to the ability of the student, the method of supervised study will be followed during one afternoon period each week. Five credits a quarter, beginning any quarter. Densmore.

4-5. The World of Homer.—Readings from the story of Achilles and the wanderings of Odysseus on a background of a general study of the history of the period down to Hesiod. Three credits; autumn, winter. Densmore.

6. The Persian War Period.—Wide readings in Herodotus. Three credits; spring. Densmore.


*8-9-10. Greek Art.

11. Greek Civilization.—Institutional and cultural survey of the Greek world from the earliest times to the Roman conquest. Illustrated lectures, conferences and discussions. Knowledge of Greek not required. Five credits; autumn. Densmore.


14. Greek and Roman Literature.—Continuation of course 13 but may be elected by those who have not had Greek 13. Five credits; autumn, winter, spring. Sidey.

15-16. Greek Civilization and Literature.—Duplication of course 11, but including the literature in translation as a fundamental expression of the Greek genius. Five credits a quarter; winter, spring. Densmore.

101-102-103. The Periclean Age.—An intensive study of Greek civilization from the founding of the Delian confederacy to the death of Socrates. Readings, conferences, and reports. Prerequisite, Greek 4-5 or equivalent. Three credits a quarter; autumn, winter, spring. Densmore.

104-105-106. Greek Poetry.—Lyric, dramatic, pastoral. Prerequisite, Greek 6. Two credits a quarter; autumn, winter, spring. Densmore.


151-152-153. Plato: The Republic.—Three credits a quarter; autumn, winter, spring. Densmore.

1-2-3. Elementary Latin.—Course covers the first and second years of high school Latin. Designed to help those who have previously had little or no Latin to an appreciation of the sources of the English and Romanic languages, as well as to enable those who desire to study Latin more thoroughly to bring their preparation up to the college requirements. It will be given if any considerable number of students desire it. Five credits a quarter; autumn, winter, spring. Sidey.

*Not offered in 1922-1923.
4-5-6. **Third Year Latin.**—Open to those who have completed two years of high school Latin or who have had Latin 1-2-3 in the University. May be used as a substitute for the requirement in ancient language, Life and Literature and will also qualify a student to enter Latin 21. The work will consist of a review of grammar and syntax and the study of selections from Cicero and Vergil. Five credits a quarter, autumn, winter, spring. Thomson, Clark.

11. **Roman Civilisation.**—The part played in history by the Romans; their contributions to modern civilization. Lectures, illustrated, when possible; collateral reading and reports. Five credits; autumn, winter, spring. Clark.

13. **Roman Literature.**—(See Greek 13-14.)

14-15-16. **Roman Art.**—Roman architecture for two quarters, followed by sculpture, numismatic and minor arts. Illustrated by photographs and slides. Primarily for students of fine arts but open to all. Alternates with the course in Greek art. One credit a quarter; autumn, winter, spring. Sidey.

21. **Cicero De Senectute.**—Comparison of Cicero's work with similar essays. Exercises in grammar and composition. Prerequisite, three and one-half years of high school Latin. Five credits; autumn. Clark.

22. **Ovid.**—Selections, chiefly from the Metamorphoses, with some study of the same myths as they appear in English literature. Grammar and composition. Prerequisite, three and one-half years of high school Latin. Three or five credits; winter. Clark.

23. **Catullus.**—The Latin lyric. Emphasis upon finished translation and comparison of the best English versions; grammar and composition. Prerequisite, three and one-half years of high school Latin. Three or five credits; spring. Clark.

50. **Livy.**—One book and selections from the other books. Prerequisite, Latin 21, 22, 23, or special permission. Five credits; autumn. Thomson.

60. **Horace: Odes; Vergil: Eclogues.**—Prerequisite, Latin 21, 22, 23 or special permission. Five credits; winter. Thomson.

70. **Tacitus: Agricola; Martial: Epigrams.**—(Selections). Prerequisite, Latin 21, 22, 23 or special permission. Five credits; spring. Thomson.

106. **Syntax and Prose Composition.**—Prerequisite, Latin 50 or 60 or 70. Three credits; autumn. Clark.

107. **The Age of Cicero.**—A study of selected portions of Cicero's Letters and the Civil War of Caesar. Prerequisite, Latin 50, 60 or 70. Three credits; winter (Not to be offered in 1923-1924). Clark.

108. **Vergil's Aeneid.**—(To be offered in 1923-1924). Clark

109. **Tacitus' Annals.**—A reading course. Prerequisite, Latin 50, 60 or 70. Three credits; spring. Clark.

*110. **Lucretius.**

*111. **The Roman Epic.**

*112. **Short Stories from Apuleius.**

151. **Latin Satire.**—A study of Horace, Juvenal and minor satirists. Two credits; autumn. Sidey.

*Not offered in 1922-1923


Note—For courses in Comparative Philology, see the department of Scandinavian Languages and Literature.
Note—For teachers' course in Latin, see department of education, Educ. 100.C.

DRAMATIC ART
Denny Hall
PROFESSOR GORSUCH; INSTRUCTOR HUGHES

The work in this department is planned for three classes of students: (a) those who desire some knowledge of dramatic art as part of a liberal education; (b) those who need some knowledge of dramatic art as part of their technical training; and (c) those who wish to pursue the subject more intensively than either of the former groups, except courses 101-102-103.

For a major the department requires 38 to 60 credits, of which 24 must be in the department, including courses 1-2-3 and 21-22-23.

Courses 1-113 (inclusive) may be entered at the beginning of the first, second or third quarters.

1-2-3. Dramatic Literature.—Introductory course. Selected plays of the great dramatists are studied with the purpose of increasing the student's power of analysis and appreciation. Three credits a quarter; autumn, winter, spring. Gorsuch.

21-22-23. Shakespeare.—Dramatic reading and interpretation of selected plays. Courses 21-22-23 have as their general purpose the interpretation of the drama. Selected plays are used as exercises in dramatic delivery and for the study of effectiveness in the heading of lines. The special aims are to correct personal mannerisms of vocal expression and to encourage habits of speech that are right and natural; to cultivate proper instinctive expression, and the use of imagination in conceiving the situation, relation and characterization as these are manifested in utterance. Three credits a quarter; autumn, winter, spring. Gorsuch.

27-28-29. Contemporary Drama.—Dramatic reading and interpretation of selected plays. For further information see courses 21-22-23. Gorsuch.

31. Practical Public Speaking.—An introductory course. Principles of public speaking are studied and short, original talks are prepared and delivered. Prerequisite, English 1. Three credits a quarter; autumn, winter, spring. Gorsuch.

32-33-34. Practical Public Speaking.—Prerequisite, Dram. Art 31, or junior standing. Three credits a quarter; autumn, winter, spring. Gorsuch.

101-102-103. Play-acting and Play-producing.—A practical course in the art of acting, with some time given to the problems of producing. Includes work in interpretation of both standard and original plays. Four credits a quarter; autumn, winter, spring. Hughes.

111-112-113. Play-writing.—A study of the principles of dramatic composition, together with experimental creative work. Five credits a quarter; autumn, winter, spring. Hughes.

Work to be announced later will include courses in producing, general stagecraft.
Those students in Liberal Arts choosing economics as their major, should consult with the head of the department or the professor in charge of Advanced Economics with regard to a proper selection of courses. The following courses may be regarded as available for such students: 1, 2, 57, 58, 61, 104, 105, 106, 121, 123, 127, 159, 160, 161, 162, 164, 165, 168, 201, 205, 207.

1. General Economics.—Introductory course covering general principles of economics. Prerequisite to all sophomore, junior and senior courses in bus. admin. Fee, $1.50. Five credits; autumn, winter, spring, summer.

2. General Economics.—Same as B.A. 1 above, abbreviated for chemistry, pharmacy, forestry and fisheries. Fee, $1.50; Three credits; spring.

7. Economic Resources of the World.—Study of world’s principal agricultural and mineral resources; geographical distribution and development; governmental policies of conversation; world commerce, trade routes. Fee, $1.50. Five credits; autumn, winter, spring.

11. First Year Accounting.—First half. Functions of accounts; trial balances; balance sheets; profit and loss statements; books of original entry; ledgers; business forms and papers. Given all four quarters. Fee $5.50. Five credits. Sections: Woodbridge, Butterbaugh, Dickerson.

12. First Year Accounting.—Second Half. Accounts peculiar to partnerships and corporations; correct classification of accounts; manufacturing and cost accounts; controlling accounts and subsidiary ledgers; voucher system. Given all four quarters. Fee, $5.50. Five credits. Sections: McGirr, Trow, Lamont.

52. Navigation.—Correction of courses; the sailings, dead reckoning, piloting, latitude, longitude, azimuth, amplitude, determination of position at sea by the methods of Marc Saint Hilaire and Aquino; compass adjusting. Fee, $1.50. Five credits; spring and summer.

54. Business Law.—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 papers; insurance partnership and corporations with special lectures on the statutory regulations pertaining thereto. Fee, $1.50. Three credits; autumn.


57. Money and Banking.—An introductory course. Among the subjects considered are the functions of money; standards of value; financial conditions, and the principles of banking with special reference to the banking system of the United States. Prerequisite, B.A. 1 Fee, $1.50. Five credits; autumn, winter, spring.
58. Risk and Insurance.—Study of the risk factor in its economic and social consequence; ways of meeting risk; the general broad outline of life, fire and other insurance. Prerequisite, B.A. 1. Fee $1.50. Five credits; autumn.
Smith.


64. Second Year Accounting.—First Half. Preparation of balance sheets and profit and loss statements; factory costs; general principles of valuation; causes and methods of treating depreciation; capital and revenue concepts. Given all four quarters. Prerequisite, B.A. 11-12. Fee, $3.50. Five credits. Sections: Gregory and Tarbill.

65. Second Year Accounting.—Second Half. Valuation of balance sheet and revenue statement items; surplus and reserves; dividends; sinking funds; liquidation of partnerships and corporations; consolidated balance sheets; reports of trustees and receivers. Given all four quarters. Prerequisite, B.A. 11-12. Fee, $3.50. Five credits. Sections: Draper and Van de Walker.


67. Paper Work in Shipping.—Study of the forms used in documenting, entering and clearing, and in making coastwise and foreign shipments, with the solution of a number of practice problems. Fee, $1.50. Five credits; autumn and winter. Farwell.

81. Typewriting I.—Beginners' course in typewriting technique. Two class hours and eight practice hours weekly. Fee $10. No credit; autumn, winter, spring. Hamack and Newman.

82. Typewriting II.—Continuation of B.A. 81, with attention to speed, accuracy, form, etc. Fee $10. No credit; autumn, winter, spring. Hamack.

83. Office Training.—Designed to familiarize the student with the work of the business office. The laboratory method is used as far as facilities will permit; this training supplemented by surveys of the office equipment and routine in some of the local business establishments. Prerequisites, B. A. 81, 82, 84, 85. Fee $10. Three credits; autumn, winter, spring. Hamack.

84. Shorthand I.—Beginner's course in shorthand theory and technique. Fee $10. No credit; autumn, winter, spring. Hamack.

85. Shorthand II.—Continuation of B.A. 84. Fee $10. No credit; autumn, winter, spring. Hamack.

86. Shorthand III.—Continuation of B.A. 85, with dictation. Fee, $10. No credit; autumn; winter, spring. Hamack.

87. Practical Reporting.—Training and drill are given in reporting court procedure, sermons, conference discussion and debate, etc. Fee, $10. No credit. Prerequisites, B.A. 84, 85, 86. Autumn, winter, spring. Hamack.

101. Secretarial Training.—The functions of the secretary, modern methods of organizing, systematizing, the work of the ordinary business office. Includes study of the use of office appliances, indexing, filing, refer-
ence work, interviewing, business ethics, practical details of office work. Prerequisites, B.A. 81, 82, 84, 85 or equivalent. Fee, $1.50. Five credits; autumn.

102. Office Management.—General survey of the office manager’s problems of office administration. Attacks the problem of office control by the various activities and study each in relation to all the others. Fee, $1.50. Five credits; winter.

104. Economics of Transportation.—Study of the relation of transportation to industry and society; development and present status of American transportation system; organization of the service; traffic associations; classification territories; routes; traffic agreements; rates and regulations. Prerequisite, B.A. 1. Fee, $1.50. Five credits; autumn.

105. Business Organizations.—Study of business corporations, associations, combinations; special reference to their functions, operation, advantages and disadvantages; relation to the anti-trust laws. Prerequisite, 10 hours of economics and business administration, including B.A. 1. Fee, $1.50. Five credits; autumn.

106. Economics of Markets.—Application of the principles of economic theory to problems of marketing; a general survey of modern marketing methods in raw and manufactured products. Prerequisite, B.A. 1. Fee, $1.50. Five credits; autumn.

109. Marketing of Lumber.—Study of the inter-relations of manufacturers, wholesalers and retailers of lumber applying economic principles to effective methods of marketing lumber. Fee, $1.50. Five credits; spring.

111. Third Year Accounting.—First Half. Advanced partnership and cooperation accounting; nature of profits, dividends, the legal status of same; statement of affairs; realization and liquidation accounts. Fee, $3.50. Prerequisites, B.A. 64-65. Five credits; autumn, winter, spring.

112. Third Year Accounting.—Second Half. Bond and stock issue problems; premiums and discounts on securities; funds and reserves; mergers and consolidations; graphs and comparative statements; estate accounting. Prerequisites, B.A. 64-65. Fee, $3.50. Five credits; autumn, winter, spring.

113. Ports and Terminals.—Study of the factors of a well coordinated port; modern terminal facilities; representative river, lake and sea ports. Fee, $1.50. Three credits; autumn and winter.

119. Water Transportation.—Study of the economics of shipping with particular reference to organization and management; ship building and operating costs; rate practice and control; pools, agreements and conferences; ocean routes; shipping subsidies, etc. Fee, $1.50. Five credits; spring and summer.

120. Business Report Writing.—Study of the methods of securing and arranging facts, use of references, preparation of outlines, effective presentation of material including use of charts or graphs, checking or proof reading. Special attention to accounting papers. Fee, $1.50. Five credits; autumn, winter, spring.

121. Corporation Finance.—Financial problems connected with the promotion of corporations, underwriting and sale of securities, management, expansion and reorganization of those that are unsuccessful. Prerequisites, B. A. 1, 11-12. Fee, $1.50. Five credits; winter.
122. Railroad Finance and Administration.—Study of the organization and administration of the departments of the modern American railroad with comparative study of foreign systems. Survey of Federal administration. Prerequisite, B.A. 104. Fee $1.50. Five credits; winter.

123. Investments and Speculation.—Distinction between investment and speculation; selection of sound investments; how investments are made; character of the investment market; relation to the money market. Prerequisite, B.A. 121. Five credits; spring.

125. Banking Practice.—Practical survey of methods and machinery of bank operations. Internal organization of the bank; relation of the different functions; accounting methods; finding costs for the bank; problems of bank administration. Prerequisites, B.A. 11-12, 57. Fee, $1.50. Five credits; winter.

126. Commercial Credits.—Essential considerations in the extension of credit; the credit department; sources of information; credit analysis; credit insurance; practical problems. Prerequisite, B.A. 57. Fee, $1.50. Five credits; winter.

127. Foreign Exchange and International Banking.—Theory of international exchange; rates of exchange; financing imports and exports; specie movements; foreign money market factors; foreign banking by American institutions; financing foreign trade; the present status of the foreign exchange situation. Prerequisite, B.A. 57. Fee, $1.50. Five credits; autumn.

137. Economics of Advertising.—Fundamental economic principles applied to the proper relations of advertising to product, sales plans and media. Fee, $1.50. Five credits; winter.

138. Sales Management.—Selling methods and the organization of the sales force. The personal side of the technique of marketing and merchandising. Required investigation in the different fields. Prerequisite B.A. 106. Fee $1.50. Five credits; autumn.

141. Fire Insurance.—Theory and practice of fire insurance; study of clauses in standard fire policies; apportionment of losses; rate making; fire prevention. Prerequisite, B.A. 58. Fee, $1.50. Five credits; autumn.

142. Life Insurance.—Functions of life insurance; premiums; reserves; kind of companies and policies; dividends; lapses. Disability, group and industrial insurance. State regulations of life insurance business, Prerequisites, B.A. 58. Fee, $1.50. Five credits; spring.

149. Marine Insurance.—History, principles and practice of marine insurance as applied to ships, freight and cargo. Prerequisites, B.A. 58. Fee, $1.50. Five credits; winter.

151. Rail and Marine Rates.—A study of the principles governing the making of rates and the interpretation of federal and state statutes affecting rail and water rates; influence of competitive forces; traffic geography; classifications; rate adjustments; survey of decisions of commissions and courts, interstate and local rate problems. Prerequisite, B.A. 104. Fee, $1.50. Five credits; spring.

152. Shipping and Consular Regulations.—Study of navigation laws relating to prevention of collisions at sea, inspection of vessels; employment of seamen; carrying of cargo and passengers; towage and pilotage; wharfage
and moorage; liability of vessels and owner; duties of consular officials; administration of the navigation laws. Fee, $1.50. Three credits; spring and summer.

154. Corporation Accounting.—Different corporation securities; corporation records, accounts; stock and dividend transactions; funds and reserves; redemption of bonds; preparation of corporate reports; methods of consolidation; reorganization, receivership and dissolution. Fee, $3.50. Five credits; autumn.

155. Cost Accounting.—Production factors; cost finding methods for different business; material, labor records; distribution of indirect expense; preparation of operating statement; production, service departments; cost reports for administration officials. Fee, $3.50. Five credits; winter.

156. Auditing.—Auditing procedure; balance sheet audits; analysis of asset and liability values; profit and loss statement audits; analysis of income and expense; certifications and reports; classification of audits and investigations. Fee, $3.50. Five credits; autumn.

157. Income Tax Accounting.—Government decisions affecting the practical determination of taxable income; persons, corporations, partnerships subject to the tax; exemption and exceptions; deductions and allowances; preparation and analysis of returns. Fee, $3.50. Five credits; winter.


159. Advanced Money and Banking.—Critical study of selected topics in monetary science and business finance; value of money; financial effects of the great war, the Federal Reserve system, agricultural credit, business cycles. Prerequisite, B. A. 57. Fee, $1.50. Five credits; spring.

160. Advanced Economics.—For seniors and graduate students; thorough training in economic theory, application to concrete problems. Prerequisite, B.A. 1 and senior standing. Fee, $1.50. Five credits; autumn, winter, spring.

161. American Labor Problems.—Course showing the relation between the development of the American Labor Movement and free lands, immigration, economic organization prices, industrial crises. Prerequisite, B. A. 1. Fee, $1.50. Five credits; autumn.

162. European Labor Problems.—Comparative study of labor movements of modern Europe; economic and political backgrounds, in relation to types of labor organizations. Prerequisite, B.A. 1. Fee, $1.50. Five credits; winter.

164. Labor Legislation.—Development of the law, its interpretation in the solution of the American and European labor problems. Prerequisite, B.A. 1. Fee, $1.50. Two credits; spring.

165. Economics of Consumption.—Historical development of human wants in relation to the economic laws of consumption; influence on the production and distribution of wealth. Attempts made to control consumption through private and governmental agencies. Prerequisite, B. A. 1. Fee, $1.50. Three credits; spring.
*166. Women in Industry.

167. Industrial and Employment Management.—Study of the organization and administration of industrial enterprises; factors in plant location; types of factory building; equipment of the plant; departments; executive control; labor policies; wages; service and welfare features; scientific management; employee representation. Practice in representative business establishments. Should be preceded by B.A. 105 and B.A. 161 or equivalents. Fee, $1.50. Five credits; winter and spring. Leib.

168. History of Economic Thought.—Study of the chief contributors to economic theory from Adam Smith to Bohn-Bawerk as a basis for understanding present economic problems. Prerequisite, B.A. 1. Fee, $1.50. Five credits; winter. Moriarty.

*169. The Economics of Distribution.

170. Real Estate and Casualty Insurance.—Study of real estate transactions, interests, liens, sales, transfers, mortgages, valuations, title, credit, fidelity, automobile, tornado and miscellaneous forms of property and liability insurance. Prerequisite, B.A. 1. Fee, $1.50. Five credits; spring. Smith.

171. Exporting and Importing.—The technique of exporting and importing; the administration and operation of exporting and importing departments; analysis of markets; preparation of documents and calculation of values of staples and of manufactured products and the financing of shipments. Prerequisites, B.A. 1 and 7. Fee, $1.50. Five credits; autumn. Lewis.


173. International Commercial Relations.—Study of the rules and regulations of states applying to foreign commerce; with special attention devoted to conflicts of commercial interests; commercial treaties; effect of war upon commerce. Fee, $1.50. Five credits; winter. Driscoll.

174. Business Statistics.—Collection, presentation and interpretation of statistical data relating to business operations, including consideration of business barometers, market analysis, sales and advertising. Prerequisite, Math. 13. Fee, $1.50. Five credits; spring. Lewis.

177. Trade of Far and Near East.—Intensive study of resources and trade of China, Japan, Siberia, the Philippines, French-Indo China, Siam, India, The Malay-Peninsula, the Dutch East Indies, Australasia, Persia, Mesopotamia, Syria, Arabia, Turkey and the Balkan States. Prerequisite, B.A. 7. Fee, $1.50. Five credits; winter. Lewis.

178. Trade of Europe.—An intensive study of the resources of Europe and Africa, and of the trade relations of these sections with the rest of the world, especially the United States. Prerequisite, B.A. 7. Fee, $1.50. Five credits; winter. Lewis.

180. Trade of the Americas. Intensive study of the resources and trade of Mexico and the Central American and South American countries. Prerequisite, B.A. 7. Fee, $1.50. Five credits; spring. Lewis.

*Not offered in 1922-1923

187 ABC. Research in Secretarial Training.—Two-five credits; autumn, winter, spring. Hours to be arranged. Draper

191 ABC. Research in Accounting.—Two-five credits; autumn, winter, spring. Hours to be arranged. Cox.

192 ABC. Research in Insurance.—Two-five credits; autumn, winter, spring. Hours to be arranged. Smith.

193 ABC. Research in Transportation.—Two-five credits; autumn, winter, spring. Hours to be arranged. Kibler.

195 ABC. Research in Foreign Trade.—Two-five credits; autumn, winter, spring. Hours to be arranged. Lewis.

196 ABC. Research in Business Administration and Industrial Management.—Two-five credits; autumn, winter, spring. Hours to be arranged. Leib.

197 ABC. Research in Business Finance.—Two-five credits; autumn, winter, spring. Hours to be arranged. Custis.

198 ABC. Research in Marketing and Advertising.—Two-five credits; autumn, winter, spring. Hours to be arranged. Moriarty.

199 ABC. Industrial Research.—Two-five credits; autumn, winter, spring. Hours to be arranged. Tarbill.

COURSES 200 AND OVER—PREREQUISITE, GRADUATE STANDING

201 ABC. Seminar in Economics and Business Administration.—Two-five credits; autumn, winter, spring. Miller and Custis.

203 ABC Auditing Technique.—Five credits; autumn, winter, spring. Daily 7:30 p.m. Robertson.


207 ABC. Seminar in Labor.—Two-five credits; autumn, winter, spring. Hours to be arranged. McMahon.

Norr: For the teachers' Course (Commercial Teachers' Course) see department of education. Educ. 160.D.

EDUCATION

Education Hall

PROFESSORS BOLTON, ATER, RANDOLPH; ASSISTANT PROFESSORS WILLIAMS, TERRY, HINES; ASSOCIATE ROBERTS; TEACHING FELLOW, HUGHES

I. MINIMUM REQUIREMENTS FOR NORMAL DIPLOMA

101.—Introduction to the Study of Education.—A general course covering the field of education. Open to all sophomores who have earned 65 quarter
hours of credit and prerequisites to all other courses in education. Five credits; autumn, winter, spring, or summer.

110. *Psychology of Teaching Methods.*—An attempt to discover the psychological foundation of methods. The application of these to concrete illustrations of teaching. Especially applied to high school instruction. Prerequisite, Educ. 101. Five credits; autumn, winter, spring, or summer.

Bolton, Williams.

119. *Secondary Education: Problems of the High School Teacher.*—Secondary school curricula and closely related problems. Prerequisite, Educ. 101. Recommended also 110. Three credits; autumn, winter, spring, or summer.

Terry.

145. *Practice Teaching.*—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. Prerequisite, Educ. 101, 110, 119. Five credits; (For Phys. Educ. majors, two, three or five credits.) Autumn, winter or spring. Roberts.

Courses 101 and 110 are prerequisite to courses 160.C to 160.U. One of these courses is required for the normal diploma.

160.C. *Teachers' Course in Latin.*—Methods and problems in the teaching of high school Latin. Prerequisite, Latin 50 or 60 or 70. Except by special arrangement this course must be taken in combination with Latin 107. Two credits; autumn.

Clark.

160.D. *Commercial Teachers' Course.*—Typical business courses are examined and made the basis for discussions in relation to the needs of local business conditions; a study of the content of high school commercial courses and of texts. Prerequisites, B.A. 11-12, 64-65, 81, 82, 84, and 85. Fee $1.50. Five credits; spring.

Draper.

160.E. *Teachers' Course in English.*—Methods and problems in the teaching of English in the high school. Continued in the winter and spring quarter as English 188, 189. Two credits; autumn.

Garrett.

160.F. *Teachers' Course in Geography.*—The teaching of geography, physical geography, and commercial geography in the schools. Prerequisites, one term of geology, physiography and geography. Two credits; winter.

Saunders.

160.G. *Teachers' Course in German.*—Aims and methods in their application to the teaching of German; lesson plans; courses of study for high schools; textbooks and aids in teaching; coaching of underclassmen in elementary classes. Prerequisite, Ger. 110. Two credits; spring.

Eckelman.

160.H. *Methods of History Teaching.*—With special reference to the work of the high school. Required of majors in history who expect to teach. Five credits; spring.

McMahon.

160.I.-160.J. *Teachers' Course in Home Economics.*—Curricula, methods of teaching and equipment. Prerequisite, H.E. 5-6, 107, 112-113, 143, 144, 145; Arch 1-2; Physics. 89-90; Bact. 101. Three recitations. Three credits each quarter; autumn, winter.

Raitt, Denny.

160.M. *Teaching of Mathematics.*—A consideration of the problems peculiar to the teaching of high school mathematics. The nature and value of mathematics with their pedagogic bearings. A critical review of courses and methods of teaching. Examination of recent high school texts. Required of mathematics majors who are candidates for the normal diploma. Prerequisite Math. 109. Two credits; spring.

Winger.
160.N. Teachers' Course in School Music.—Prerequisite, Music 113, 114. Two credits; spring. Dickey.

160.O. Civics in Secondary Schools.—Attitude of approach, arrangement of material, methods of presentation; the development of an appreciation of the reality of our political system; and in handling political facts; the use of material, textbooks, current articles, legislative bills, sample ballots, observation of local government agencies, etc. Surveys the content of civics courses with reference to historical origins, government structure and functions and present day political life. Two credits; spring. Laube.

160.P. Methods of Teaching Art.—Courses of study methods and material. Two credits; autumn. Rhoades.


160.T. Teachers' Course in French.—Aims, and methods best suited to attain them. Prerequisites, French 41, 101, 102, 103, 158, and 159. Two credits; spring. Frein.

160.U. Teachers' Course in Spanish.—Methods of teaching Spanish. Practice in the classroom. Prerequisites, Span. 101, 102; Span. 103 and 191 must be taken concurrently with 159. Two credits; spring. Ober.

160.Z. Teachers' Course in Zoology.—For students preparing to teach zoology in high schools. Lab. fee, $1. Prerequisite, Zool. 1-2. Two credits; winter. Gunthorp.

II. ADVANCED UNDERGRADUATES AND GRADUATES

To be admitted to courses in this group (II) students must have earned at least 10 credits in education, including courses 101, 110.

150. Introduction to Educational Measurements.—A study of the development of the use of tests and scales in improving instruction in the public schools. Consideration of elementary statistical methods, intelligence tests and subject tests. Lab. fee, $3. Three credits; autumn, winter or spring. Hines.

151. Educational Sociology. Social Foundations.—A brief perspective over the nature of the fundamental social structures and their relation to progress, followed by a special application of modern social knowledge to the problems promoting human welfare through educational activities. Three credits; autumn, winter, spring, or summer. Randolph.

152. Social Surveys of School Studies and Activities.—A critical study of the literature seeking to evaluate the existing materials and to suggest fruitful reconstruction in the light of social needs. Two credits; autumn, winter, spring, or summer. Randolph.

154. Junior High School.—History of the movement for reorganization; functions and features of this new organization. Prerequisite, Educ. 119. Two credits; autumn, winter. Terry.

156. High School Organisation: The High School Principal. Supervision in high school including the school population, extra-curricular activities, publicity, cooperative curriculum making, etc. Prerequisite, Educ. 119. Two credits; autumn, winter, spring. Terry.
161. History of Education.—Social interpretation of the historic beginnings of education, the contributions of the Greeks and Romans, the development of Christianity, medievalism, and the beginning of modern education. Development of educational practices since the Renaissance. The growth of democracy in and through education. Five credits; autumn. Randolph.

172. Psychology of Elementary School Subjects.—Survey of experimental studies which furnish the basis for current practice in learning and teaching reading, writing, arithmetic, spelling, drawing, language, etc. Three credits; winter. Williams.

173. Psychology of High School Subjects.—Consideration of experimental studies which form the basis for learning and teaching the subjects in the high school curriculum; history, mathematics, English, foreign language, science, etc. Three credits; spring. Williams.

176-177-178. Vocational Guidance.


191. Educational Administration: State and County.—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. Three credits; autumn. Ayer.


195. School Supervision.—A course focusing upon the recognized techniques of effective classroom work as the central factor of in-service education and the common concern of teacher and supervisor. In connection with the treatment of each type of activity the special opportunities of the supervisor will be pointed out. Five credits; winter, spring, or summer. Randolph.

196-197-198. Individual Mental Testing.—A study of the concept of intelligence with its practical bearing upon school and social ability. Demonstration and practice is given in applying the Stanford Revision of the Binet-Simon tests. Other individual tests considered. Designed for advanced students, teachers and principals. Two credits a quarter; autumn, winter, and spring. Five credits in summer. Laboratory fee, $2 a quarter. Williams.

III. FOR GRADUATES ONLY

To be admitted to courses in this group (III) students must be college graduates, and must have earned at least 18 credits or the equivalent in education. The following courses may be counted toward the masters' and doctors' degrees.

211-212-213. Comparative Education.—The critical study of modern education in foreign countries, especially in Germany, France, England, Norway,

*Not offered in 1922-1923
Sweden and Canada. Relations between social ideals of nations and their educational systems. Influence upon educational theories and practices in America. Two credits a quarter; autumn, winter, and spring. Bolton.

215. Experimental Education.—Method and practice in experimental procedure and technique in conducting experiments in connection with school work. Three double periods a week. Lab. fee $2. Three credits; autumn. Williams.

221. Educational Statistics.—Covering theoretical and practical aspects of statistical methods as applied to education. Practice will be given in the treatment of statistical data. Prerequisite to Educ. 222 and 223. Three credits; autumn. Lab. fee $2. Hines.


223. Educational Measurements in Supervision.—An advanced course in subject tests. Practice in giving tests, scoring, and interpreting results. Covers both elementary and high school fields. Prerequisite, Educ. 221. Lab. fee $3. Three credits; spring. Hines.

231-232-233. Advanced Educational Psychology.—A survey of the contributions to educational psychology with special emphasis upon learning, its progress, conditions and effects. Two credits; autumn, winter, and spring. Williams.

241-242-243. Current Literature of Education.—Readings and discussions. Periodical lectures by members of staff. Course designed for well prepared students who desire to make a thoroughgoing investigation of present day problems in American education. Two credits a quarter; autumn, winter, and spring. Hines.

261-262-263. Seminar in Educational Sociology.—A survey of recent contributions to educational sociology and study of special problems. Two credits a quarter; autumn, winter, and spring. Randolph.

271-272-273. Seminar in Educational Surveys.—Development, functions, methods, and results of educational surveys as discovered by a critical examination of city, rural, vocational, and state educational surveys and literature of a related character. Practical survey work. Two credits a quarter; autumn, winter, and spring. Ayer.

275-276-277. Seminar in Secondary Education.—A research course in the problems of high school administration and supervision. Two credits a quarter; autumn, winter, and spring. Terry.


298-299-300. Individual Research or Thesis Work.—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. Credits to be arranged. Staff.
101. Direct Currents.—Short course in continuous current machinery for non-electrical students, to be taken in connection with E.E. 102. Prerequisite, Phys. 98. Four credits; autumn, winter, spring. Kalin, Hoard.

102. Direct Currents Laboratory.—Short laboratory course in continuous current machinery for non-electrical students. Prerequisite, Phys. 98. Lab. deposit, $4. Two credits; autumn, winter, spring. Shuck, Hoard, Kalin.

109. Direct Currents.—Theory of the electric and magnetic circuits; construction, operation and characteristics of direct current generators and motors. Prerequisite, Phys. 98. Four credits; autumn, winter, spring. Hoard, Tolmie.

110. Direct Currents Laboratory.—Laboratory work on direct current machinery. Prerequisite, Phys. 98. Lab. deposit, $4. Two credits; autumn, winter, Spring. Shuck, Kalin.


112. Direct Currents Laboratory.—Experimental work on direct current dynamo machinery and on storage batteries. Prerequisite, E.E. 110. Lab. deposit, $4. Four credits; autumn, winter, spring. Curtis, Shuck.

15. Elementary Direct Currents.—(Extension Night Class). 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. Shuck.


121. Alternating Currents.—Short course in alternating currents for non-electrical students. To be taken in connection with course 122. Prerequisite, E.E. 101. Four credits; autumn, winter, spring. Curtis, Hoard.

122. Alternating Currents Laboratory.—Experimental work on alternating current machinery. Prerequisite, E.E. 102. Laboratory deposit, $4. Two credits; autumn, winter, spring. Curtis, Shuck.


**132. Telephones and Telegraphs.—Details of automatic and manual switchboards; testing and locating faults; multiplex telegraphy; railway signal systems. Junior or senior elective. Prerequisite, E.E. 131. Lab. deposit, $2. Three credits. Tolmie.

141. Illumination.—Electric lamps; commercial photometry; adaptation of electric lighting to commercial requirements. Junior or senior elective. Prerequisite, E.E. 109, 110. Lab. deposit, $2. Four credits; winter. Hoard.

**Will be offered if a sufficient number of students elect the course.
152. Electrical Machine Design.—Complete design of one direct current generator or motor. Prerequisite, E.E. 111, 112. Five credits; autumn, winter, spring.

Loew.

161. Alternating Currents.—Theory of singlephase and polyphase system; energy storage in magnetic and dielectric fields; vector diagrams and the symbolic methods of analysis; power factor and power measurements; hysteresis and eddy currents; theory of the transformer, singlephase and polyphase induction motors. Prerequisite, E.E. 111. Six credits; autumn, winter, spring.

Magnusson, Loew.

162. Alternating Currents Laboratory.—Experimental work with alternating current machinery. Prerequisite, E.E. 112. To be taken in connection with E.E. 161. Lab. deposit, $4. Four credits; autumn, winter, spring.

Curtis, Shuck.

163. Alternating Currents.—Theory of alternators, rotary converters, synchronous and commutator motors and transmission lines; high tension phenomena; corona; commercial wave forms; unbalanced and inter-linked systems. Prerequisite, E.E. 161. Six credits; autumn, winter, spring.

Magnusson, Loew.

164. Alternating Current Laboratory.—Prerequisite, E.E. 162. Lab. deposit, $4. Four credits; autumn, winter, spring.

Curtis, Hoard.

171. Electric Railways.—Equipment, roadbed, construction and operation. Prerequisite, E.E. 109, 110. Four credits; winter.

Curtis.

173. Central Stations.—Location, design and operation of electric central stations. Prerequisite, E.E. 163, 164. Three credits; autumn, spring.

Kirsten.

175. Power Transmission.—Theory, design and operation of electric power transmission lines. Prerequisite, E.E. 163, 164. Four credits; autumn, spring.

Loew.

181, 182. Radio.—Radio systems; linear, open and complex oscillations; coupled circuits; resonance; transmitters; receivers; vacuum tubes in radio work; quenched and undamped oscillations. Prerequisites, E.E. 161, 162. Lab. deposit, $2. Five credits a quarter; winter, spring.

Tolmie.

186, 188. Thesis.—After consultation with the head of the department the 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. Two to five credits a quarter; autumn, winter spring.

Magnusson, Loew, Kirsten, Curtis.


Hoard.

195. Electric Transients.—The exponential law of simple transients; single and double energy transients; current oscillations and traveling waves; natural period of transmission lines; short circuit transients; surges; corona; lightning phenomena. Prerequisite, E.E. 161, 162. Two credits; autumn, winter, spring.

Magnusson.

196. Electric Transients Laboratory.—To be taken in connection with E.E. 195. Prerequisite, E.E. 162. Lab. deposit, $2. Two credits; autumn, winter, spring.

Kalin.
198. Electric Transients Laboratory.—Continuation of E.E. 196. Lab. deposit, $2. Two credits; autumn, winter, spring. Kalin.

210, 212, 214. Research.—Two to five credits per quarter; autumn, winter, spring. Magnusson, Loew, Kirsten, Curtis.

ENGLISH
Denny Hall

PROFESSORS PADELFORD, FARRINGTON, BENHAM; ASSOCIATE PROFESSORS MILLMAN, COX, GARRETT; ASSISTANT PROFESSIONS, HARRISON, RENST; INSTRUCTOR, HENSHAW; ASSOCIATES, HAGGETT, P. JONES, BROWNING, MRS. RENST, VOIGNER, KERRIGAN, SIEHLKE; ASSISTANTS, McCUSKELAND, Z. JONES, MARCHAND, MORE; TEACHING FELLOWS, LEWIS, GUNDLACH, ARNSEN, FAIRBANKS, BRELAND; DEBATE COACH, BRELAND.

REQUIREMENTS FOR MAJOR STUDENTS

The plan of work for major students consists normally of, (1) a minimum of 27 hours work in lecture and recitation courses, and (2) a course of individual reading in English and American literature under departmental tutors, extending throughout the senior year.

At the conclusion of the senior year all major students are required to take an examination in the history of English literature and the plan of work should be designed to that end.

Candidates for the teacher's diploma are required to take Educ. 160. E and Eng. 188 and 189.

1-2-3. Elementary Composition.—A course in the principles and practice of composition, with 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 are excused from the course on examination. A grade of "A" in course 1 excuses a student from course 2. Five credits for two quarters. For students in Fine Arts, three credits; autumn, winter, spring. Students intending to major in English are expected to enroll in sect. W, which combines practice in writing with the study of modern authors. Five credits; autumn, winter, spring. Padelford in charge

4. Elementary Composition.—For students in engineering, forestry, fisheries, and pharmacy. Students are required to repeat the course if their work is not of high quality. Three credits for one quarter. Padelford in charge

5. Elementary Composition.—A second quarter's work for students in fisheries and forestry. Three credits a quarter. Padelford in charge


37. Argumentation.—Five credits; autumn.

38. Debating.—Prerequisite, Eng. 37. Five credits; winter.

*Not offered in 1922-1923
39. Debating.—Prerequisite, Eng. 38. Five credits; spring.


51, 52, 53. Advanced Composition.—Composition based upon model English and American essays. May be taken for upper division credit. Prerequisite, English 1-2. Two sections. Three credits a quarter; autumn, winter, spring.

54, 55, 56. Advanced Composition.—A practical course in criticism and style designed to give a critical and philosophical basis to one’s judgments on men, affairs, literature and art. May be taken for upper division credit. Prerequisite, Eng. 1-2. Three credits a quarter; autumn, winter, spring.

61, 62-63. Versification.

64, 65. Literary Backgrounds.—A study of important works in English literature. Open to all. Required in the freshman year of pre-journalism majors. Five credits a quarter; autumn, winter.

67, 68, 69. Great American Writers.—Studies in the works of Emerson, Hawthorne, Longfellow, Lowell, Whitman, Poe, Bryant, Whittier, Mark Twain, and others. Two credits a quarter; autumn, winter, spring.

70, 71. Shakespeare.—A detailed study of a few plays, with rapid reading of the remainder. Three credits a quarter; autumn, winter.

73, 74, 75. Lower Division Contemporary Literature.—Essay studies of European and American thought during the nineteenth century and later; followed by readings in poetry, novel and drama involving similar ideas. Three or five credits; autumn, winter, spring.

81, 82, 83. Literature of the English Colonies.—Autumn quarter devoted to the study of the literature of Canada; winter quarter to the literature of Australasia and of South Africa; spring quarter to the English literature of India. Two credits a quarter; autumn, winter, spring.

98. The Bible as Literature.—A study of the literature of the Old Testament. Open to all students. Three credits a quarter; spring.

101. Intercollegiate Debating.—Students who represent the University in one or more intercollegiate debates are allowed two credits therefor, and the credit is entered as Eng. 101 for the quarter in which the debating takes place.

102. Advanced Composition for Engineers.—An elective course open to those engineering students who have done superior work in Eng. 4. Three credits for one quarter; winter, spring.

104-105-106. Contemporary Literature.—Special studies in contemporary literature for advanced students. Three credits a quarter; autumn, winter, spring.

124. Chaucer.—A study of the poetical works of Chaucer. Three credits; autumn.

125. Medieval Literature.—The life and the ideals of the Middle Ages and their influence upon modern literature. Texts read will include Piers Plowman, Aucassin and Nicolette, The Pearl, Malory’s Morte D’Arthur. Three credits; winter.

*Not offered in 1922-1923
126. Mediaeval Literature (continued).—Texts read will include the mediaeval lyric and drama, Froissart, Dante, the Story of Burnt Njal, the Nibelungenlied. Three credits; spring. Garrett

*127, 128, 129. Milton and His Contemporaries.

130, 131, 132. The English Drama.—A study of plays representative of the origin and development of English drama. Three credits a quarter; autumn, winter, spring. Benham

133, 134, 135. Main Tendencies in English Literature, I.—A study in English national ideals, from the beginning to 1642, with consideration of significant literary figures and works. Open to sophomores who are expecting to major in English. Three credits a quarter; autumn, winter, spring. Benham

136, 137, 138. Main Tendencies in English Literature, II.—A study in English national ideals from 1642 to the present. Open to sophomores who are expecting to major in English. Three credits a quarter; autumn, winter, spring. Parrington

141, 142. Social Ideals in Literature.—A study of model commonwealths, and of such other literature as illustrates the development of social and economic thought. Three credits a quarter; winter, spring. Benham.

*144, 145, 146. Romantic Revolt.

147, 148, 149. The English Novel.—A study of the movements in English prose fiction, with an analysis of some of the principal works. Two credits a quarter; autumn, winter, spring. Ernst

161-162-163. American Literature from the Beginnings to the Year 1870.—The autumn quarter deals with the period before 1800; the winter quarter, with Irving, Brown, Cooper, Bryant, Poe, and the slavery controversy; the spring quarter, with the New England group. Three credits a quarter; autumn, winter, spring. Parrington

164, 165, 166. American Literature since 1870.—The autumn quarter deals with the beginnings of realism; the winter quarter, with tendencies from 1900 to 1915; the spring quarter, with contemporary fiction and poetry. Three credits a quarter; autumn, winter, spring. Parrington


174, 175, 176. Nineteenth Century English Poetry.—Wordsworth, Shelley, Keats, Tennyson, Browning; Swinburne, Morris, Arnold, Rossetti. Three credits a quarter; autumn, winter, spring. Padelford

183, 184, 185. General Literature.—A study of classical culture, with special reference to its influence on English literature. Three credits a quarter; autumn, winter, spring. Henshaw

*187. Philosophy in Contemporary Drama.

188, 189. Advanced Teachers' Course.—Methods and problems in the teaching of English in the high school. A continuation of Educ. 160E. Two credits a quarter; winter, spring. Garrett

191, 192, 193. Major Conference.—For senior students. Individual conferences for the purpose of effecting a correlation of studies and for guid-

*Not offered in 1922-1923
ance in individual reading. Each student is expected to meet his instructor once a week in conference. Three credits a quarter; autumn, winter, spring.

Harrison, Cox, Ernst

*194, 195, 196.—Studies in Romance.

GRADUATE COURSES

201. Introduction to Graduate Study.—Studies in the methodology and bibliography of the English language and literature. Three credits; autumn. Benham

204, 205, 206. Chaucer. CK for M. Davis

*207, 208, 209. English Literature from Chaucer to Dryden.

211, 212, 213. English Literature of the Tudor Period.—For the coming year the class will study the poetry of Edmund Spenser as a fusion of classical, mediaeval and Renaissance impulses and traditions. This course may be taken to advantage by students who have already studied Spenser during a summer session. Two to eight credits a quarter; autumn, winter, spring. Padel£ord

221, 222, 223. Modern English Literature.—Studies in modern English and American literature from the mid-nineteenth century period to the present day. Two to eight credits a quarter; autumn, winter, spring. Parrington

*224, 225, 226. American Literature.

*227, 228, 229. Literary Criticism.

230, 231, 232. Early English.—The grammar of the early English. Readings in Old and Middle English authors. Three credits a quarter; autumn, winter, spring. Benham

COURSES IN FOREIGN LITERATURE TAUGHT IN ENGLISH

(For details see foreign language departments)

German, 70-71; Greek 13-14; Italian, 181-182, 184; Oriental Languages, 50-51-52; Scandinavian, 180-181-182.

Note: For courses in Comparative Philology, see department of Scandinavian Languages and Literature.

For the teachers' course in English, see department of Education, Educ. 160-B.

FISHERIES

Fisheries Hall

PROFESSORS COBB, KINGCAID; INSTRUCTORS, CRAWFORD, ANDERSON.

1, 2. Introduction to Fisheries.—A general review and history of the world's fisheries. Two credits a quarter; autumn, winter. Cobb

3, 4, 5. Ichthyology.—Structure, classification and habits of economic fishes. Course 5 will also include other economic marine animals, particularly oysters and clams. Prerequisite, ZooL 1, 2. Laboratory deposit, $3. Five credits a quarter; autumn, winter, spring. Kincaid, Crawford.

6. Pacific Fisheries.—General review and history of the fisheries of the Pacific. Winter quarter is open to short course students. Two credits; winter, spring. Cobb

*Not offered in 1922-1923
Courses 7,8,9,10,12,13.— (See short course subjects on page 14, College of Fisheries bulletin.)

101-102-103. Fish Culture.—Developmental history and artificial propagation of economic fishes, lobsters, etc. Prerequisite, Fish. 3, and Zool. 5. Laboratory deposit, $3. Five credits a quarter; autumn, winter, spring. Crawford.

104-105. Fishery Methods.—Construction and uses of apparatus; handling and transportation of products, etc. Three lectures and two laboratory periods. Laboratory deposit, $3. Five credits a quarter; winter, spring.

106-107. Preparation of Fishery Products.—Curing and preservation of fishery products. Prerequisite, Fish. 3 and 5. Three lectures and two laboratory periods. Laboratory deposit, $4. Five credits a quarter; autumn, spring. Crawford.

108. Oyster and Clam Culture.—Development and propagation of oysters and clams. Prerequisite, Fish. 5. Laboratory fee, $3. Five credits a quarter; autumn. Cobb, Anderson.

112. Oyster and Clam Culture.—Development and propagation of oysters and clams. Prerequisite, Fish. 5. Laboratory fee, $3. Five credits a quarter; autumn.

115. The Economic Fishery Resources of North America.—A study of the fishery resources of the North American continent and adjacent seas, their development and commerce, and government policies of conservation. Three credits; spring. Kincaid.

117. Diseases of Fish.—Nature and causes of disease in fishes. Prerequisite, Fish. 3-4-5. Lab. fee, $3. Five credits; autumn.

150, 151, 152. Problems in Fish or Shellfish Culture.—Students with the proper preparation, which should include at least 15 hours' work in fish culture or 15 hours' work in shellfish culture and Fish. 5, will be assigned special topics to be worked upon under the direction of one of the instructors. Five credits a quarter; autumn, winter, spring. Kincaid.

155, 156, 157. Problems in Fisheries.—Students with the proper preparation, which should include at least 15 hours' work in fishery methods and preparation of fishery products, will be assigned special topics to be worked upon under the direction of the instructor. Five credits a quarter; autumn, winter, spring. Cobb.

FORESTRY AND LUMBERING

Forest Products Laboratory

Professor Winkenwerder, Kirkland; Associate Professor Clark; Assistant Professor Grondal; Mr. Zimmerman.

1. Elementary Dendrology.—Nomenclature, classification and identification of trees. A detailed study of all northwest species and of one type species of each genus of the important timber trees of North America. Prerequisite, high school botany. Required of freshmen. Two recitations, one quiz and two 3-hour laboratory periods a week, field trips additional. Laboratory deposit $2.50. Five credits; autumn or spring. Winkenwerder and assistant.

2. General Forestry.—A general survey to familiarize the student with the field of work he is about to enter. Required of freshmen. Three credits a quarter; autumn. Winkenwerder.

3. General Forestry.—A continuation of For. 2 but need not be preceded by it. Three credits; winter. Winkenwerder.
4. **Forest Protection.**—Its economic importance; forest fires, their prevention and control. Required of freshmen. Three credits; spring. Winkenwerder.

5. **Woodcraft.**—Food and clothing, camp equipment and sanitation, packing a horse, and general woodcraft. A section will be arranged for students not enrolled in forestry if not less than 12 apply. Two lectures per week; demonstrations and practice work additional. Laboratory deposit, $2.50. Two credits; autumn. Clark.

6. **General Forestry.**—A general introductory course for students not majoring in forestry. This course is prerequisite to all other courses in forestry for non-majors in forestry primarily offered for students in the College of Business Administration who desire to prepare themselves for work in lumber marketing, others admitted until the section is full. Five credits; winter. Winkenwerder.

51. **Forest Mensuration.**—Principles and methods of computing, scaling, cruising, mapping; the construction of volume tables, taper tables, form factors, etc. Open to short course students. Three recitations, two 3-hour laboratory periods. Laboratory deposit $2.50. Five credits; winter. Winkenwerder, Clark.

52. **Forest Mensuration.**—Methods of studying growth in diameter, height and volume; sample plot methods; construction and use of growth and yield tables. Three recitations and two 3-hour laboratory periods. Laboratory deposit, $2.50. Five credits; spring. Winkenwerder, Grondal.

53. **Construction.**—Trails, roads, logging railroads, telephone lines, wooden bridges, cabins, barns, and fences; clearing from the standpoint of United States Forest Service improvement work, and logging construction. Required of sophomores. Laboratory deposit, $2.50. Three credits; autumn. Winkenwerder, Clark and assistants.

57a. **Silvics.**—Climate, soil and life factors which determine character of forest vegetation. Form and character of the individual tree. Life history of the forest. Silvical characteristics of the tree species. Lectures and quiz. Required of sophomores. Prerequisite, 10 hours botany, For. 1 and 52. Three credits; autumn. Kirkland.

57b. **Field Methods in Silviculture.**—To accompany 57a. One 3-hour laboratory period. Elective. Laboratory deposit, $2.50. One credit. Kirkland.

58. **Silviculture.**—Regeneration of forests by natural reproduction, seeding or planting. Care of young, middle-aged and older stands. Required of sophomores. Prerequisite For. 57a. Laboratory deposit, $2.50. Five credits; spring. Kirkland.

101. **Wood Technology.**—Wood structure, leading to identification of the commercial timbers of the United States; physical properties of woods, kiln drying. Each student is required to prepare permanent microscopic mounts of fifty species. Required of juniors. Prerequisite to all courses in forest products; prerequisites, college botany, For. 1, 10 hours chemistry and general physics. Laboratory deposit, $2.50. Five credits, autumn. Grondal.

102. **Wood Identification.**—This course includes the laboratory work only of For. 101. Open to students in other departments. Prerequisite, college botany, 8 hours. Laboratory deposit, $2.50. Two credits; autumn. Grondal.
103. Wood Analysis.—Identification, physical properties and characteristics of woods used in building construction. Open only to students in architecture. Two credits; spring. Grondal.


105. Wood Preservation.—Nature of decay of timber and methods and economics of preservation. Laboratory work with the college treating plant and reports on local creosoting plants. Required of juniors and graduates. Prerequisites, For. 101 and one year of chemistry. Laboratory deposit $3. Five credits; spring. Grondal.

110. Characteristics of Trees.—Identification, distribution, life habits, and uses of trees of the Pacific Northwest. Offered only to students not enrolled in the College of Forestry. Two lectures weekly and occasional field trips. Two credits; spring. Winkenwerder.

112. Properties and Uses of Woods.—Offered only as a correspondence course. Grondal.

119. Forest Administration.—Objects, principles and methods of administering private and public forests and forest industries. Prerequisite, For. 126 or may be taken concurrently. Three credits; winter. Kirkland.

126. Forest Economics.—The forests of the United States, their uses, their relation to other industries and resources. Statistics of production and consumption. Required of juniors or seniors in forestry and open to students in other departments. Prerequisite, B.A. 1. Three credits; winter. Kirkland.

151. Forest Finance and Valuation.—Mathematics of forest finance; compound interest calculations applied to forest operations; application of financial tests to silvicultural and other forest measures; cost of growing timber; valuation of land for forest production; valuation of mature or immature timber and of damage to forests. Required of students in senior or graduate year. Prerequisites, For. 52 and 58. Five credits; autumn. Kirkland.

152. Forest Organization.—Principles of forest organization and regulation of the cut; advantages of foresight and planning in forest operations for a term of years in advance; sustained yield management of forests; forest working plans. Required of students in senior or graduate year. Prerequisite, For. 151. Five credits; winter. Kirkland.

153. General Lumbering.—Prerequisite to all courses in logging and milling. Comparative methods of lumbering on the Pacific Coast and in other lumbering regions of the United States. Required of juniors. Five credits; autumn. Clark.

157. Lumber and its Uses.—Wood structure, leading to identification of local species; the physical and mechanical properties of wood; kiln drying and other milling practices; economic uses of lumber in construction, wood preservation. Primarily for students in the College of Business Administration (not open to students majoring in forestry). Prerequisite, For. 6. Four class periods and one 3-hour laboratory period. Five credits; winter. Grondal.
158. Forest Utilization.—Pulp and paper manufacture, tannic acid, naval stores and other secondary forest products; lumber and its economic uses in construction. Required of juniors and graduates. Prerequisite, For. 101, and one year in chemistry. Five credits; winter. Grondal.

159. Scientific Management.—Fundamental principles of scientific management, with special reference to the lumber industry. Given in alternate years, not in 1923-1924. Two credits; autumn. Kirkland.

183. Milling.—The sawmill; yard arrangements; practical operation, practical problems at local saw-mills. For seniors and graduates. Prerequisites, M.E. 82, For. 153, 158, 104. Five credits; autumn. Grondal.

184. Manufacturing Problems.—Technical trade requirements, routine of sawmill practice; relation of waste to marketing, lumber grades and their uses. Prerequisite, For. 183. Three credits; winter. Grondal.

185-186-187. Logging Engineering.—Logging machinery and equipment, organization of logging companies, construction of railroads, camps, etc. Lectures, demonstrations at plants manufacturing logging machinery, and field work in nearby logging camps. During the third quarter all the work is transferred to the field, where extensive work in logging engineering is carried on. No credit is given for 186 unless followed by 187. Primarily for seniors and graduates. Prerequisites, For. 52, 53, 58, 104, 153, M.E. 82, C.E. 22. Laboratory deposit for 187, $3. Four credits a quarter, autumn and winter; sixteen credits; spring. Clark.


201. Forest Geography.—Advanced dendrology. Silvicultural regions, their relation to regional industrial development and the general problems of lumbering and management. Prerequisite, senior or graduate standing in the College of Forestry. Three credits; autumn. Winkenwerder.

208, 209 Seminar.—Reviews, assigned readings, reports, and discussions on current periodical literature and the more recent Forest Service publications. Prerequisite, senior or graduate standing in the College of Forestry. Two credits a quarter; autumn, winter. Winkenwerder, Kirkland, Grondal.

213, 214, 215. Senior or Graduate Research.—Credits to be arranged any quarter. Instructors assigned according to nature of work. Not open to students below senior standing. Laboratory deposit, $3. Kirkland.

221. Forest History and Policy.—Forest policy of the United States; forestry in the states and island possessions; the rise of forestry abroad. Prerequisite, senior or graduate standing. Three credits; autumn. Kirkland.

222. Advanced Forest Management.—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 the 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. Prerequisite, For. 151-152. Eight credits; spring. Kirkland.
224. Advanced Milling and Marketing.—Sawmill design and a detailed study of special problems in sawmill operation and management. Prerequisites, senior or graduate standing, For. 183, 184. Five credits, spring.

(For short course subjects see College of Forestry bulletin, pages 18, 19.)

GEOLoGY
Science Hall

PROFESSOR LANDES; ASSISTANT PROFESSORS SAUNDERS, GOODSPeed; INSTRUCTOR HANNA.

Courses in the department are grouped to lead into different fields of geological work, as follows:

General Geology: Courses 1-9, 100-109, 200-209.


Paleontology and Stratigraphy: Courses 30-39, 130-139, 230-239.

1. General Geology.—Physical. Geological agencies and processes affecting the earth. Lectures and laboratory work, with occasional half-day field trips. Lab. fee, $2.50. Five credits; autumn or winter. Goodspeed

2. General Geology.—Historical. Continuation of course 1, dealing with the origin and evolution of the earth. Lectures and laboratory work, with some field excursions. Prerequisite, Geol. 1, 5, or 12. Lab. fee, $2.50. Five credits; autumn, winter, spring. Hanna

4. Principles of Geology.—Historical. The earth's origin and the general history of the continent. For College of Mines students only. Lectures, recitations and field trips, without laboratory work. Three credits; spring. Hanna

5. Engineering Geology.—A survey of the field of general geology, for the special needs of students in civil and chemical engineering and forestry. Lab. fee, $2.50. Five credits; spring. Goodspeed

10. Modern Geography.—Introductory study of the problems of modern geography; the scientific investigation of geographic environment and its influence; use of maps and charts; geographic control of production and trade; study of the major geographic features of the continents. Five credits; autumn. Saunders

11. Meteorology and Elementary Climatology.—Weather elements and controls; causes and effects of atmospheric conditions; principles and methods of weather forecasting and use of instruments. With or without laboratory work. Lab. fee, $1. Three or five credits; winter. Saunders

12. Physiography.—Land forms or earth's features with reference to origin and characteristic changes under different agencies during the geographic cycles. Occasional field trips. With or without laboratory work. Lab. fee, $1. Three or five credits; spring. Saunders

21. Mineralogy.—A brief study of crystallography followed by descriptive mineralogy and blowpipe methods. At least a high school course in chemistry is essential as a prerequisite, and a quarter in general geology is desirable. Lab. fee, $3. Five credits; winter. Goodspeed
31. *General Paleontology.*—A consideration of the broad principles of paleontology. An elementary course open to all students. Prerequisite, Geol. 1 or 5. Lab. fee, $2.50. Five credits; autumn. Hanna

107. *Geology of Washington.*—Lectures with assigned readings and laboratory study. Prerequisite, one quarter of general geology or physiography. Two credits; spring. Landes

111. *Climatology.*—The broader aspects of climate controls and characteristics of different climates and climatic provinces, with special references to United States and the Pacific Coast. Prerequisite, Geol. 10 or 11. Three credits; spring. Saunders

112. *Physiography of the United States.*—The physiographic regions of the United States and their effects on development and history of the country. Lectures and map study. Prerequisite, Geol. 10 or 12, or 1, 3, or 5. Lab. fee, $1. Three credits; autumn. Saunders

113. *Physiography of Europe.*—The physiographic regions of Europe and effects of topography and climate on development and relations of different countries. Lectures and map study. Prerequisite, Geol. 10 or 12 or 1, 3 or 5. Lab. fee, $1. Three credits; winter. Saunders

114. *Oceanography.*—Study of the ocean, oceanic circulation and temperatures in their geographic relations and influence. Prerequisite, Geol. 11 or equivalent work. Two credits; spring. Saunders

116. *Economic Geography of Washington.*—The economic and industrial development of the state, based on the geological, physiographic and climatic conditions. Three credits; autumn. Landes

117. *Geography of Asia.*—A study of the continent by natural regions based on topography and climate. Prerequisite desirable, Geol. 10 or 12. Three credits; spring. Saunders

118. *Geography of South America.*—Physiographic features, climate and resources of the continent and their effects on development and relations of different countries. Prerequisite desirable, Geol. 10 or 12. Three credits; winter. Saunders

120. *Petrology.*—A study of rocks, their components, occurrence and structural relations. Occasional field trips. Lab. fee, $2.50. Prerequisite, Geol. 21 and either 1, 5, or 12. Three credits; spring. Goodspeed

121. *Advanced Mineralogy.*—A study of opaque, metalliferous minerals with the use of the reflecting microscope, or "mineragraphy"; the relation of the latter to geologic, mining and metallurgical problems. Prerequisite, Geol. 21. Three credits; autumn. Goodspeed

122. *Field Methods.*—Principles and methods of geologic surveying and mapping. Detailed field work in small areas, with field trips. Prerequisite, Geol. 1 and 2, or 5 with 21 and 120. Two credits; spring. Goodspeed

123. *Optical Mineralogy.*—The use of the polarizing microscope in the examination of minerals and rocks in thin sections. Prerequisite, Geol. 1 or 5, and 21. Lab. fee, $2.50. Three credits; autumn. Goodspeed

124. *Petrography.*—The principles of petrography and petrographic methods in the systematic study of igneous, sedimentary and metamorphic rocks. Prerequisite, Geol. 123. Lab. fee, $2.50. Four credits; winter. Goodspeed
125. **Advanced Petrography.**—A continuation of the work in petrography for majors in mining and geology. Prerequisite, Geol. 124. Two credits with additional credits optional; spring. Goodspeed

126. **Economic Geology.**—Economic deposits of non-metallic minerals, their production and use. Lectures and discussions of papers. Prerequisite, Geol. 1 or 5, and 21. Three credits; autumn. Landes

127. **Economic Geology.**—Economic deposits of metallic minerals, their production and use. Lectures and discussions of papers. Prerequisite, Geol. 1 or 5, and 21, 124. Five credits; winter. Landes

128. **Economic Geology.**—An intensive study of certain economic minerals or of particular areas of great importance. Prerequisite, Geol. 126 or 127. Two or more credits; spring. Landes

131. **Invertebrate Paleontology.**—A detailed and systematic biologic study of fossil and living representatives of the Mollusca. Prerequisite, Geol. 31. Lab. fee, $2.50. Five credits; winter. Hanna

133. **Stratigraphic Paleontology.**—A study of the fundamental principles of stratigraphy and the characteristic fossils by means of which the geologic formations of the continent may be determined. Prerequisites, Geol. 1 or 2, 12 or 31. Lab. fee, $2.50. Five credits; spring. Hanna

**GRADUATE COURSES**

200.—Field studies or advanced work in general geology. Credits and hours to be arranged.

210.—Advanced or research work in geography, climatology or physiography. Credits and hours to be arranged. Each quarter.

220. Advanced or research work in mineralogy, petrography and metamorphism. Credits and hours to be arranged. Each quarter.

225.—Advanced or research work in economic geology. Credits and hours to be arranged. Each quarter.

230.—Advanced or research work in paleontology and stratigraphy. Credits and hours to be arranged. Each quarter.

**SPECIAL SHORT COURSES**

**S.C. 1. Geology.**—Two lectures a week. Laboratory fee, $1. Winter Landes

**S. C. 2. Mineralogy.**—A laboratory course in physical determination of minerals and the use of blowpipe methods. Three laboratory periods per week. Lab. fee, $2.50. Winter. Landes

For the teachers' course, (Course in Geography) see department of education, Educ. 160-F.

**GERMANIC LANGUAGES AND LITERATURE**

**Denny Hall**

**ASSISTANT PROFESSOR ECKELMAN; ASSOCIATE KRAFFT**

Requirements for a departmental major: at least 35 hours in the department chosen from courses other than German 1, 2, 3. For the departmental or academic major, who wishes a recommendation to teach: the same, including Ger. 110, and Educ. 160G and at least 9 additional credits in literature.
Credit is allowed for any quarter in any course except 1-2.

All courses are conducted in German unless otherwise specified.

1-2. First Year.—Stage pronunciation, grammar, reading of easy prose and verse, conversation. Five credits a quarter; autumn and winter, winter and spring, spring and summer. Eckelman and Krafft

3. First Year Reading.—Reading of modern prose, conversation, composition, continuation of grammar. Prerequisite, Ger. 1-2 or one year in high school. Five credits a quarter; autumn, winter, spring. Eckelman, Krafft

5. Second Year Reading.—Pronunciation, vocabulary building, reading of modern prose, simple conversation. Prerequisite, Ger. 3 or two years high school. Three credits; autumn, winter. Eckelman, Krafft

6. Second Year Rapid Reading.—Modern prose, vocabulary building, simple conversation. Prerequisite, Ger. 5, 10 or 11, or 60, or two and one-half years high school. Three credits; spring. Krafft

10, 11. Second Year Supplementary Reading.—Modern prose, grammar review with emphasis on syntax, simple conversation. Prerequisite as for Ger. 5. Two credits; autumn, winter. Krafft

60. Lower Division Scientific German.—Introduction to chemical German. Class work. Suitable outside reading. Vocabulary building. Prerequisite, Ger. 5, 10, or 11; combinations with consent of instructor. Two or three credits; autumn, winter. Krafft

100. 'Schiller. Life and dramatic works. Jungfrau von Orleans. Don Carlos or Wallenstein. Prerequisite, Ger. 5 or 6. Three credits; autumn. Krafft

103, 104. Recent Writers.—The best prose and dramatic literature adapted to rapid reading and representative of German middle class and industrial life. Written and oral reports. Prerequisite, Ger. 5 or 6. Three credits; winter, spring. Krafft

106, 107, 108. German Literature in Translation.—Goethe, the lyric poet. The novel and the drama of the nineteenth century. Reading and discussion of the most significant works. Written reports. No knowledge of German required. Two credits; autumn, winter, spring. Eckelman

110. Advanced Prose Composition and Conversation.—Written exercises, letter writing, themes. Extemporaneous reproduction. Recitation or series, narrative and dramatic selections. Grammar and syntax. Prerequisite, Ger. 5 and 10 or 11. Two credits; winter. Eckelman

112, 113, 114. Upper Division Scientific German—Scientific essays, monographs and technical periodicals. Each student does private reading in his own field under the guidance of the instructor and major professor. Conference work. Prerequisite courses 5 and 10, or 5 and 60, or 6, or three years in high school. Two or three credits a quarter; autumn, winter, spring. Eckelman

*116-117-118. German Prose Reading.

*120. Phonetics.

*130-131-132. German Institutions.

*133-134-135. Modern Novels.

*Not offered in 1922-1923
*136-137-138. Modern Drama.

142. Lyrics and Ballads.—The Romanticists, Uhland, Heine, Moerike, Storm and others. Prerequisite, course 100 or 103 or 104. Three credits, graduate students may exceed this credit; autumn. Eckelman

*151. Lessing.

152, 153. Goethe.—Growth and development of the lyric poet. Outside reading and reports. Faust, Part I. Genesis, plan and purpose of the drama. Assigned reading and reports. For advanced students. Three credits, graduate students may exceed this credit; winter, spring. Eckelman

180, 181. Nineteenth Century Literature.—Study of the drama and novel to 1880. Kleist, Grillparzer, Hebbel, Ludwig, Raabe, Keller, Storm, C. F. Meyer. For advanced students. Three credits, graduate students may exceed this credit; autumn, spring. Eckelman


*203-204-205. Storm and Stress Period.


*220-221-222. Inter-relations of German and English Literature.

*250-251-252. History of the German Language.

253. Middle High German.—Grammar and selections from authors for rapid reading in the original. Two to five credits; winter. Eckelman

*256-257-258. Gothic.

*259. Old Saxon.

Notes.—For courses in comparative philology, see the department of Scandinavian Languages and Literature.

For the teachers' course in German, see department of education, Educ. 160-9.

HISTORY

Denny Hall and Philosophy Hall

PROFESSORS: MEANY, RICHARDSON; ASSOCIATE PROFESSOR MCMAHON; ASSISTANT PROFESSORS LUCAS, LARSH; INSTRUCTORS, EVIY, FARRAR; PROFESSOR GOWEN OF THE DEPARTMENT OF ORIENTAL LANGUAGES AND LITERATURE.

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 requirements and that it be taken in the freshmen year. This course is repeated beginning with each quarter.


English Political and Social History (5-6). Open without prerequisites to freshmen, sophomores and upperclassmen.

Ancient History (71-72-73). Open without prerequisites to sophomores and upperclassmen.

For a major at least eighteen credits shall be obtained in the most advanced undergraduate courses. Course 1-2 is required of all history majors.

*Not offered in 1922-1923.
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 become 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 have specialized knowledge in their chosen fields. Courses in history, government and economics should be elected with this aim in view.

The work in undergraduate courses consists of lectures, papers, assigned and collateral readings, with quiz sections organized for the larger classes. Graduate courses are devoted to research work and reports thereon.

1-2. Medieval and Modern European History.—A general survey from the Roman world empire of Augustus to our own times. Five credits a quarter; autumn, winter. Lucas, Larsen, Eddy

The above course is repeated beginning with the winter quarter.

5-6. English Political and Social History.—A survey of the political, social, economic and intellectual development of the English people from the Saxon conquest to the present time. Five credits a quarter. (By performance of special work under direction of the instructor upper division students may receive upper division credit.) Autumn, winter. Richardson

8. Westward Movement in the U.S. to 1912.—A study of the advance of the frontier and its effect on American ideals from the colonial period to the war of 1812. Two credits; autumn.

9. Westward Movement in the U.S. 1812-1860.—A study of the frontier from the war of 1812 to the civil war. Two credits; winter.

10. The Agrarian Crusade in the U.S. 1860-1920.—A study of the agrarian movements for control, their causes and results. Two credits; spring.

21-22. History of China.—From the earliest time to the present. Three credits a quarter; autumn, winter. Gowen

23. History of Japan.—Three credits a quarter; spring. Gowen

57-58. History of the United States.—A general survey with emphasis upon political and economic history. Not open to freshmen. Five credits a quarter; autumn, winter. McMahon

60, 61, 62. Makers of the Nations.—American history through the biographies of prominent characters. Not open to freshmen. Two credits a quarter; autumn, winter, spring. Meany

71-72-73. Ancient History.—A survey of the history of the ancient world to the times of Augustus. By performance of special work under the direction of the instructor upper division students may receive upper division credit. Not open to freshmen. Three credits a quarter; autumn, winter, spring. Larsen

81-82-83. England Since the Accession of George I.—Deals with the construction of the British commonwealth of nations and with Imperial problems. It emphasizes also internal economic and institutional developments, especially
those related to the growth of democracy. Prerequisite, Hist. 1-2 or 5-6. By performance of special work under the direction of the instructor upper division students may receive upper division credits. Not open to freshmen. Two credits a quarter; autumn, winter, spring. Eddy

85-86-87. History of the Middle Ages. Advanced.—Course emphasizes the economic, institutional and cultural phases of the period. (By performance of special work under direction of the instructor upper division students may receive upper division credit). Prerequisite, Hist 1-2. Three credits a quarter; autumn, winter, spring. Lucas

90. History of Alaska: Russian Expansion, 1581-1867.— Two credits; autumn. Lucas


92. History of Alaska: Second American Period, 1896-1912.—Two credits; spring. Farrar

102. The Greek World: From Alexander to its Conquest by the Romans.—Those institutions that have influenced the Roman empire and thus western Europe receive special attention. Three credits; autumn. Larsen

103-104. The Roman Empire from Augustus to Justinian.—Three credits a quarter; winter, spring. Larsen

105-106-107. English Constitutional History.—The development of the legal and governmental institutions of the English people to the present time. Valuable for students of political science and law as well as history. Prerequisite, Hist. 5-6, except for upper division students who are majoring in economics, sociology and political science, or who are taking 5-6. Open also to pre-law sophomores who have taken 5-6 in freshman year. Pre-law sophomores who elect this course and have not taken 5-6 are required to take course 108-109-110. Three credits a quarter; autumn, winter, spring. Richardson

108-109-110. English Political History, Pre-law.—Open only to those pre-law sophomores and majors in political science who are taking course 105-106-107. All pre-law sophomores who are taking course 105-106-107 and who have not taken course 5-6 are required to take this course. Two credits a quarter; autumn, winter, spring. Richardson

114-115-116. Renaissance and Reformation.—Prerequisite, Hist. 1-2. Two credits a quarter; autumn, winter, spring. Lucas

117-118-119. France from the Reformation to the French Revolution. Lucas

121-122-123. Prussia and Northern Europe. Eddy

125. Turkey and the Near East, 1453-1921.—Deals with the Near Eastern question: the rise, expansion and decline of the Ottoman Empire and the awakening and modern development of the Balkan nations. Prerequisite, Hist. 1-2, or 131. Five credits; spring. Eddy

129. The French Revolution and Napoleonic Era.—Prerequisite, Hist. 1-2. Five credits; autumn. Eddy

*Not offered in 1922-1923.
130. Europe, 1814-1870.—European development from the Congress of Vienna to the foundation of the German Empire at the close of the Franco-German war. Prerequisite, Hist. 1-2. Five credits; winter. Eddy

131. Europe since 1870: The War and Its Background. The historical background, fundamental causes and progressive development of events and issues in the world war. Prerequisite, Hist. 1-2, or upper division standing. Not open to freshmen. Five credits; spring. Richardson

*139. The Southern Colonies.

*140. The New England Colonies.

*141. American Revolution.

143. History of the United States, 1789-1815.—Open only to juniors, seniors and graduates. Three credits; autumn. McMahon

144. History of the United States, 1815-1846.—Open only to juniors, seniors and graduates. Three credits; winter. McMahon

145. History of the United States, 1846-1860.—Open only to juniors, seniors, graduates. Three credits; spring. McMahon

147. History of the Civil War Period.—Open only to juniors, seniors and graduates. Three credits; autumn. McMahon

148. History of the Reconstruction Period.—Open only to juniors, seniors and graduates. Three credits a quarter; winter. McMahon

149. History of National Development.—The development of the American nation from the close of the reconstruction period to the present time. Open to juniors, seniors, graduates and to such sophomores as have completed Hist. 57-58. Five credits a quarter; spring. McMahon

153. The Pacific Rim.—History of the countries bordering upon the Pacific Ocean with especial reference to recent changes. Open to juniors, seniors and graduates. Three credits a quarter; autumn. Meany

154. Spain in America.—The rise and fall of Spanish power in America, and an outline of the history of the Spanish-American republics. Three credits a quarter; winter. Open to juniors, seniors and graduates. Meany

155. History of Canada.—Canadian development to the present time. Open to juniors, seniors and graduates. Three credits a quarter; spring. Meany

157-158-159. History of American Diplomacy.—American relations with foreign powers from colonial times to the present. Open to juniors, seniors and graduates. Two credits a quarter; autumn, winter, spring. Meany

163-164-165. Northwestern History.—From the earliest voyages to the Pacific Northwest to the organization of the present form of government. Open to juniors, seniors and graduates. Two credits a quarter; autumn, winter, spring. Meany

GRADUATE COURSES

201-202-203. Methods of Historical Research and Criticism.—Open only to graduates and a few qualified seniors who obtain the consent of the instructor. One credit a quarter; autumn, winter, spring. Richardson

*204-205-206. Historiography.

*Not offered in 1922-1923
210-211-212. *Greek Federal Leagues.*—Two credits a quarter; autumn, winter, spring. Larsen

*215-216-217. Seminar in English History.* Richardson

*218-219-220.—Seminar in Historical Background of World War.*

221-222-223. *Seminar in American History.*—Two credits a quarter; autumn, winter and spring. McMahon

227-228-229. *Seminar in State History.*—Two credits a quarter; autumn, winter, and spring. Meany

NOTE:—For the teachers' course, see department of education, Educ. 100-M.

**HOME ECONOMICS**

*Home Economics Hall*

Professor Raitt; Assistant Professors Denny, Patte, Amery, Koshern; Instructors, Dresslar, Lundy.

(For curricula in Home Economics see page 84)

1. Cookery.—General elective for non-home economics majors. Study of marketing, cookery, meal planning and service. Laboratory work to accompany Phys. Educ. 54, 55, and 56. Three 2-hour periods, recitation and laboratory work. Lab. fee, $6. Three credits; winter. Dresslar

*2. Elements of Nutrition.*

*3. Elements of Home Management.*

4. *Foods: Principles and Practice of Food Preparation.*—Credit for cookery in high school exempts students from this course. Three 2-hour periods, recitation and laboratory work. Lab. fee, $6. Three credits; autumn, spring. Dresslar

5-6. *Foods: Selection and Preparation.*—Prerequisite, H.E. 4 or one year high school cookery or equivalent, Chem. 5-6, Physiology 8. Two lectures and three 2-hour periods, recitation and laboratory work. Lab. fee, $6. Five credits a quarter; autumn, winter, spring. Dresslar

7. *Home Economics Survey.*—Analysis of the subject. Relation to supporting courses. Budgets and accounts. Required of all freshmen majoring in home economics. Two recitations. Two credits; autumn; spring. Raitt

8. *Clothing.*—Elements of hand and machine sewing. Materials, design and construction. Comparison with factory made garments. Problems of garment making. Credit for high school clothing exempts students from this course. Three 2-hour periods, recitation and laboratory work. Lab. fee, $2. Three credits, spring. Denny

25. *Textiles and Clothing.*—Identification and testing of fabrics. Economics of the textile industry. Comparative values in all types of clothing. Hygiene of clothing. Care and renovation. Clothing budgets. Two lectures and three 2-hour periods, recitation and laboratory work. Lab. fee, $4. Five credits; autumn, winter, spring. Denny

27. *Non-Textiles.*—Merchandise from non-textile sources; paper, leather, rubber, fur, metals, etc. Raw materials, sources of supply, manufacture, methods of judging. Classification of retail stores' departmental stock. Three 2-hour periods, recitation and laboratory work. Lab. fee, $4. Three credits; winter. Denny

*Not offered in 1922-1923.*
32. **Clothing.**—General elective for students who take no other work in this subject. Designing and making of simple dresses, study of accessories, clothing budgets. Three 2-hour periods, recitation and laboratory work. Lab. fee, $4. Three credits; autumn. 

43. **Home Sanitation.**—Selection, sanitation and care of the equipment and material of the household. Three 2-hour periods, recitation and laboratory work. Lab. fee, $2. Three credits; autumn.

101-102. **Needlework.**—History of lace and needlecraft. Application of principles of design to modern needlework. Prequisite, H.E. 8 and P.S. and D. 3. Two 2-hour periods, recitation and laboratory work. Lab. fee, $2. Two credits a quarter; autumn, winter.

105-106. **Nutrition: Elementary Dietetics.**—Function, nutritive value of foods. Elementary course for nurses, social service students and those wishing to obtain a practical knowledge of nutrition as a part of a liberal education, but who will not teach this subject. Prerequisite, H.E. 4, Chem. 5-6, Physiology 8. Three lectures one 2-hour period, recitation and laboratory work. Lab. fee, $6. Four credits; winter, spring.

107-108. **Nutrition: Dietetics.**—Principles of Human Nutrition. For those expecting to teach home economics or to enter professions related to food and nutrition. Prerequisite H.E. 5-6, Chem. 135-136. Three lectures. Two 2-hour periods, recitation and laboratory work. Lab. fee, $6. Five credits; winter, spring.

109. **Elements of Home Economics.**—Service course for students training to do social service work. A consideration of the budget, elements of nutrition and home sanitation. Five recitations. Five credits; winter. Raitt

110. **Food Preparation.**—Advanced work in cookery—finer processes in technique, meal planning and service, catering. Prerequisites, H.E. 5-6. Two 3-hour periods, recitation and laboratory work. Lab. fee, $6. Three credits; autumn.


121. **Large Quantity Cookery.**—Preparation of food in large quantities for cafeterias, tea rooms, dormitories, hospitals, and camps. Prerequisite, H.E. 5-6. Laboratory practice. One lecture, three 2-hour periods, recitation and laboratory work. Lab. fee, $4. Four credits; winter. Lusby

122. **Buying and Dietaries.**—Marketing, buying, institution equipment and supplies. Planning menus for dormitories, hospitals, cafeterias and tea-rooms. Prerequisites, H.E. 5-6 and 107-108. Three recitations. Three credits; spring.

123. **Institutional Management.**—A study of the problems of various types of institutions, relating to their organization and operation, relation to the state and community, employment of help. Three lectures. Prerequisites. H.E. 5-6, 107-108, and 122. Three credits; spring. 

124-125. **Practice Work.**—Eight hours a week in different departments of University Commons and University dormitories followed by eight hours a week among following: tea rooms, cafeterias, school lunch rooms, clubs and hospitals—under supervision of the instructor in charge. One hour con-
ference a week. Two 4-hour periods or one full day should be arranged in the schedule. Three credits a quarter; autumn or spring. Two quarters required.  


133. Clothing: Costume Design.—Development of fashion from ancient times to the present with emphasis upon the best art periods. Adaptation to the present mode. Prerequisites, H.E. 112-113, P.S. and D. 3 and 169. Five 2-hour periods—recitation and laboratory work. Five credits; spring. Lab. fee, $4. Patty

135. Millinery.—Design, selection, practice in construction. Study of trade methods and materials. Prerequisites, H.E. 8 or equivalent P.S. and D. 3. Three 2-hour periods, recitation and laboratory work. Three credits; autumn. Patty

143. Home Furnishing.—Application of structural art principles to choice and arrangement of household furnishings. Comparative costs. Prerequisites, P.S. and D. 3. Two lectures and one 2-hour period, laboratory work, and excursions. Lab. fee, $4. Three credits; autumn. Denny


148. Practice Cottage:—Seniors are required to live in Practice Cottage two or three weeks. Two credits. Amery

183. Foods.—Comparative Studies of Food Materials and Cooking Processes.—Prerequisites, H.E. 5-6. Three 2-hour periods recitation and laboratory work. Lab. fee, $4. Three credits; spring. Dresslar


189. Special Food Problems—Investigation of food products, nutrition, individual assignments. Prerequisite, H.E. 106 or 107. Recitation and special investigation. Lab. fee, $2. Three credits; autumn. Raitt

190-191. Advanced Nutrition.—A study of one or more of the following phases:

Man nutrition of Children.—Work centers around the University Cooperative Child Nutrition Service. Consultation with physicians and instructor and follow-up case work in homes of the children. Visits to institutions for child care.

An Intensive Study of Dietary Deficiency Diseases—Laboratory work on experimental animals.

Diet in Disease.—Lectures. Visits to hospitals. Open to graduates or advanced under-graduate students. Two to five recitations, one to three lab. periods. Three hours of field work may be required. Lab. fee, $4
and $8 depending upon number of credits carried. Three to eight credits; winter and spring.

**GRADUATE COURSES**

*200. Special Food Problems.*

202. Seminar.—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. Prerequisites, 30 credits in home economics, including Educ. 160-J, 160-J. Four to six credits; spring. Raitt

*203. Research*

205-206. Research in Nutrition.—Animal experimentation on some special problem. Open to graduate students. Prerequisites, H.E. 107-108. It is desirable that this course be accompanied by H.E. 190, 191. Lab. fee, $4. Two to three credits a quarter; winter, spring. Koehne

207. Research in Textiles.—Prerequisites, H.E. 25, Econ. 1. Lab. fee, $2. Three to nine credits. credits arranged Denny

**NOTE!**—For teachers' courses, see the department of education. Educ. 160-J—160-J.

For the course Food and Nutrition required for physical education credit, see department of physical education, Phys. Educ. 94-95-96.

51. News Writing.—Practice in news writing; study of news sources. Required in the sophomore year of pre-journalism majors. Laboratory fee, $2. Five credits a quarter; autumn, winter. Hicklin.

61. The Country Newspaper.—Editorial problems peculiar to the country weekly. Two lecture hours and one laboratory period a week. Required in the sophomore year of pre-journalism majors. Laboratory fee, $2 a quarter. Three credits a quarter; spring. Jones.

75. Elements of Publishing.—Head styles; proof-reading; binding, engraving, press work; problems of production. Required in the sophomore year of pre-journalism majors. Laboratory fee, $2 a quarter. Three credits a quarter; autumn. Kennedy.

90, 91, 92. Current Events.—Current state, national, and world movements. One quarter required of majors in journalism. Prerequisite, Journalism 51. Laboratory fee, $1. One credit a quarter; autumn, winter, spring. Jones.

101. Reporting.—Study of all types of stories covered by a reporter. Required of majors in journalism. Prerequisite, Journalism 51. Laboratory fee, $2. Five credits a quarter; autumn, spring. Hicklin.

104. Newspaper Administration.—Newspaper organization and management. Required of majors in journalism. Prerequisite, Journalism 51. Laboratory fee, $1. Two credits a quarter; autumn. Spencer.

109. Literary and Dramatic Reviewing.—Routine work of the literary and dramatic editors. Prerequisite, Journalism 51. Two credits a quarter; spring. Jones.

*Not offered in 1922-1923.*
120. Copy Reading.—Required of majors in journalism. Prerequisite, Journalism 101. Laboratory fee, $2. Five credits a quarter; winter, spring.

128. Foreign Correspondence. Laboratory fee, $2. Five credits a quarter; autumn.

130. Fundamentals of Advertising.—Laboratory fee, $2. Five credits a quarter; autumn.

131. Display Advertising.—Prerequisite, Journalism 130. Laboratory fee, $2. Five credits a quarter; winter.

133. Advertising Typography.—Type families; application of type; advertising type units; type problems. Laboratory fee, $2 a quarter. Prerequisite, Journalism 75. Five credits a quarter; spring.

136. Comparative Journalism.—Prerequisite, Journalism 101 and 120. Laboratory fee, $2. Three credits a quarter; spring.


140. The Business Office.—Simplified accounting for newspaper plants; business office management. Required of majors in journalism. Prerequisite, Journalism 75. Laboratory fee, $2 a quarter. Five credits a quarter; winter.

150. Editorial Writing.—Required of majors in journalism. Prerequisite, Journalism 101 and 120. Five credits a quarter; spring. Spencer.

160. Trade Journalism.—Prerequisite, Journalism 51. Laboratory fee, $2. Five credits a quarter; winter. Jones.

170. Magazine and Feature Writing.—Practice in writing special newspaper and magazine articles; study of current magazines and newspaper supplements. Articles are graded according to their probable marketability. Laboratory fee, $2. Five credits a quarter; autumn. Jones.

173. The Short Story.—Critical appreciation of the short story. Laboratory fee, $2. Three credits a quarter; autumn.

174-175. Short Story Writing.—Prerequisite, Journalism 173. Laboratory fee, $2 a quarter. Three credits a quarter; winter, spring. Spencer.

188. News Writing for Teachers.—Methods and problems of teaching news writing in high schools. Two credits a quarter; spring. Jones.

250. Research in Journalism.—Admission only by consent of the instructor. Three to five credits a quarter; autumn, winter, spring. Spencer.

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**LAW**

**Commerce Hall**

Professor Condon, Lantz, Goodner, Bissett, Ayer; Lecturer, O'Bryan

**FIRST YEAR**

*All first year courses required*

100. Agency.—Wambaugh's Cases. Five credits; spring. Ayer.

103-104. Contracts.—Williston's Cases. Five credits per quarter; autumn and winter.

106-107. Criminal Law and Procedure.—Derby's Cases supplemented
by Washington Criminal Code and Cases. Three credits per quarter; autumn and winter.


116. Property II.—Real.—Bigelow's Cases, Vol. II. Five credits; spring.

117-118. Torts.—Bohlen's Cases. Four and two credits respectively; autumn and winter quarters.

SECOND YEAR

125-126. Equity.—Ames' Cases in Equity Jurisdiction, Vol. I and II. Three credits per quarter; autumn and winter.

128. Damages.—Beale's Cases on Damages, supplemented by Washington Cases. Three credits; spring.

129-130. Evidence.—Wigmore's Cases. Five and four credits, respectively; autumn and winter.

133. Insurance.—Vance's Cases. Three credits; spring.

137. Negotiable Instruments.—Huffcut's Cases. Three credits; winter.

138. Quasi-Contracts.—Woodruff's Cases. Three credits; spring.

139-140. Property III. (continued).—Aigler's Cases, Vol. III, and Kale's Cases, Vol. IV; autumn and winter quarters, four and two credits, respectively.

142-143. Public Utilities.—Beale and Wyman's Cases. Three credits per quarter; winter and spring.

146-147. Sales.—Woodward's Cases. Three credits per quarter; winter and spring.

161. Procedure IV.—This course relates to procedure in civil actions in the Superior Court of Washington. Five hours. Three credits; autumn.

179. Partnership.—Gilmore's Cases. Three credits; spring.

THIRD YEAR


159. Wills.—Costigan's Cases. Three credits; autumn.

163. Procedure VI.—A course in Probate Proceedings, covering administration of estates, probate of wills, appointment of guardians, etc. Five hours. Four credits; winter.

165. Admiralty.—Ames' Cases. Three credits; autumn.
DEPARTMENTS OF INSTRUCTION

166. Office Practice.—Conveyancing and examination of abstracts, care of a law office generally, drawing wills and contracts, preparation of briefs and office accounts. Five credits; spring. Condon

168. Conflict of Laws.—Lorenzen's Cases. Five credits; winter. Lantz

170-171. Constitutional Law.—Hall's Cases. Three credits per quarter; autumn, winter. Bissett

187-188. Private Corporations.—Canfield and Wormser's Cases. Three credits per quarter; autumn and winter. Goodner

191. Property: Community.—Washington Statutes and selected cases on community property. Five credits; spring. Bissett

196. Trusts.—Kennewson's Cases. Five credits; spring. Goodner

Notes—Fifteen hours of credits in each quarter are required, making a minimum total of 185 hours or credits for completion of the law course.

Students are limited to fifteen hours per quarter, except upon special permission of the dean, and payment of an additional fee of $1 per credit hour in excess of fifteen.

1. Use of the Library.—An elective course open to any student in the University, but especially designed as an introduction for those who expect to enter the Library School. Lectures on the arrangement of the library, on classification and cataloging of the books, on some of the general reference material, and on library organization and usage. One hour a week; repeated each quarter. Staff

Registration in any quarter limited to thirty, preference given to those expecting to enter the Library School.

The following courses are open only to students registered in the Library School.

174. Order Routine, Trade Bibliography, and Circulation.—Ordering, receiving, checking, accessioning and mechanical preparation of books; elements of trade bibliography. It also covers lending systems. Two credits; autumn. Howe

175. Classification and Subject Headings.—Decimal classification studied in detail, followed by survey of the Expansive and the Library of Congress classifications. Use of subject headings considered early in the quarter and much of the prepared work consists of the classification and assignment of subject headings to specified books. Three credits; autumn. Spencer

176. Cataloging.—Covers fundamentals of dictionary cataloging, assigning of book numbers, shelf-listing, and alphabeting. Three credits; autumn. Alfonso

184. Cataloging.—A continuation of course 176, dealing with the more difficult phases of the subject, including authorities. Three credits, winter. Alfonso

177, 185, 193. Reference.—These courses give a working knowledge of important types of reference books and develop the power of research. Lectures cover books and methods. Practical problems assigned and worked
out. Courses include also the work with government documents. Two credits a quarter; autumn, winter, spring. Smith

194. Subject Bibliography.—Practical work in the preparation of bibliographic lists; lectures on sources and methods of work. Problems cover arrangement and form of entry. One piece of independent bibliographic work is required of each student. Two credits; spring. Smith

186, 195. Practice.—Each student is expected to do 300 hours of practice or laboratory work under expert personal supervision 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 15 hours per week for twenty weeks. Five credits a quarter; winter, spring.

178. History of Books and Libraries.—Lectures, readings and reports. Two credits; autumn. Henry

187. Library Organization and Extension.—Subjects treated are 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. Two credits; winter. Henry

179, 188, 196. Book Selection.—To cultivate taste and good judgment in evaluation of books through a study of the principles of book selection, annotation and book reviewing. Three credits; autumn. Two credits; winter and spring. Howe

197. Library Administration and Library Literature.—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 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.A. Proceedings for recent years. Three credits; spring. Henry

189. Work with Children and Schools.—Planned to meet the needs of general library assistants and librarians in charge of small libraries. 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. Two credits; winter. Howe

198. Special Lectures by Active Librarians.—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 experience and success in dealing with the problems treated. One credit; spring.

**MATHEMATICS**

*Philosophy Hall*

**Professors** Moritz, Bell; **Associate Professors** Carpenter, Winger; **Assistant Professors** Gavett, Neikirk; **Instructors** Small, West, Stagner; **Associate** Chalmers, Taylor, Jeridet

**REQUIREMENTS OF THE DEPARTMENT**

For a major in mathematics, 36 credits, including courses 5 and 109. Candidates who are not majors in mathematics but wish to teach mathe-
matics as a minor subject must have earned at least 15 credits in mathematics, including courses 4 and 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, 107, 108, 109. In addition they should elect physics as their freshman science and take solid geometry (Math. 2) in their freshman year.

1. **Advanced Algebra.**—Algebra from quadratics on. Prerequisite, one year of high school algebra. Five credits; autumn, winter, spring.

2. **Solid Geometry.**—Prerequisite, one year of plane geometry. Five credits; winter, spring.

3. **Plane Trigonometry.**—For students in the Colleges of Liberal Arts, Science, Education, Fisheries, Law, and Pharmacy. Prerequisites, one year of algebra and one year of plane geometry. Five credits; each quarter.

4. **College Algebra.**—Prerequisite, course 1 or one and one-half years high school algebra. Five credits; winter.

5. **Analytical Geometry.**—Primarily for students in the College of Science. Prerequisite, Math. 1, 2, and 4. Five credits; spring.

6. **Theory of Investments.**—Primarily for students in commerce. A two quarter course. The first quarter's work deals with the preliminary processes of algebra, together with applications to problems in interest and annuities. The second quarter's work deals with annuities, amortization, capitalization and depreciation, sinking funds, bond values, building and loan associations. This is followed by a brief study of life contingencies, applied to the computation of single and annual premiums on life policies. Prerequisite, one year algebra, one year geometry. Five credits a quarter; autumn, winter, spring.

7. **Elements of Statistical Methods.**—Data obtained by observation, enumeration or estimate, and their application to interpreting social and natural phenomena. Prerequisite, one year algebra, one year plane geometry. Five credits each quarter.

8. **Higher Algebra.**—Primarily for students in the Colleges of Engineering and Mines. Prerequisite, one and one-half years algebra, one year plane geometry. Five credits each quarter.

9. **Trigonometry.**—Primarily for students in the Colleges of Engineering and Mines. Prerequisite, Math. 51. Four credits; each quarter.

10. **Analytical Geometry.**—Primarily for students in the Colleges of Engineering and Mines. Prerequisite, Math. 52. Four credits; each quarter.

11. **Mathematics for Foresters.**—A study of advanced numerical and graphical methods and solution of plane triangles by trigonometric methods. Prerequisite, one and one-half years algebra, one year plane geometry. Three credits a quarter; autumn, winter, spring.

12. **Mathematics for Architects.**—Algebra through quadratic equations and plane trigonometry through solutions of triangles. Advanced topics in algebra; the elements of analytical geometry; elementary differential and integral calculus. Prerequisite, one year algebra, one year plane geometry. Three credits a quarter; autumn, winter, spring.

13. **Calculus.**—Primarily for students in the Colleges of Engineering and Mines. Prerequisites, Math. 2 and 53. Three credits a quarter; autumn, winter, spring.
101. Spherical Trigonometry with Applications—Prerequisite, Math. 2

102, 103. Solid Analytical Geometry—Prerequisite, course 8 or 63. Two credits; autumn, winter, spring.

107, 108. Calculus—Elements of differential and integral calculus. Two credits; spring.

109. Small. Two credits; autumn, winter.


112. Mortality Tables—Various methods of graduation of tables; probabilities of mortality; probabilities of life; force of mortality; probabilities of survivorship; life table; and its use. Three credits; spring.

113. Insurance—Premiums and Reserves—Life annuities and assurances; single and annual premiums; returns; commutation tables; joint life annuities and assurances; relation between annuities and assurances; varying benefits; policy values; surrender values; premiums and reserves. Three credits; spring.

114. Ordinary and Partial Differential Equations—With applications to problems in physics, chemistry, astronomy and engineering. Three credits; spring.

115. Mathematical Theory of Finance—This course is especially designed to meet the needs of expert accountants, majors in business administration, and majors in mathematics who wish to turn their mathematics to account in business. The course includes a comprehensive study of the theory of interest and discount; valuation of annuities; determination of rates of discount and interest; valuation of reinsurance and mortgages; valuation of mortgage securities; valuation of loan and mortgage securities; capitalization and depreciation; sinking funds and amortization of debentures and of options; construction and use of bond tables; Makeham's formula. Three credits; autumn.

116. Mortality Tables—Various methods of graduation of tables; probabilities of mortality; probabilities of life; force of mortality; probabilities of survivorship; life table; and its use. Three credits; spring.

117, 118, 119. Projective Geometry—An analytic treatment. The relations between projective and metric geometry are emphasized. Prerequisite, Math. 8 or 61. Three credits; spring.

121. Analytical Mechanics—For students of science. The aim of the course is to give the student sufficient mathematics to enable him to read the easier scientific papers in the current literature. It presupposes a thorough grasp of elementary physics and mathematics through the calculus. The aim of the course is to give the student sufficient mathematics to enable him to read the easier scientific papers in the current literature. It presupposes a thorough grasp of elementary physics and mathematics through the calculus.

122. Mortality Tables—Various methods of graduation of tables; probabilities of mortality; probabilities of life; force of mortality; probabilities of survivorship; life table; and its use. Three credits; spring.

123. Insurance—Premiums and Reserves—Life annuities and assurances; single and annual premiums; returns; commutation tables; joint life annuities and assurances; relation between annuities and assurances; varying benefits; policy values; surrender values; premiums and reserves. Three credits; spring.

124, 125, 126. Introduction to Applied Mathematics—For students of science. The aim of the course is to give the student sufficient mathematics to enable him to read the easier scientific papers in the current literature. It presupposes a thorough grasp of elementary physics and mathematics through the calculus.

127, 128, 129. Projective Geometry—An analytic treatment. The relations between projective and metric geometry are emphasized. Prerequisite, Math. 8 or 61. Three credits; spring.

121. Analytical Mechanics—For students of science. The aim of the course is to give the student sufficient mathematics to enable him to read the easier scientific papers in the current literature. It presupposes a thorough grasp of elementary physics and mathematics through the calculus.

122. Mortality Tables—Various methods of graduation of tables; probabilities of mortality; probabilities of life; force of mortality; probabilities of survivorship; life table; and its use. Three credits; spring.

123. Insurance—Premiums and Reserves—Life annuities and assurances; single and annual premiums; returns; commutation tables; joint life annuities and assurances; relation between annuities and assurances; varying benefits; policy values; surrender values; premiums and reserves. Three credits; spring.

124, 125, 126. Introduction to Applied Mathematics—For students of science. The aim of the course is to give the student sufficient mathematics to enable him to read the easier scientific papers in the current literature. It presupposes a thorough grasp of elementary physics and mathematics through the calculus.

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124, 125, 126. Introduction to Applied Mathematics—For students of science. The aim of the course is to give the student sufficient mathematics to enable him to read the easier scientific papers in the current literature. It presupposes a thorough grasp of elementary physics and mathematics through the calculus.

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124, 125, 126. Introduction to Applied Mathematics—For students of science. The aim of the course is to give the student sufficient mathematics to enable him to read the easier scientific papers in the current literature. It presupposes a thorough grasp of elementary physics and mathematics through the calculus.

127, 128, 129. Projective Geometry—An analytic treatment. The relations between projective and metric geometry are emphasized. Prerequisite, Math. 8 or 61. Three credits; spring.
DEPARTMENTS OF INSTRUCTION 231

GRADUATE COURSES

201, 202, 203. Introduction to Projective Differential Geometry.—Projective theory of plane and space curves, surface and line congruences, as developed from certain differential equations and their invariants. Prerequisites, Math. 119 and 116. Three credits a quarter; autumn, winter, spring. Carpenter.

*204, 205, 206. Modern Algebra for M.E. Morgan - 3 cr. fall


*211, 212, 213. Foundations of Mathematics.

*214, 215, 216. Complex Variable—Smal1 2 cr. fall,


*221, 222, 223. Higher Plane Curves.

*224, 225, 226. Real Variables.

251, 252, 253. Mathematical Journal and Research Club.—Meets on the second Thursday of each month in Philosophy Hall, room 137, at 5 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. Prerequisite, open to all graduate students in mathematics. No credit; autumn, winter, spring.

Note:—For the teachers’ course, see department of education, Educ. 160-M.

MECHANICAL ENGINEERING

Engineering Hall

Professor Eastwood; Associate Professors Wilson, Winslow;
Instructors, McIntyre, McMinn, Edmonds

70. Marine Gas Engines.—Arranged for the short course in fisheries. Two credits; winter. Wilson.


81. Mechanism.—Operation of machines involving the transmission of forces and the production of determinate motions. Prerequisite, C.E. 2, Math. 52. Three credits; autumn, winter, spring. Wilson, Winslow, McIntyre, McMinn.

82. Steam Engineering.—Various steam apparatus used in modern steam plants; construction, use, and reason for installation. Not open to freshmen. Prerequisite, C.E. 2. Three credits; autumn, winter, or spring. Eastwood, Winslow, McMinn.

83. Steam Engineering Laboratory.—Calibrations of thermometer, gages, indicator springs, etc.; tests of the simple steam engine; one complete engine and boiler test with report. Preceded or accompanied by M.E. 82. Lab. fee, $2. Three credits; autumn, winter, spring. Wilson, Winslow, McIntyre.

*Not offered in 1922-1923.
91, 92, 93. *Machine Design.*—Design of machine details. Preceded or accompanied by M.E. 81. Prerequisite, C.E. 2. Two credits a quarter; autumn, winter or spring. McIntyre, Edmonds, McMinn.

101, 102, 103. *Machine Design.*—Design of hoisting and pumping machinery; special machines. Prerequisite, M.E. 93, C.E. 132. Two credits a quarter (103, three credits); autumn, winter, spring. Winslow.

123, 124. *Engines and Boilers.*—Generation and use of steam in various types of boilers and engines. Three lectures per week autumn quarter; two lectures and three lab. periods a week, winter quarter. Prerequisite, M.E. 82, 93, C.E. 131. Three credits per quarter; autumn, winter. Wilson.

151, 152, 153. *Experimental Engineering.*—Continuation of M.E. 83, involving more extended and complete investigations. Prerequisite, M.E. 83. Lab. fee, $2. Three credits a quarter; autumn, winter, spring. Wilson, Winslow.


179. *Steam Turbines.*—Theory, construction and design of steam turbines. Prerequisite, M.E. 82. Three credits; spring. Eastwood.

182. *Heating and Ventilation.*—Various systems of heating and ventilating, methods or designs and tests. Prerequisite, M.E. 82. Three credits; winter, spring. Eastwood.

183. *Thermodynamics and Refrigeration.*—Fundamental principles underlying the transformation of heat into work, with special application to engineering. Prerequisite, M.E. 82. Five credits; autumn. Eastwood.

184. *Power Plants.*—Design of steam power plants, involving their location, buildings, prime movers, power transmission, etc. Prerequisite, M.E. 123, 83. Three credits; spring. Eastwood.

**185, 186, 187. *Naval Architecture.*—Theory of naval architecture, as pertains to displacement, stability and strength, and the usual calculations involved in construction. Not open to freshmen. Three credits a quarter; autumn, winter, spring. Eastwood.

**188, 189. *Ship Design.*—Application of the principles of naval architecture to the design of a ship for a definite purpose. Prerequisite, M.E. 186. Two credits a quarter; autumn and winter. Eastwood.

**190. *Marine Engineering.*—Power plant equipment of ships, including boilers, engines, auxiliaries and propellers. Prerequisite, M.E. 82, 185. Three credits; spring. Eastwood.


**Will be offered if a sufficient number of students elect the course.
DEPARTMENTS OF INSTRUCTION

210. Thesis.—An investigation, design or experiment under the direction of the professor in charge. Three credits; senior year.

211. Research.—Time to be arranged. Three credits a quarter.

ENGINEERING SHOPS

53, 54, 55. Metalwork.—Foundry; forge; machine work. Lab. deposit, $2. One credit per quarter; autumn, winter, spring.

105, 106, 107. Metalwork.—Advanced machine shop practice. Prerequisite, E. 55. Laboratory deposit, $2. One credit a quarter; autumn, winter, spring.

108. Metalwork.—Manual arts for teachers. Prerequisite, E. 107. One credit; autumn, winter, or spring.

MILITARY SCIENCE AND TACTICS

The Armory

Colonel Piaseck, Lieutenant Colonel Notte, Lieutenant Colonel Clark, Major Muhlenberg, Major Piaseck, Major Dennis, Major Rowland, Major Gidouche, Captain Underwood, Captain Piaseck, Captain Halb, Lieutenant Nolan, Lieutenant Halber, Warrant Officers White, First Sergeant Thomas, Quartermaster Sergeant Wunderlich, Sergeants Lang, Boyle, Bailey, Kent, Buckett, palms, Privates First Class Friedman, Hovnas, Hoagman.

All male students in the University who are American citizens, and not physically disqualified, are required to take military training throughout the first two years of attendance. The present requirement is five hours per week.

The instruction of these two years, together with that provided for the third and fourth years, constitute the courses prescribed by the War Department for institutional units of the Reserve Officers' Training Corps. Three of these units have been established in this University, Infantry, Coast Artillery and Air Service, each leading to commissions as Reserve Officers in the appropriate corps. The advanced courses, those of the third and fourth years, are open to all students who have completed the first two years—basic course—of instruction and training.

All assignments for instruction and training will be made at the time of registration with the military department.

In addition to the above courses, the University has provided for those students who desire to major in military science a four-year curriculum which will give a good general college education upon which any line of professional or technical study may be based and which will give to the graduate the degree of B.S. in Military Science, and at the same time enable him to obtain a commission as second lieutenant in the Officers Reserve Corps of the United States Army in accordance with the provisions of the National Defense Act.

FIRST YEAR

One and two-thirds credits a quarter, five hours a week.

Basic Courses—All Units


7. **Rifle Marksmanship.**—Practical. M, W, F. Three hours a week; spring quarter.

8-9-10. **Special Infantry Instruction.**—Practical. T.-11. One hour a week.

16-17-18. **Special Coast Artillery Instruction.**—Practical. T.-11. One hour a week.

30-31-32. **Special Air Service Instruction.**—Practical. T.-11. One hour a week.

**Summer Basic Camp.**—Optional after completion of first or second year's course. Students attending Basic Camp, with satisfactory records in the military department and at camp, will be credited with one quarter's work of that prescribed for the second year provided and when they shall sign the contract for the advanced course.

**SECOND YEAR**

One and two-thirds credits a quarter, five hours a week.

Basic Courses—All Units


53-54-55. **Special Infantry Instruction.**—Practical. T.-11. One hour a week.

56-57. **Musketry.**—Theoretical and practical. M, W, F. Three hours a week; autumn, winter.

58. **Map Reading and Military Sketching.**—Theoretical and practical. M, W, F. Three hours a week; spring.

Special Course—Coast Artillery

66-67-68. **Special Coast Artillery Instruction.**—Practical. T.-11. One hour a week.

69-70-71. **Coast Artillery Material.**—Practical. M, W, F. Three hours a week.

72. **Motor Transport.**—Practical. M, W, F. Three hours a week; spring.

Special Course—Air Service

80-81-82. **Special Air Service Instruction.**—Practical. T.-11. One hour a week.

83. **Air Service Weapons.**—Practical. M, W, F. Three hours a week; autumn.

84. **General Air Service Subjects.**—Practical. M, W, F. Three hours a week; autumn.

85-86. **Communications.**—Practical. M, W, F. Three hours a week; winter, spring.

87. **Liaison.**—Practical. M, W, F. Three hours a week; spring.

Basic Courses—All Units

100-101-102. **Infantry Drill. Ceremonies.**—Practical. Th.-11 One hour a week.

106. **Military Law.**—Theoretical. Two hours a week; autumn.

107. **Military History.**—Theoretical. Two hours a week; autumn.
DEPARTMENTS OF INSTRUCTION

Special Course—Coast Artillery


119. *Orientation.*—Theoretical. Two hours a week; winter.

120. *Field Engineering.*—Theoretical. Two hours a week; spring.

121. *Administration.*—Theoretical. Two hours a week; spring.

Special Course—Air Service


133. *Communications.*—Theoretical. Two hours a week; winter.

134. *Field Engineering.*—Theoretical. Two hours a week, spring.

135. *Administration.*—Theoretical. Two hours a week; spring.

FOURTH YEAR

Three credits a quarter, four hours a week.

Basic Courses—All Units

150-151-152. *Infantry Drill, Ceremonies.*—Practical. Th.-11. One hour a week.

Special Course—Infantry


156-157-158. *Minor Tactics.*—Theoretical.—Two hours a week.

159. *Administration.*—Theoretical. Two hours a week; autumn.

Special Course—Coast Artillery


169-170. *Gunnery.*—Theoretical. Two hours a week; autumn, winter.

171. *Employment of Artillery.*—Theoretical. Two hours a week; spring.

Special Course—Air Service


183. *Aerial Photography.*—Theoretical. Two hours a week; autumn.

THIRD YEAR

Three credits a quarter, four hours a week.

184. *Aerial Gunnery.*—Theoretical. Two hours a week; autumn.

185. *Aeronautical Engines.* Two hours a week; autumn.

186-187. *Air Planes.*—Theoretical. Two hours a week; winter, spring.

188. *Minor Tactics.*—Theoretical. Two hours a week; spring.
UNIVERSITY OF WASHINGTON

METALLURGY

Mines Hall

PROFESSOR ROBERTS; ASSOCIATE PROFESSOR DANIELS, COREY; ASSISTANT, REDMOND

Note: Mining, metallurgical, geological, or ceramic experience. Each student is required to spend at least one summer vacation, or its equivalent, in practical contact with the industry, and to submit upon his return to college a detailed report of his observations. Work of this nature offers an opportunity to secure data and material for the graduation thesis.

101. Fire Assaying.—Testing of reagents, crushing, sampling and assaying of ores, furnace and mill products. Prerequisite, Chemistry 111. One recitation and three laboratory periods. Lab. fee, $20. Five credits; autumn.

102. General Metallurgy.—Properties of metals and alloys, fuels, refractory materials; furnaces; the extraction of the common metals from their ores. Visits to smelters. Prerequisite, junior standing. Three recitations and two laboratory periods. Lab. fee, $10. Five credits; spring.

103. Metallurgical Fuels.—Analysis of fuels and consideration of the most effective utilization of the country's present supplies. Prerequisite, junior standing. Two recitations and one laboratory period. Lab. fee, $5. Three credits; winter.

104. Non-ferrous Metallurgy.—Metallurgy of copper, lead, gold and silver, especially the methods of roasting, smelting, lixiviation and refining. Prerequisite, Met. 102. Five recitations. Five credits; autumn.

105. Wet Assaying.—Technical methods for the determination of copper, lead, zinc, etc., in ores and furnace products. For students in ceramics, analysis of clays and ceramics products. Prerequisite, Met. 102, Chem. 111. One recitation and two laboratory periods. Lab. fee, $12. Three credits; winter.

106. Iron and Steel.—Metallurgy and manufacture of commercial iron and steel; special reference to their properties and uses in engineering work. Prerequisite, junior standing. Three recitations. Three credits; autumn.

107. Design of Plant.—Design of a piece of equipment or a structure for mining, milling, or metallurgical purpose. Prerequisite, senior or graduate standing. Three drafting periods. Three credits; spring.

108. Minor Metals.—Metallurgy of zinc, antimony, tin, aluminum, nickel, etc.; a study of the plant required, the methods and costs of treatment. Three credits; spring.


110. Metallography.—Constitution and microstructure of metals and alloys, especially iron and steel. Prerequisite, senior standing. Two recitations. Two credits; autumn.

111. Metallography.—Preparation and study of metal sections, photomicrography and the use of the microscope in testing industrial alloys. Two laboratory periods. Lab. fee, $5. Two credits; winter.

112. Metallurgy Calculations.—Physical chemistry for the metallurgists, slag calculations, etc., illustrated by figures quoted from the present practice
DEPARTMENTS OF INSTRUCTION

166. Electrometallurgy.—Study of methods and practice with special consideration of the possibilities of electrometallurgical industries in the Pacific Northwest. Prerequisite, senior or graduate standing. Three credits; spring. Corey

211, 212, 213. Metallurgical Research.—Study of methods applicable to the development of metallurgical processes for special ores and metals. Prerequisite, graduate standing. Hours and credits to be arranged. Corey

221, 222, 223. Advanced Metallurgy.—Application of electro-chemical and electrometallurgical knowledge to the solution of the particular problems of the Pacific Northwest. Prerequisite, graduate standing. Hours and credits to be arranged. Corey

MINING

Mines Hall

PROFESSOR ROBERTS; ASSOCIATE PROFESSORS DANIELS, COREY;
ASSISTANT PROFESSORS, WILSON; LECTURERS, GLENN, POWELL; ASSISTANTS,
SCHONING, MCCORMICK, MCKIM

NOTE—Mining, metallurgical, geological, or ceramic experience. Each student is required to spend at least one summer vacation, or its equivalent, in practical contact with the industry, and to submit upon his return to college a detailed report of his observations. Work of this nature offers an opportunity to secure data and material for the graduation thesis.

51. Elements of Mining.—Study of the field of mining, considering prospecting, boring, drilling, explosives, rock breaking, timbering, methods of development and working, transportation and drainage. Prerequisite, sophomore standing. Three recitations. Three credits; autumn. Daniels

101. Milling.—Preliminary course, designed to familiarize all students in the department with the principles and uses of the various types of crushing, sampling, concentrating and washing machinery in the Mines Building. Prerequisite, junior standing. Two recitations and one lab. period. Lab. fee, $5. Three credits; autumn. Roberts, Daniels.


106. Mining Excursion.—A ten-day excursion, or two trips of five days each, taken in the spring of each year to a neighboring mining region; detailed examinations of mining and metallurgical industries. Expense varies from $25 to $50. Two credits; spring. Roberts, Daniels, Corey.

120. Coal Resources of North America.—The occurrence of coal in North America with special reference to geographic and geologic distribution and structure; classification and commercial requirements of coals. Prerequisite, Min. 51. Three recitations. Three credits; spring. Daniels.

122. Coal Mining Methods.—Prospecting and development. Detailed study is made of a nearby mine. Prerequisite, Min. 51. Three recitations. Three credits; winter. Daniels.

151. Mining Engineering.—Lectures on exploration, mine development, power generation, air compression, hoisting and transportation. Practice with air compressors, machine drills, and mine equipment in laboratories and local plants. Prerequisite, senior standing. Two recitations, one lab. period. Lab. fee, $5. Three credits; autumn.
152. Ore Dressing.—A detailed study of certain branches of ore dressing accompanied by mill tests of ores checked by assays. Prerequisite, senior standing. Three recitations and two laboratory periods. Laboratory fee, $10. Five credits; spring. Roberts, Daniels.

153, 154, 155. Thesis.—The preparation of a graduation thesis, including outline, gathering of material, making of drawings, maps, tests, etc. The laboratory work is supplemented by consultation and conferences. A fee of $5 or $10 per quarter will be required to cover cost of materials in thesis work involving the use of mining or metallurgical equipment. Completed thesis must be submitted at least one month before graduation. Prerequisite, senior standing. Five lab. periods. Total of five credits required. Roberts, Daniels, Corey.

158. Mining Law.—A series of lectures on the mining laws of the United States and Alaska; illustrated by diagrams and mine maps. Two lectures. Two credits; winter. O'Bryan.

162. Mining Methods.—A detailed study of mining methods and costs. Prerequisite, senior mining standing. Three recitations. Three credits; winter. Roberts.

163. Mine Operation.—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. Prerequisite, senior standing. Three recitations. Three credits; winter and spring. Roberts.

170. Coal Mining Machinery.—Study of coal cutting machines, mine locomotives, fans, hoists, and pumps with especial reference to application to coal mining. Prerequisite, senior standing. Three recitations. Three credits; autumn. Daniels.

171. Mine Gases and Ventilation.—Composition and properties of mine gases, methods of testing; lighting of mines; principles of ventilation; ventilating machinery. Prerequisite, Min. 122. Three recitations. Three credits; winter. Daniels.

172. Coal Mining Plant.—Design of plant and machinery employed in mining and preparing coal for market. Prerequisite, senior standing. Three drafting periods. Three credits; spring. Daniels.

176. Coal Preparation.—Methods of preparing coal for market, together with laboratory tests and runs on various coals, to determine best methods of preparation. Prerequisite, Min. 101, Met. 103. Two recitations and three lab. periods. Lab. fee $10. Five credits; winter. Daniels.

178. Coal Preparation Machinery.—Machines and equipment used in tipples and washeries for the screening and washing of coal. Prerequisite, Min. 176. Two recitations. Two credits; spring. Daniels.

182. Mine Management.—Organization and administration of engineering plants, the keeping and interpretation of cost accounts, the efficiency of labor and methods, the financial, legal and social aspects of engineering operation. Prerequisite, senior standing. Three recitations. Three credits; spring. Daniels.

201, 202, 203. Seminar.—Lectures and discussions by Bureau of Mines staff, College of Mines faculty and fellows. Required of Bureau of Mines fellowship holders. Prerequisite, senior or graduate standing. One credit; autumn, winter, spring. Roberts, Daniels, Corey, Wilson.
DEPARTMENTS OF INSTRUCTION

211, 212, 213, 214. Graduate Thesis.—Preparation of a thesis in mining engineering, metallurgy or ceramics. Prerequisite, graduate standing. A fee will be required if the work involves the use of laboratory materials or equipment. Hours and credits to be arranged.

Roberts, Daniels Corey, Wilson

221, 222, 223. Mine Development.—Preparation of a plan of development for a metal mine, including studies of the geological conditions, surface and underground explorations, mining methods, layout of plant. Prerequisite, graduate standing. Hours and credits to be arranged.

Roberts

231, 232, 233. Mill Design.—Design of a plant for ore dressing purposes. Prerequisite, graduate standing. Hours and credits to be arranged. Roberts

241, 242, 243. Coal Mining.—Methods applicable to the solution of problems in the coal mining industry; higher recovery of minable coal; economical layout of mine and plant; application of improved methods and machinery. Prerequisite, graduate standing. Hours and credits to be arranged.

Daniels

251, 252, 253. Coal Preparation.—Advanced study of methods of coal preparation based on careful preliminary studies of character of coal and impurities in any locality. Laboratory testing will be emphasized. Prerequisite, graduate standing. Hours and credits to be arranged.

Daniels

261, 262, 263. Utilization of Coal.—Investigation of the possibilities of use of coals of low rank and quality. Briquetting, pulverization, and distillation will be given special attention. Prerequisite, graduate standing. Hours and credits to be arranged.

Daniels

MINING AND METALLURGICAL RESEARCH

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. The preparation and utilization of coal.
2. Ceramics.
3. Electrometallurgy.

MUSIC

Music Building

1, 2, 3. Music Appreciation.—Planned to aid not only music students but also all interested in music to become intelligent and discriminating listeners. Musical masterpieces, both instrumental and vocal, of different periods and forms, will be presented and discussed. Two credits a quarter; autumn, winter, spring.

Van Ogle, French

4, 5, 6. History of Music.—The progress of musical development from the primitive period to the modern. Two credits a quarter; autumn, winter, spring.

French

7, 8, 9. Sight Singing.—For prospective grade supervisors and for music students. Two sections—one for beginners and the other for students who
have had some experience in sight singing. Two credits a quarter; autumn, winter, spring.

10, 11, 12. Choral Study.—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. One credit a quarter; autumn, winter, spring.

14, 15, 16. Ear Training and Melody Writing.—Principles of melodic invention and training in hearing accurately; study in notation. Two credits a quarter; autumn, winter, spring.

14D. Ear Training.—An intensive course for qualified students. Equivalent to Mus. 14, 15, 16. Five credits a quarter; autumn.

17. Choral Study.—Part songs for men's voices. Candidates admitted only upon examination. Two credits; autumn.

18, 19, 20. Applied Music (Freshman).
68, 69, 70. Applied Music (Sophomore).
118, 119, 120. Applied Music (Junior).
168, 169, 170.—Applied Music (Senior).

Students of other colleges and schools may earn one or two credits a quarter in the applied music courses. 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. One to three credits a quarter.

(a) Piano.—Venino, Van Ogle, Ferryman.
(b) Violin.—Rosen.
(c) Voice.—Glen, Tilley
(d) Violoncello.—Kirchner.
(e) Pipe Organ.—Burch.

22, 23, 24. University Band.—Competent players of band instruments are admitted to the band upon consent of the bandmaster. Two credits a quarter; autumn, winter, spring.

28, 29, 30. Ensemble Singing.—A choral course for women. Only advanced students will be admitted. One credit a quarter; autumn, winter, spring.

31, 32, 33. University Orchestra.—The orchestra affords to qualified students an opportunity for the study of the better grades of orchestral composition. No one is eligible to enter the course unless the director is satisfied of the ability of the applicant. One credit a quarter; autumn, winter, spring.

34, 35, 36. Voice Training.—Presenting the principles of correct breathing and tone production essential to good singing. Two credits a quarter; autumn, winter, spring.

51, 52, 53. Harmony.—Ear training, analysis, and keyboard practice. Pre-requisite, Mus. 7, 8, 9, and 14, 15, 16. Three credits a quarter; autumn, winter, spring.

*Only those who have successfully completed the work in course 11 will be eligible for registration in course 12.
DEPARTMENTS OF INSTRUCTION

51D, 52D. Harmony.—An intensive course for qualified students. Equivalent to Mus. 51, 52, 53. Prerequisite, Mus. 14, 15, 16, or 14D. Five credits a quarter; winter and spring.

French

54, 55, 56. School Music.—A course for supervisors Prerequisite, Mus. 7, 8, 9, and 14, 15, 16. Two credits a quarter; autumn, winter, spring. Dickey

*57, 58, 59. Advanced Sight Singing.

101, 102, 103. Advanced Harmony.—Prerequisite, Mus. 51, 52, 53. Three credits a quarter; autumn, winter, spring.

Wood, Wilson

104, 105, 106. History of Music, Advanced.—Detailed study of important periods and composers of modern music. Two credits a quarter; autumn, winter, spring.

Van Ogle

107, 108, 109. Counterpoint.—The regulation of two or more simultaneous melodies. Prerequisite, Mus. 51, 52, 53. Two credits a quarter; autumn, winter, spring.

Wood

110, 111, 112. Instrumental Form.—Analysis of many examples and simple exercises in composition. Prerequisite, Mus. 51, 52, 53. Two credits a quarter; autumn, winter, spring.

Wood

113, 114. Music Education.—Psychological and pedagogical principles and their application to the teaching of music. Prerequisite, Mus. 54, 55, 56. Two credits a quarter; autumn, winter.

Dickey

124, 125, 126. Chamber Music.—Advanced study of the musical literature for string trios, quartets and quintets. One credit a quarter; autumn, winter, spring.

Rosen

127, 128, 129. Advanced Sight Singing.—Study of larger choral works. Prerequisite, Mus. 7, 8, 9, or instructor's permission. Two credits a quarter; autumn, winter, spring.

Dickey

130, 131, 132. University Band (advanced).—Continuation of the work of the freshman and sophomore years in the study and production of more difficult compositions for band. One credit a quarter; autumn, winter, spring.

Adams

151, 152, 153. Musical Appreciation.—An appreciative study of some modern composers and schools. Two credits a quarter; autumn, winter, spring.

Van Ogle

154, 155, 156. Music Education and Supervision.—For seniors and students of experience. High school, normal school and institute music. Prerequisite, Mus. 113, 114, and Educ. 160N. Two credits a quarter; autumn, winter, spring.

Dickey

157, 158, 159. Free Composition.—Choral work, piano accompaniment idioms, vocal and instrumental solos and pieces in the smaller forms. Prerequisite, Mus. 101, 102, 103. Two credits a quarter; autumn, winter, spring.

Wood

160, 161, 162. Polyphonic Forms.—Free counterpoint applied to the invention, cannon, fugue, etc. Analysis and composition. Prerequisite, Mus. 107-108-109. Two credits a quarter; autumn, winter, spring.

Wood

NOTE:—For teacher's course in school music see department of education, Educ. 160-N.

*Not offered in 1922-1923.
COLLEGE COURSES IN APPLIED MUSIC

The courses outlined are not arbitrary. They 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. This practice will be discontinued at the end of the year 1922-1923. Approved equivalents of applied music courses in piano, voice and violin may also be credited.

PIANO

Scholarship in Piano Study.—Mr. A. F. Venino offers an annual scholarship to the candidate showing the greatest proficiency and promise in piano playing. This scholarship carries free tuition for one weekly lesson throughout the autumn, winter and spring quarters. All candidates must submit their application in writing to Dean Glen before September 1. The competitive examination preliminary to the award will be held in the Music Building at 2 p.m. of the Saturday before registration day.

Freshman and Sophomore Years.—Major and minor scales and arpeggios; studies selected from Czerny, Cramer, Loeffsorn, 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 of 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.

VOCAI MUSIC

The course in vocal music is even more flexible than outlined for piano study. The purpose is to develop the voice and musical understanding so that the best in vocal music may be faithfully interpreted. The fact of having studied vocal music for four years will not necessarily entitle a student to graduation.

Freshman.—Practical work in voice placing, breathing studies from among the following: Concone, Op. 9; Marchesi, Op. 1; Panofka, Op. 85; Vaccai, Book I; simple Italian and English songs.

Sophomore.—Progressive tone work; Bordogni, Concone, Marchesi, Panofka, simple Italian arias, Italian and English songs.

Junior.—Tone work; advanced technique. Arias from Italian, French and German operas. German song classics; modern French and English songs.

Senior.—Tone work and technique. Repertoire in opera and oratorio; recitals; senior program.
**DEPARTMENTS OF INSTRUCTION**

**VIOLIN**


*Sophomore.*—Scales, Hilmary; 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; Concerto, 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, Wieniawski and No. 4 Vieuxtemps.

In the last quarter 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, $22 a quarter; Mrs. Van Ogle, $22 a quarter; Miss Ferryman, $15 a quarter.

*Vocal Music.*—Miss Tilley, $22 a 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 a quarter for one lesson weekly.

*Violin.*—Mr. Rosen, $22 a quarter. Miss Benton, $15 a quarter.

*Pipe Organ.*—Miss Burch, $15 a quarter.

*Band and Orchestra Instruments.*—Mr. Adams, $15 a quarter.

Arrangements may be made for individual instruction in other musical courses if necessary or desirable.

Piano for practice may be rented at the comptroller’s office at the following rates:

- One hour daily, $3 a quarter.
- Two hours daily, $5 a quarter.
- Pipe organ for practice; one hour daily, $12.50 a 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.

**NURSING**

*Home Economics Hall*

**ELIZABETH S. SOULE**

1. *History of Nursing.*—Informational study of nursing from the earliest times; the traditions of nursing as a profession. Open to any woman student in the University. Five credits; autumn.
3. Ethics of Nursing.—A course designed to introduce the student to those recognized principles which govern her relationship to the patient, the physician, the hospital and the public. Three credits; spring. Soule.

5. Home Care of the Sick.—A practical course for women students. Instruction given in baths and bed making, care of patients ill with common contagious diseases, care of chronic invalids and babies. Two credits; autumn, winter, spring. Soule.

51, 52, 53. Public Health and Special Fields.—Lectures on various phases of public health work in relation to special problems. Case plans discussed and study of records made. Two credits a quarter; autumn, winter, spring. Soule.

102. Principles of Public Health Nursing.—Lectures on social and nursing technique in public health nursing. Discussion and observation of infant welfare, school, industrial, tuberculosis, and general visiting nursing. Theoretical and practical work required. Prerequisite, graduate registered nurse. Three credits; autumn. Soule.

103. Administration of Public Health Nursing.—Course deals with the organization and administration of societies organized for visiting nursing, methods of collecting funds, boards of directors, and various committees of these associations, office equipment, records, vital statistics, and supervision of staff nurses will be dealt with. Prerequisite, Nurs. 102. Three credits; winter, spring. Soule.

110. Public Health Nursing.—The field work is intended to give a practical knowledge of the entire field of public health nursing. Discussion of family problems, demonstration in nursing technique, culture taking, milk modification, maternity care, discussion of general district problems, current events, home visiting in relation to communicable diseases, including tuberculosis, sick and well babies, pre-natal cases, general visiting nurse work, free and pay cases and follow-up work of the schools. Prerequisite, Nurs. 102. Eight to sixteen credits; time to be arranged. Soule.

ORIENTAL HISTORY, LITERATURE AND LANGUAGES

Philosophy Hall

Professor Gowen

The requirement of one year's work in ancient languages and literature may be satisfied by courses 50, 51 and 52. Courses 21, 22 and 23 count for credits in the department of history; courses 40, 41 and 42 in the College of Business Administration; and courses 114, 115 and 116 in the department of philosophy. Courses above 100 are for juniors, seniors and graduates.

21. History of China I.—History of China from the earliest times to the Manchu Conquest. Three credits; autumn. Gowen


23. History of Japan.—Japan from the earliest times to the present. Three credits; spring. Gowen.

30-31-32. Semitic Literature.—A study of the literature of the Old Testament. Continuous through the three quarters, but each course independent and self-contained. One credit a quarter; autumn, winter, spring. Gowen.

40-41. Oriental Institutions.—Japan, Russia, and China.—The physical geography, social character and commercial resources of the Orient. Two credits a quarter; autumn, winter.
50. Literature of India.—Five credits; autumn. Gowen.

51. Literature of Egypt, Babylonia, and Palestine.—Five credits; winter. Gowen.

52. Literature of Arabia and Persia.—Five credits; spring. Gowen.

100-101-102. Hebrew.—The giving of these courses depends upon registration. Five credits a quarter; autumn, winter, spring. Gowen.

104-105-106. Sanscrit.—The giving of these courses depends upon registration. Five credits a quarter; autumn, winter, spring.


3. Principles of Design.—The principles of design in line, dark and light, and color. For students in home economics. Four credits; autumn, winter, spring. Sirgenson.

5-6-7. Free-hand Still Life and Cast.—The technique of drawing from elementary forms, with all mediums—water color, oil, pen, etc. Prerequisite for any subsequent course in drawing and painting; cast drawing from models of antique and modern sculpture, preparatory to drawing from living model. Lab. fee, $2. Three credits a quarter; autumn, winter, spring. Patterson.

9-10-11. Art Structure.—A study of the principles of design in line, dark and light, and color, to develop power of appreciation and creation of good design. Prerequisite for any subsequent course in art structure. Lab. fee, $2. Four credits a quarter; autumn, winter, spring. Edens, Sirgenson, Storm.

16-17-18. Art Appreciation.—Historical development, from the art of primitive man to the present day. One credit a quarter; autumn, winter, spring. Rhodes.

53. Art Structure.—Batik and tie-dyeing. Lab. fee, $2. Four credits; autumn. Storm.

54. Art Structure.—Bookbinding and woodblock printing. Lab. fee, $2. Four credits; winter. Storm.

55. Art Structure.—Textile design. Lab. fee, $2. Four credits; spring. Storm.

56-57-58. Illustration.—Drawing and painting, from the model in various mediums, for reproductive processes such as magazines, newspapers and commercial work. Prerequisite: freshman free-hand. Lab. fee, $3. Three credits a quarter; autumn, winter, spring. Patterson.
59-60. Household Design.—Designs for tiles, leaded glass, metalworks, fixtures and embroidery. Three credits a quarter; autumn, winter, spring.

72-73. Sculpture—Clay Modeling.—Construction of plaster moulds, elementary construction; modeling in clay and wax. Lab. fee, $3. Three credits; autumn, winter, spring.

101. Public School Drawing.—For drawing supervisors. The working out of such drawings as would be used in the public schools. Three credits; spring.

103-104. Art Structure.—Pottery.—Advanced students will be allowed to work for advanced credits. Lab. fee, $2. Three credits a quarter; autumn, winter. 104 given fall for A. Donahoe.

105. Art Structure.—Design as applied to lettering, advertising, and posters. Three credits; autumn. Rhodes.


107-109. Portrait.—Portraiture in all mediums. Prerequisite, freshman free-hand. Lab. fee, $3. Three credits a quarter; autumn, winter, spring.

110-112. Art Structure.—Interior decoration. Three credits a quarter; autumn, winter, spring. Lacy—Campbell.

113-115. Furniture Design.—Lectures on the history of furniture and the working out of original designs in furniture. Two credits a quarter; autumn, winter, spring. Lacy—Campbell.

151-152. Landscape.—Interpretations of landscape in design. Three credits a quarter; winter, spring. Rhodes: 151—Patterson, 152—Nobles.

163-165. Mural Decoration.—Decorative compositions done in oil applied to the beautifying of wall spaces, in harmony with the scheme of architecture. Prerequisite, junior standing. Lab. fee, $3. Three credits a quarter; autumn, winter, spring. *166. Landscape Mrs. Ducasse—Ok for 164.

169-171. Textile and Costume Drawing.—Two credits a quarter; autumn, winter, spring.

172-174. Interior Decoration.—Advanced problems in interior decoration in elevation and perspective. Five credits a quarter; autumn, winter, spring. Campbell.

*NOTE:—For teacher’s course in methods of teaching art, see department of education.

PHARMACY AND PHARMACEUTICAL CHEMISTRY, MATERIA MEDICA AND FOOD CHEMISTRY

Professor Johnson; Associate Professor Osseward; Assistant Professor Lynn; Instructors, Goodhue, Hilton and Assistants

1, 2, 3. Theoretical and Manufacturing Pharmacy.—Study of the principles of pharmaceutical operations, and manufacture of Pharmacopoeial and

*Not offered in 1922-1923.
National Formulary preparations. Three lectures and two laboratory periods per week. Lab. fee, $7.50 a quarter. Five credits a quarter; autumn, winter, spring. Goodrich, Hiltón.

4. Commercial Pharmacy.—A lecture course covering the commercial problems of the practical pharmacist. Two credits; spring. Osseward.

5, 6, 7. Drug Assaying.—Experiments in gravimetric and volumetric analysis are given with the idea of training the student in the fundamental principles of quantitative analysis, at the same time making them familiar with the analysis of substances of pharmaceutical importance. Alkaloid assay of crude drugs and assay of volatile oils are a part of the course. Two lectures and three laboratory periods per week in autumn and winter quarter. Two lectures and two laboratory periods per week in spring quarter. Five credits; autumn, winter. Four credits; spring. Lab. fee, $7.50. Goodrich.

9, 10, 11. Prescriptions.—Study of dispensing and laboratory practice. Students criticise and compound approximately two hundred selected prescriptions. One lecture and one laboratory period a week. Deposit $3, a quarter. Two credits a quarter; autumn, winter, spring. Osseward.

12, 13. Materia Medica.—Study of crude organic drugs, their source, methods of collecting and preserving, identification, active constituents and adulterations. Three lectures a week. Three credits; winter, spring. Goodrich.

15. Field Materia Medica.—Study of the native medicinal plants of Washington and plants under cultivation in the drug garden. One laboratory period per week, consisting largely of work in the drug garden and field trips. Lab. fee, $1. One credit; spring. Goodrich.

16. Food Laws.—National, state and foreign food laws. For students in the department of fisheries. One credit; winter. Lynn.

101, 102, 103. Pharmacology and Toxicology.—The physiological actions of drugs in health and disease; the therapeutic uses and posology; symptoms and treatment in cases of poisoning. Two credits a quarter; autumn, winter, spring. Lynn.

105, 106, 107. Chemistry and Analysis of Food.—Methods of analysis of food products and the study of federal and state laws regulating the sale of foods and drug products. Methods of the Association of Official Agricultural Chemists are used. Lab. fee, $7.50 a quarter. Five credits a quarter; autumn, winter, spring. Lynn.

113, 114, 115. Advanced Prescriptions.—Extensive practice in difficult and incompatible prescriptions, also a study of special problems in dispensing. Credit to be arranged. Deposit according to credit. Autumn, winter, spring. Osseward.


121, 122, 123. Toxicology.—Laboratory course in the separation, identification and estimation of inorganic and organic poisons and in the analysis of alkaloids. Laboratory deposit according to credit. Credit to be arranged; autumn, winter, spring. Johnson.

*Not offered in 1922-1923.
125, 126, 127. *Current Problems.*—Lecture and recitation course in current pharmaceutical problems, commercial and scientific. Use is made of the current number of most of the pharmaceutical journals published in the United States, also of several medical journals. One credit; autumn, winter, spring.

129, 130, 131. *Manufacturing Pharmacy.*—Advanced course in pharmaceutical manufacturing, including the manufacture of some of the more difficult of the Pharmacopoeial and National Formulary preparations, as well as a number of organic and inorganic compounds used in pharmacy and medicine. Laboratory deposit according to credit. Credit to be arranged; autumn, winter, spring.

201, 202, 203. *Investigation.*—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. Laboratory deposit according to credit. Credit to be arranged; autumn, winter, spring.

**PHILOSOPHY**

*Philosophy Hall*

Professor Savery; Assistant Professor Ducasse; Instructor Blake; Teaching Fellows and Assistants

The Liberal Arts requirement is five credits in philosophy. This requirement may be satisfied by any one of the following courses: Philosophy 1, 2, 3, 5. (None of these has any prerequisites).

Philosophy 2 is required of seniors in the College of Business Administration.

Philosophy 1, 2 and 5 are suited to arts-law students.

Psychology 1 is required of majors in philosophy.

1. *Introduction to Philosophy.*—Five credits; autumn, winter, spring.

2. *Introduction to Social Ethics.*—Social ideals and problems, with special emphasis upon the opposition of democracy and aristocracy in government, industry, law, education, art, and religion. Five credits; winter.

3. *Introduction to Ethics.*—Ethical principles and their application to the problems of life. Five credits; spring.

5. *Introduction to Logic.*—The conditions of clear statement, adequate evidence, and valid reasoning, and their establishment in the mental processes of the student. Five credits; autumn and winter.

101-102-103. *History of Philosophy.*—Ancient, medieval and modern. Three credits a quarter; autumn, winter, spring.

104-105-106. *Metaphysics.*—A course in metaphysics, with special reference to the concepts and principles of science. For advanced students in philosophy or in the physical or biological sciences. Three credits a quarter; autumn, winter, spring.

*113. Philosophy of Religion.*


*Not offered in 1922-1923.*
DEPARTMENTS OF INSTRUCTION

Euphrates Valley. Winter quarter: The religions of the Far East. Spring quarter; Judaism, Muhammadanism, and Christianity. Three credits a quarter; autumn, winter, spring.

123. Philosophy in English Literature of the Nineteenth Century.—From Wordsworth to Shaw, Wells and Chesterton, and including Emerson, Whitman and Masters. (Alternates with Eng. 187 as requirement for seniors in the Library School.) Prerequisite, Phil. 1. Five credits; spring. Gowen

129. Esthetics.—The origin and motives of art and the esthetic principles of the different forms of art. Five credits; spring. Savery.

132. Social Ethics.—(Same as course 2). Social ideals and problems, with special emphasis upon the opposition of democracy and aristocracy in government, industry, law, education, art, and religion. Five credits; winter. Ducasse.

133. Ethical Theory.—An advanced course in the fundamental concepts and principles of ethics. Prerequisite, Phil. 2 or 3. Two credits; spring. Savery.

141-142-143. Contemporary Philosophy.—A study of modern movements and controversies. Readings and discussions on such topics as pragmatism, the new intuitionism, mysticism, the philosophy of faith, fate and free will, mechanism and vitalism, materialism and idealism, the finite and infinite, the new realism, the nature of mind, relativity. Two credits a quarter, autumn, winter, spring. Blake.

*English 187. Philosophy in Contemporary Drama.

GRADUATE COURSES

211-212-213. Philosophy of Mathematics.—An account of symbolic logic and its relation to the remainder of mathematics. Open to students upon approval of instructor. Two credits a quarter; autumn, winter, spring. Savery.

241-242-243. Plato and Aristotle.—Reading of the texts in translation, with discussion and interpretation. Two or three credits a quarter; autumn, winter, spring. Blake.

247-248-249. Seminar. The Philosophy of Schopenhauer and Nietzsche.—The philosophy of the will. The will to live 'and the will to power. Contrast of Schopenhauer's pessimism and Nietzsche's affirmation of the value of life, Schopenhauer's doctrine of sympathy and Nietzsche's egoism, democratic and aristocratic codes of morality, the saint and the superman. Open to students upon approval of instructor. Two or three credits a quarter; autumn, winter, spring. Ducasse.

PHYSICAL EDUCATION AND HYGIENE FOR MEN

Gymnasium

ASSISTANT PROFESSOR ABELHINOT, DIRECTOR;
PROFESSOR HALL, UNIVERSITY HEALTH OFFICE

Requirements for Graduation.—All students, both men and women, are required to take a prescribed amount of directed physical training and hygiene or military science and tactics.

Military Training.—Requirements in military science and tactics take precedence over the requirements in physical education. (See Military Science and Tactics.)

*Not offered in 1922-1923.
Physical Examination.—Upon entering college each student is given a physical examination. On the basis of their examination students are segregated in three divisions: A, B, and C.

All able bodied men shall satisfy all requirements in this department with two years of military science and tactics. Students exempt from military training for any reason must take the same number of hours in physical training.

1-2-3. Calisthenics and Gymnasium.—Introductory courses for freshmen. One and two-thirds credits a quarter; autumn, winter, spring. Arbuthnot.

16-17-18. Intramural Sports and Games.—For freshmen. One and two-thirds credits a quarter; autumn, winter, spring.

51-52-53. Calisthenics and Gymnastics.—For sophomores. One and two-thirds credits a quarter; autumn, winter, spring.

57-58-59. Intramural Sports and Games.—For sophomores. One and two-thirds credits a quarter; autumn, winter, spring.

Physical Education and Hygiene for Women

Gymnasium

Assistant Professor Grobe, Director; Instructor, Aid: Acting Instructor, Anderson; Lecturer, Irwin; Associate, Bloom; Assistant, Fosburgh

There are two kinds of classes in this department.

a—Those required for graduation. All women, during the freshman year of college attendance are required to participate two hours a week in some form of healthful exercise; the sophomore year may be taken in the sophomore, junior or senior year. The kind of exercise is determined by the medical and physical examination, and the amount of physical education the student has had in accredited high schools. The course in Personal Hygiene is required of freshmen; the course in Nutrition and Food is required of sophomores. Ten credits, six in healthful and recreational exercise, two in Hygiene and two in Nutrition and Food, are required for graduation.

1. The policy of allowing the sophomore healthful exercise to be taken during the sophomore, junior or senior year, at the election of students, is a temporary one, adopted by the University on account of the congested conditions in the University gymnasium.

2. Women who do not take physical education during the sophomore year, will obtain written notices of deferrment from the head of the department and file these in the registrar’s office.

b— Those leading to a major in physical education in the College of Science, or in the School of Education.

Teachers well trained in all phases of physical education are in demand, the most frequent calls being for school supervisors and recreation leaders. Students interested in courses in recreation and community leadership should see announcement for School of Education.

Intramural Athletics.—Intramural contests, under the supervision and control of the department, are conducted in the following sports: baseball,
hockey, tennis, basketball, archery, field events, volleyball and golf. The Women's Athletic Association co-operates with the department in the conduct of these activities. All students are urged to come out for at least one sport.

**Uniforms.**—A uniform, consisting of serge tunic, white blouse and black gymnasium shoes is required of all students, and may be purchased at the University Book Store. The cost is $12. No part of the uniform should be purchased before entering college.

**Courses.**—Courses 1-2-3 and 7-8-9 are open to freshmen who have had less than two years of physical education. Hygiene is required of all freshmen. Courses 10-11-12 are open to freshmen who have had two years or more of physical education. Courses 51 to 99 are open to sophomores who have had three quarters of freshman work. Courses 54-55-56, Food and Nutrition, is required of all sophomores. Courses 100 to 200 are open to all students who have the prerequisites; these courses carry academic credit.

1-2-3. **Healthful Activities.**—A general course, includes gymnastics, dancing, athletics. For students who have had less than two years in high school, two hours practice a week. One credit a quarter; autumn, winter, spring.

Gross, Anderson, Forchemer.

4-5-6. **Hygiene.**—One hour of lecture. Two-thirds credit a quarter; autumn, winter, spring.

7-8-9. **Corrective Gymnastics.**—Two hours of practice. One credit a quarter; autumn, winter, spring.

Bloom

10-11-12. **Healthful Activities.**—Gymnastics, dancing, and athletics. Open to freshmen who have had at least two years' physical education in high school. Autumn, winter, spring.

Aid, Anderson.

13-14-15. **Limited Healthful Activities.**—Light gymnastics, the less strenuous games and athletic activities, the lightest forms of dancing. Open, upon the recommendation of the examining physician, to students for whom the regular classes are too strenuous. Two hours a week. One credit a quarter; autumn, winter, spring.

Forchemer.

54-55-56. **Food and Nutrition.**—Food as related to health. Required of all second year women. One lecture a week. Two-thirds of a credit; autumn, winter, spring.

57-58-59. **Corrective Gymnastics.**—Two hours of practice. One credit a quarter; autumn, winter, spring.

Bloom

61-62-63. **Dancing.**—Two hours of practice. One credit a quarter; autumn, winter, spring.

Aid, Forchemer

64. **Hockey.**—Two hours of practice. One credit; autumn.

Forchemer, Aid.

65. **Basketball.**—Two hours of practice. One credit; winter.

Anderson.

67. **Elementary Tennis.**—Two hours of practice. One credit; autumn, spring.

Anderson.

69. **Advanced Tennis.**—Prerequisite, Phys. Educ. 67. Two hours practice. One credit; autumn, spring.

Anderson.

70. **Rifle Shooting.**—Two hours of practice. One credit a quarter; autumn, winter, spring.

Frazer

75. **Archery.**—Two hours practice. One credit; spring.

Aid.

81. **Baseball.**—Two hours practice. One credit; spring.

Anderson.
Limited Healthful Activities.—A continuation of Phys. Educ. 13-14-15. For students for whom regular work is too strenuous. Two hours practice. One credit; autumn, winter, spring. Forchemer.


101-102-103. Methods of Gymnastics.—Drill in gymnastics. Gymnastic terminology and survey and classification of gymnastic material. Natural gymnastics. Principles and technique of teaching. Prerequisites, or accompanying courses, Anat. 101-102 and Physiology 54-55. Two hours lecture and two hours practice a week. Three credits a quarter; autumn, winter, spring. Aid.

104-105-106. Methods of Folk Dancing.—Dances of the nations arranged for teaching in schools. Technique, methods of teaching, relation of music to dancing; costuming, school festivals, etc. Prerequisite, 1 year of dancing or Phys. Educ. 111-112-113. One hour lecture and two hours practical work a week. Two credits a quarter; autumn, winter, spring. Gross.

*109. History of Physical Education.


131-132-133. Theory and Practice in Corrective Gymnastics.—Study of deviations from the normal, remedial gymnastics and application of exercises for correction, kinesiology. Two hour lectures and four hours practice. Prerequisites, Anat. 101-102 and Physiology 54-55. Four credits a quarter; autumn, winter, spring. Bloom.

152. Administration of Physical Education.—Study of curricula for grades and high schools; school administration. Value of various types of activities. Prerequisite, Phys. Educ. 101-102-103, and 104-105-106. Two credits a quarter; winter. Gross.

153. Methods in Health Instruction.—Material and methods in teaching hygiene in the grades. Two hours a week. Two credits; spring. Gross.


161. Normal Diagnosis.—Diagnosis of the normal and deviations from the normal. Prerequisite, Anat. 101-102 and Physiography 54-55. Two credits; spring. Irwin.

167. Hockey Coaching.—Methods of coaching hockey. Prerequisites, Psych. 1, and knowledge of and participation in hockey. One hour lecture and two hours practice. Two credits; autumn. Forchemer.

*Not offered in 1922-1923.
169. Tennis and Archery Coaching.—Prerequisite, Psych. 1. One hour lecture, two hours practice. Two credits; spring. Anderson, Aid.

170-171-172. Advanced Athletic Coaching.—Coaching in basketball, baseball. Students will take charge of classes in sports. Prerequisite, Psych. 1, Educ. 101 and knowledge of game. One hour lecture and two hours of practice. Two credits; autumn, winter, spring. Anderson.


Note:—For course in Anthropometry and Biometrics, see department of sociology, Sec. 163.

For teachers’ course in physical education, see department of education, Educ. 160-R.

180. Camp Craft—Phys. 1-2. General Physics.—Courses 1-2 will satisfy the physical science requirement in the colleges of Liberal Arts and Science. Prerequisite, high school physics or 47, 48, 49. Lab. fee, $2.50. Five credits a quarter; autumn, winter. Osborn.

3. General Electricity.—Required of physics majors; of mathematics majors taking physics as a minor, and of all pre-medical students. Prerequisite, Phys. 1-2. Lab. fee, $2.50. Five credits; spring. Osborn.

47-48-49. High School Physics.—For students without any physics, these courses will satisfy the physical science requirement in colleges of Liberal Arts and Science and the entrance requirement in other colleges. Lab. fee, $2.50. Five credits a quarter; autumn, winter, spring. Eller.

50-51. Sound and Music.—For fine arts students only. Lab. fee, $2.50. Five credits a quarter; winter, spring. Anderson.

54. Photography for Amateurs.—Open to students who have had elementary physics or chemistry. Lab. fee, $5.00. Three credits; spring. Higgins.

89-90. Physics of the Home.—For home economics students. Lab. fee, $2.50. Five credits a quarter; autumn, winter. Osborn.

97. Physics for Engineers.—Mechanics. Prerequisites high school physics or 47-48-49, and fifteen hours of mathematics. Lab. fee, $2.50. Five credits; autumn, winter or spring. Brakel.

98. Physics for Engineers.—Electricity. Prerequisite, Phys. 97. Lab. fee, $2.50. Five credits; autumn, winter or spring. Brakel, Anderson, Utterbach.

101. Modern Physics Theories.—Prerequisite, Phys. 3. Five credits; autumn.

*102. Mechanics.

103. Heat.—Prerequisite, Physics 2. Lab. fee, $2.50. Five credits; winter.

105. Electricity.—Prerequisites, Physics 3 and ten hours of mathematics. Five credits; winter.

113. Acoustics and Illumination.—A course for students in architecture. Prerequisite, Physics 2. Lab. fee, $2.50. Four credits; spring.

114. Electrical Measurements.—A course for students in engineering. Prerequisite, courses 97, 98, 99. Lab. fee, $2.50. Three credits; autumn or spring.

126. Physics of AC and DC Circuits.—Prerequisite, Phys. 105. Lab. fee, $2.50. Five credits; spring.

160. Light.—Prerequisite, Physics 2 and ten hours of mathematics. Lab. fee, $2.50. Five credits; spring.

169. Special Problems.—Students admitted after consultation with instructors. Credit arranged; autumn, winter, spring.

170. Spectroscopy.—Prerequisite, Phys. 2 and ten hours of chemistry or astronomy. Lab. fee, $2.50. Three credits; spring or autumn.

*175. High Temperature Measurements.

180. Vibratory Motion and Sound.—Prerequisite Phys. 102 and calculus. Lab. fee, $2.50. Five credits; winter.

GRADUATE COURSES

201, 202. Dynamics.—Three credits; autumn. Two credits; winter.

203, 204. Theoretical Electricity and Magnetism.—Two credits; autumn. Three credits; winter.

206. Advanced Optics.—Three credits; spring.

209. Thermo-dynamics and Kinetic Theory.—Two credits; spring.

210. Seminar.—Credits arranged; autumn, winter, spring.

212. Investigation.—Credits arranged; autumn, winter, spring.

POLITICAL SCIENCE

Philosophy Hall

Professor J. Allen Smith; Instructor Laube

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 part of a liberal education, while others lead to a special study and inves-

*Not offered in 1922-1923.
tigation 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.

1. **Elements of Government.**—Introductory course in which special attention is given to the citizen's part in government. Syllabus fee, $1. Five credits; autumn, winter or spring. Smith

**50. Comparative Government.**—The constitutional organization of the principle governments of Europe; with emphasis on political parties and current questions. Prerequisite, Pol. Sci. 1. Five credits; winter. Laube

**52. Political Parties.**—Organization and methods of modern political parties; growth and theory of the party system. Prerequisite, Pol. Sci. 1. Three credits; spring. Laube

60. **Public Finance and Taxation.**—Prerequisite, Pol. Sci. 1 and Econ. T. Five credits; autumn. Laube

61. **Problems in Taxation.**—With special reference to the state of Washington. Prerequisite, Pol. Sci. 60. Three credits; winter. Laube

62. **Municipal Finance.**—Prerequisite, Pol. Sci. 60. Three credits; spring. Laube

100. **Municipal Government.**—Municipal organization and administration in the United States and Europe with some consideration of functions and problems. Prerequisite, Pol. Sci. 1. Five credits; autumn. Laube

102. **Municipal Problems.**—Problems of city government, with special attention to municipal utilities. Prerequisite, Pol. Sci. 1. Three credits; winter. P. Richardson — fall

111. **International Politics.**—Prerequisite, Pol. Sci. 1. Three credits; spring. Laube

120. **Governmental Functions.**—A study of regulation with reference to individual liberty; the individualistic and the socialistic theory of governmental functions; influence of political democracy on state interference. Open to upper division students who have had eight hours in political science, and to graduates. Three credits; autumn. Smith

130. **American Government.**—A general study of the American system of national government. Prerequisite, Pol. Sci. 1. Three credits; winter. Smith

131. **State Government.**—A general study of the American system of state government. Prerequisite, Pol. Sci. 1. Three credits; spring. Smith

130, 151, 152. **Reading Course.**—Discussions based on selected readings in political theory. Prerequisite, junior standing and eight credits in political science. Two credits a quarter; autumn, winter and spring. Smith

181, 182, 183. **Research in Public Finance.**—Prerequisite, Pol. Sci. 60. Two credits a quarter; autumn, winter and spring. Time to be arranged. Laube

201, 202, 203. **Seminar in Political Theory.**—Topic for 1922-1923: Political Decisions of the United States Supreme Court. Two to five credits. For graduates only. Autumn, winter and spring. Smith

**Note:** For the teachers' course in political science see department of education.
Students in the College of Liberal Arts, as well as the students in the College of Science, may major in psychology.

The Liberal Arts requirements are five credits in psychology.

For psychology as prerequisite to education; see announcement of department of education.

Majors in psychology may count five hours in Phil. 1, or in 101-102-103 toward satisfying their major requirement.

1. General Psychology.—A survey of the science as a whole. No prerequisites. Three lectures, one discussion section, and one 2-hour laboratory a week. Five credits; course repeated every quarter. Wilson, Smith, Guthrie

101. Physiological Psychology.—Man's behavior viewed as a result of his neurological mechanism. Students who so desire will be offered an opportunity for individual work in dissection and microscopic study. Prerequisite, Psych. 1. Three credits; winter. Guthrie

106. Experimental Psychology.—Students 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. Prerequisite Psych. 1. Three credits; spring. Guthrie

109. Mental Tests.—Training in applying tests for intelligence and for mental analysis. The principles of experimental procedure, methods of measurement, the preparation of tests and statistical treatment of results. The course is essential to work in clinical psychology. Prerequisite, ten credits in psychology. Three credits; spring. Wilson

111. History of Psychology.—The origin and development of psychology, beginning with the primitive conceptions of mind, and including a comprehensive view of the sources of scientific psychology. Prerequisite, Psych. 1. Two credits; autumn. Guthrie

112. Modern Psychological Theory.—A criticism of psychological theories in the light of recent experimental findings. Prerequisite, Psych. 1. Three credits; spring. Guthrie

114. Current Psychological Literature.—This course offers each student the opportunity of reading and discussion in the direction of his particular interests, and at the same time makes him familiar with a wide range of subjects treated in recent journals and with the new developments in psychology. Prerequisite, Psych. 1. Two credits; winter. Guthrie

116. Animal Behavior.—The mind of animals as shown by their behavior under natural conditions and in the laboratory. Prerequisite, Psych. 1. Three credits; autumn. Wilson

118. Folk Psychology.—A psychological study of social human nature, language, custom, public opinion, morals, war, family, caste, nationalism, religion. Prerequisite, Psych. 1. Two credits; autumn. Guthrie
121. *Applied Psychology.*—Psychology as applied to personal efficiency, vocational guidance and the measurements of vocational fitness, scientific management, the psychology of advertising, legal testimony and the mental states affecting its reliability. The significance of sex and individual differences in practical life. Prerequisite, Psych. 1. Five credits; winter. Wilson

124. *Psychology of Learning.*—The principles of learning and the transfer of training. Prerequisite, ten credits in psychology. Two credits; spring. Smith

126. *Abnormal Psychology.*—The explanation of unusual behavior. Prerequisite, ten credits in psychology. Five credits; winter. Guthrie

131. *Child Psychology.*—A study of mental development from infancy to adult age with the purpose of giving the student a scientific understanding of childhood. Prerequisite, Psych. 1. Three credits; autumn. Wilson

132. *Psychology of Exceptional Children.*—The nature and cause of mental defects and peculiarities of children with special reference to methods of diagnosis and to physical pathology. Prerequisite, Psych. 1. Three credits; spring. Smith

151, 152, 153, 154. *Undergraduate Research.*—Prerequisites, course 1 and 106. Each quarter. Smith, Guthrie, Wilson

**GRADUATE COURSES**

Before a student registers for graduate courses his topic of research must be approved by the department.

201, 202, 203, 204. *Graduate Research.* Smith, Guthrie, Wilson

*Seminar.*—Open to students doing research in the department. Weekly meetings on Monday evening.

**PUBLIC SPEAKING**

*Denny Hall*

*(See Dramatic Art)*

**ROMANIC LANGUAGES AND LITERATURE**

*Denny Hall*

PROFESSORS FREEM, OBER, UMPIER; ASSOCIATE PROFESSORS PATER, GOGGIO; ASSISTANT PROFESSORS HELMINGEN, DUVORS; INSTRUCTORS WHITFIELD, DE SOLENOIT; ASSOCIATES HAMILTON, J. MERCER; TEACHING FELLOWS, FORSTER, JONES, G. MERCER.

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 this department.

Students may not begin French 1 and Spanish 1, (nor Italian), during the same quarter, and it is better to have three quarters of one Romanic language before beginning another. If the entrance requirement in foreign language has not been fulfilled, no credits will be given for courses 1, 2, 3, 4, and 7 in any of the Romanic languages. Freshmen and sophomores may enter any advanced course (100 to 200) for which they have the prerequisites.

1. **FRENCH**

Requirements of the department.—Courses 41, 101, 102, 103, 158, 159, Ed160-T, and at least nine credits in literature are required of majors and those who wish to be recommended to teach.
1-2-3. Elementary.—As much as possible French will be used in the class room. Each of the courses 1, 2, 3, is repeated each quarter. No credits will be given for French 1 until 2 has been completed. Five credits a quarter; autumn, winter, spring.

4, 5, 6. Reading of Modern Texts.—Each of the courses 4, 5, 6, is repeated each quarter. French 4 may be combined with 7, making a five-hour course. The same is true of 5 and 8, 6 and 9. Prerequisite to French 4 is 3, or equivalent. Three credits a quarter; autumn, winter, spring.

7, 8, 9. Grammar and Composition.—These courses must be taken by those who intend to major in French, unless they have already done the equivalent in high school. French 7 may be combined with 4. The same is true of 8 and 5, 9 and 6. Prerequisite to French 7 is 3, or equivalent. Two credits a quarter; autumn, winter, spring.

41. Phonetics.—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. Prerequisite, French 3. Three credits; repeated each quarter.

71, 72, 73 or 111, 112, 113. Scientific French.—For students in science courses; reading in their special lines will be assigned by the head of their department, but the examinations will be given by this department. Credits according to work done.

101, 102, 103. Composition and Conversation.—With each of these courses is offered (at the same hour, but not on the same days) a course in advanced reading under the same instructor. See French 104, 105, 106. Prerequisites, French 6 and 9. Three credits a quarter; autumn, winter, spring.

104, 105, 106. Advanced Reading.—These courses are planned so that they may be taken with 101, 102, 103. Courses 101 and 104, 102 and 105, 103 and 106 may be taken together as five hour courses. The instructor will give occasional talks in French, upon the authors read, the interesting literary, social and other topics of their day, so as to prepare the student to enter courses given by lectures in French. Prerequisite, French 6. Two credits a quarter; autumn, winter, spring.

107, 108. Themes.—Writing of original compositions upon assigned topics. Prerequisite, French 103. Two credits a quarter; winter, spring.

115, 116, 117. Survey of French Literature.—Lectures in English, and collateral reading of English translations. Those who have studied French sufficiently will be assigned French texts to read. No prerequisites. Three credits a quarter; autumn, winter, spring.

121. The French Novel.—Lectures in French on the history of the novel from its beginning. Assigned reading and reports. Prerequisite, French 101 or equivalent. Five credits; autumn.

*124, 125. The Short Story.

131, 132. Lyric Poetry.—Study of the best lyrics since the fifteenth century with especial emphasis upon the nineteenth century. Rules of versification. Prerequisite, French 104. Three credits a quarter; winter, spring.
141, 142. The French Drama.—Lectures in French on the history of the French drama from its beginning. Assigned reading and reports. Prerequisite, course 101 or equivalent. Five credits a quarter; winter, spring. Patzer.

151, 152, 153. History of the French Literature of the Nineteenth Century.—Lectures in French, and assignments of reading to be done outside of class. Intended to give an opportunity to hear French spoken connectedly, though slowly. Students may enter at the beginning of any quarter. Prerequisite, French 6 and 9, or equivalent. Two credits a quarter; autumn, winter, spring. De Vries.

158, 159. Advanced Syntax.—A study of French syntax from the teacher's standpoint. These courses are prerequisite to the teachers' course. Prerequisite, French 103. Two credits a quarter; autumn, winter.


GRADUATE COURSES

201, 202, 203. Middle and Sixteenth Century.—The masterpieces of the fourteenth, fifteenth and sixteenth centuries will be read, and their influence upon later French literature studied. Open to graduates and seniors who have studied French at least four years. Two credits a quarter; autumn, winter, spring. Frein.

210, 211, 212. French Criticism.—Exposition of the several theories by which French critics have tested literature. Prerequisite, a good knowledge of French or English literature. Course given in English. Two credits a quarter; autumn, winter, spring. De Vries.

221, 222, 223. Old French Readings.—One of the most helpful courses for teachers of French. Open to graduates and seniors who have studied French at least four years. Three credits a quarter; autumn, winter, spring.

231, 232, 233. History of Old French Literature.—Lectures and assigned readings. Open only to those who can read Old French. Three credits a quarter; autumn, winter, spring. Frein.


Note—For teachers' course in French, see department of education; Educ. 160.T.

II. ITALIAN

Requirements of the department: No student will be allowed to begin Italian and French or Spanish the same year. Beginning with 1923-1924 enough courses will be offered for a major in Italian.

1-2-3. Elementary.—No credit will be given for Ital. 1 and 2 until course 3 has been completed. Five credits a quarter; autumn, winter, spring. Goggio.

107, 108, 109. Modern Italian Literature.—Prose and poetry of the eighteenth and nineteenth centuries. Lectures and collateral reading. Composition. Prerequisite, Ital. 3. Two to five credits a quarter; autumn, winter, spring. Goggio.

*121, 122, 123. The Italian Novel.

*Not offered in 1922-1923.
181, 182. Dante.—In this course the Divine Comedy of Dante will be read and studied with the purpose of bringing out the character of the imaginative and philosophical ideas contained in it, and the relations of these ideas to medieval thought. Knowledge of Italian not necessary. Two credits a quarter; autumn and winter. Goggio.

184. Renaissance Literature of Italy.—In this course stress will be laid upon the works of Petrarch and Boccaccio especially, and on those of Machiavelli, Castiglione, Ariosto, Cellini, and Tasso. Lectures in English and collateral reading. Knowledge of Italian not necessary. Two credits; spring. Goggio.

GRADUATE COURSE

201. Research in Italian Literature.—For graduates only. The number of credits will be determined by the amount of work done. Goggio.

III SPANISH

Requirements of the department: Span. 159, 101, 102, 103, Educ. 160. u, and at least 9 credits of literature are required of majors and of all who wish to be recommended as teachers. Freshmen and sophomores may enter any course for which they have the prerequisites.

1-3. Elementary.—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. Five credits a quarter; autumn, winter, spring.

4, 5, 6. Reading of Modern Authors.—Reading of some of the best works of the nineteenth century. If desired, courses 4, 5, 6 may be combined with 7, 8, 9 making a five-hour course each quarter. Prerequisite to 4 is 3, or equivalent. Three credits a quarter; autumn, winter, spring.

7, 8, 9. Grammar, Composition, Conversation.—These courses may be combined with courses 4, 5, 6, making a five-hour course. Prerequisite to Span. 7 is 3. Course 7 is prerequisite to 8. Two credits a quarter; autumn, winter, spring.

101, 102, 103. Advanced Composition.—Prerequisite, Span. 9. Three credits a quarter; autumn, winter, spring. Goggio.

112. Commercial Spanish. Commercial terms and business correspondence. Prerequisite, Span. 9, five credits; spring. Solenni.

115. Survey of Spanish Literature.—Selected texts, collateral reading, lectures. Prerequisite, Span. 6. Five credits; spring. Umphrey.

*121, 122, 123. The Novel.

*131, 132. Lyrics and Ballads.

141, 142, 143. Drama.—A systematic study of the drama in Spain, from its beginnings. The autumn quarter covers the early period and the sixteenth century; the winter quarter the Golden Age; the spring quarter the nineteenth century and early twentieth. Representative plays are read in class, others are assigned for outside reading and reports. Prerequisite, Span. 6. Three credits a quarter; autumn, winter, spring. Umphrey.

159. Advanced Syntax.—Problems in syntax studied from the teacher’s standpoint. Prerequisite, Span. 101, 102. Three credits; spring. Ober.

*Not offered in 1922-1923.
184, 185, 186. Spanish American Literature.—Representative writings of Spanish American authors. Collateral reading and reports. Lectures. Prerequisite, Span. 6. Two credits a quarter; autumn, winter, spring. Umphrey.

GRADUATE COURSES

221. Old Spanish Readings.—Reading and linguistic study of the Poema de mio Cid and other old Spanish texts. Five credits, autumn. Umphrey.

231. Epic Poetry.—Study of the epic material in Old Spanish literature and its later treatment in poetry and drama. Topics are assigned for special investigation and report. Five credits; winter. Umphrey.

241. Spanish Historical Grammar.—Five credits; spring. Umphrey.

Note:—For teachers' course in Spanish, see department of education, Educ. 160-U.

For courses in Comparative Philology, see the department of Scandinavian Languages and Literature.

SCANDINAVIAN LANGUAGES AND LITERATURE

Donny Hall

Professor Vickner

1-2-3. Elementary Swedish.—Grammar and reading; composition and conversation. Course, 1, 2, 3, are so arranged that they may be taken with 4, 5, 6 making a five-hour course. Three credits a quarter; autumn, winter, spring.

Vickner.

4-5-6. Swedish Reading Course for Beginners.—Reading of easy texts. Supplementary to courses 1, 2, 3, but may also be taken separately by students desiring a reading knowledge of Swedish with a minimum of grammatical study. No previous knowledge of Swedish necessary. Especially adapted to meet the needs of students in the Colleges of Science, Education, Business Administration, and Library School. Two credits a quarter; autumn, winter, spring.

Vickner.

10-11-12. Elementary Norwegian-Danish.—Grammar and reading; composition and conversation. Courses 10, 11, 12, are so arranged that they may be taken with 13, 14, 15, making a five-hour course. Three credits a quarter; autumn, winter, spring.

Vickner.

13-14-15. Norwegian-Danish Reading Course for Beginners.—Reading of easy texts. These courses are supplementary to 10, 11, 12, but may also be taken separately by students desiring a reading knowledge of Norwegian-Danish with a minimum of grammatical study. No previous knowledge of Norwegian-Danish necessary. Especially adapted to meet the needs of students in the Colleges of Science, Education, Business Administration and Library School. Two credits a quarter; autumn, winter, spring.

Vickner.

20-21-22. Norwegian-Danish Literature.—Representative authors are read in connection with a survey of the Norwegian-Danish literature. Prerequisite, ability to read easy Norwegian-Danish. May be entered at the beginning of any quarter. Two credits a quarter; autumn, winter, spring.

Vickner.

22-24-25. Swedish Literature.—Representative authors are read in connection with a survey of the Swedish literature. Prerequisite, ability to read easy Swedish. May be entered at the beginning of any quarter. Two credits a quarter; autumn, winter, spring.

Vickner.

40, 41, 42. Great Scandinavian Writers in English Translation.—The reading and discussion of significant works of recent Scandinavian litera-
ture; papers; lectures on the social, political and cultural life of Scandinavia. May be entered at the beginning of any quarter. Five credits a quarter; autumn, winter, spring.

103, 104, 105. Recent Swedish Writers.—Representative writers of the nineteenth and twentieth centuries are read, including Strindberg, Fröding, Selma Lagerlöf. Study of cultural movements and social problems of modern Sweden. May be entered at the beginning of any quarter. Two credits a quarter; autumn, winter, spring. Vickner.

106, 107, 108. Recent Norwegian-Danish Writers.—Representative writers of the nineteenth and twentieth centuries are read, including Ibsen, Bjørnson, Kielland, Jacobsen, Drachman. Study of cultural movements and social problems of modern Norway and Denmark. May be entered at the beginning of winter or spring quarter. Two credits a quarter; autumn, winter, spring.

109, 110, 111. Study of Modern Scandinavian Authors in English Translation.—A study of Ibsen, Bjørnson, Strindberg and Selma Lagerlöf the main feature of the course. A brief survey of Scandinavian culture and literature. Open to all. No knowledge of the Scandinavian languages necessary. May be entered at the beginning of winter or spring quarter. One credit a quarter; autumn, winter, spring. Vickner.

180, 181, 182. Recent Scandinavian Literature in English Translation.—The principal writers of recent Scandinavian literature will be read with special attention to literary and social movements and to the interrelation of English and Scandinavian literature. Lectures, reports, and discussion. For advanced students. May be entered at the beginning of any quarter. Two credits a quarter; autumn, winter, spring. Vickner.

*201-202. Old Norse, Scandinavian and Comparative Philology.

*203. History of the Swedish Language.


COMPARATIVE PHILOLOGY

190-191. Introduction to the Science of Language.—A study of the general principles of linguistic development with special reference to English. Lectures and discussions. Prerequisite, some knowledge of one of the classical languages and of one modern foreign language or Old English. Two credits a quarter; autumn, winter. Vickner.

192. Life of Words.—Etymology and semasiology; growth of vocabulary; word values. Lectures, discussions and exercises. Prerequisites; same as for courses 190-191. This course is a continuation of 190-191, but may be taken separately. Two credits a quarter; spring. Vickner.

SOCILOGY

Philosophy Hall

Professor Woolston; Associate Professor McKenize; Assistant Professor Spier; Associate, Mcclain

Sociology treats of the development, organization and functions of human groups. Its general purpose is to explain the relations of institutions;

*Not offered in 1922-1923.
to stimulate a critical and constructive attitude toward programs of reform and to furnish a sound basis of information for intelligent citizenship. Its practical outcome lies in preparation for advanced study, field investigation, teaching and administration in such lines as community and industrial welfare, law, diplomacy, journalism, public health and institutional management; and also in supplementing the specialized training along such lines.

Sociology is related to many problems treated in biology, psychology, history, economics, politics, education, home economics, literature and philosophy. Students choosing sociology as a major or minor subject are urged to consult members of the department staff regarding their elections. Work in other departments may be essential for success in this field, and may, when approved, be credited toward advanced requirements.

The following basic and supplementary courses are particularly recommended:—Math. 13, Zool. 16, 17, Psych. 109, 118, Home Econ. 109, 126, Econ. 61, 161, 162, 166, Pol. Sci. 100, Hist. 131, 149, English 73, 74, 75, 136, 137, 138, 141, 142, 164, 165, 166, Phil. 2.

Students are advised to postpone work in sociology until lower division requirements in biology, psychology, economics, and political science are completed. Sociology 1 or its equivalent is prerequisite throughout, and satisfies minimum requirements in this subject. The following are fundamental for advanced work and should be taken by major students before electing special lines: Courses 29, 52, 55, 56, 60.

Further work is arranged along these lines:

1. Anthropology deals with the history of civilizations and its applications to race problems. Courses 51 and 52 present a general foundation: course 101 is a systematic upper division introduction. Suggested elections: course 92 for history students, 141 for English, 143 for fine arts, and 163 for biological sciences.

2. Social Problems and Methods of Reconstruction offers prevocational instruction leading to three general lines of social work, for which the following courses are especially recommended:
   A. Case Work: courses 57, 58, 155, 171-172-173.

3. Social Theory and Methods of Investigation offers preliminary training and background for vocational use as follows:
   A. Teachers of Social Science: courses 150, 170, 161, 181.
   B. Social Investigation: courses 29, 60, 130, 163.

For a major in sociology 36 credits are required. Upper division courses should not be elected before completing such elementary work as instructors in special fields may suggest. Courses numbered over 200 are primarily for graduates. Qualified seniors may be admitted by permission of the instructor in charge. Advanced students are required to secure the approval of their program by the head of this department before completing their registration. Graduate students must complete undergraduate requirements before being accepted as candidates for the master's or doctor's degree in sociology.

COURSES

1. Introductory Sociology.—A general survey of the field of social relations, with some discussions of the forces at work, the practical problems presented and the methods of solution suggested. Required of all students in the department. Five credits; autumn, winter, spring.
I. ANTHROPOLOGY

51. **Growth of Culture.**—The origin and development of social institutions, industrial activities, and arts. Basic to courses in anthropology. Five credits; autumn, winter. Spier.

52. **Primitive Social Life.**—The social institutions and folkways of primitive peoples. Five credits: winter, spring. Spier.

92. **Peoples of Europe and Africa.**—Racial types and languages of the Old World; origins of historic cultures; the background of American immigrants. Suggested for history students. Three credits; winter. Spier.

93. **Peoples of Asia and Oceania.**

101. **Basis of Civilization.**—Factors that determine the growth of civilizations, as illustrated by the North American Indians. Five credits; autumn. Spier.

141. **Folk-tales.**—A study of unwritten literature; the spread of stories and cycles; historic and Freudian theories of origin. Suggested for English students. Three credits; spring. Spier.

143. **Origins of Art.**—Factors in the development of art styles, from the standpoint of beginnings. Suggested for fine arts students. Three credits; autumn. Spier.

163. **Anthropometry and Biometrics.**—The study of the growth of children; racial and social influences; application of statistical methods to biological phenomena. Methods of physical examination; standards of efficiency in measurements. Two credits; spring. Spier.

190. **Undergraduate Research.**—Credits and hours to be arranged. Spier.

GRADUATE COURSES

204, 205, 206. **Anthropological Methods and Theories.**—Analysis of culture; historical and psychological methods; theories of culture growth. Open to qualified seniors. Each quarter may be taken separately. Three credits a quarter; autumn, winter, spring. Spier.

II. SOCIAL PROBLEMS AND SOCIAL RECONSTRUCTION

55. **Community Organization.**—A study of the principles of community organization, forms of community action, essentials of leadership. Five credits; autumn. McKenzie.

56. **The Family.**—The origin of marriage, the family and its status, the effects of the industrial revolution, and the functions of the modern family. Three credits; autumn. Winter. Spier. McCabe.


58. **Neighborhood Resources.**—A study of national, state and local organizations which deal with practical social problems; e.g., The Children's Bureau, American Red Cross, National Federation of Settlements, Community Service. Three credits; spring. McCabe.

*61. **The Church as a Social Agency.**

*Not offered in 1922-1923
62. **Public Recreation.**—Organization of indoor and outdoor amusement; public morality and the use of leisure. Three credits; winter. McKenzie.

63. **Municipal Sociology.**—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. Five credits; spring. McKenzie.

*103. **Problems of Maladjustment.**

*104. **American Social Conditions.**

*105. **Industrial Welfare.**

155. **Poverty and Philanthropy.**—Care of dependents and prevention of destitution; discussion of causes of poverty and methods of relief. Prerequisite, Econ. 1 Five credits; autumn. McKenzie.

156. **Criminology.**—A study of the social, economic, and hereditary causes of crime; various theories and plans of prison reform; the relations of prisons and criminals to society. Five credits; winter. McKenzie.

157. **Social Pathology.**—A study of the social factors involved and the methods of dealing with physical defectiveness, feeble-mindedness, insanity, narcotics, alcoholism, prostitution, vagrancy. Five credits; spring. McKenzie.

160. **Programs of Social Reform.**—A critical examination of individualism, conservation, philanthropy, social justice, liberalism, unionism, the co-operative movement, the single tax, socialism and syndicalism. Three credits; autumn. Woolston.

171-172-173. **Methods of Social Service.**—Field experience under supervision at local social work organizations. Eight hours field work, one hour conference. Permission of instructor necessary for registration. Prerequisites, Soc. 56, 57, 155. Five credits; autumn, winter, spring. McCabe. 

**211-212-213. Case Work Principles and Practice.**—A training course for social work. Eight hours field work, one hour conference. Permission of instructor necessary for registration. Prerequisites, Soc. 171-172-173. Five credits a quarter; additional credit by special arrangement. Autumn, winter, spring. McCabe.

**III. SOCIAL THEORY AND METHODS OF INVESTIGATION**

29. **Social Statistics.**—Methods and sources for quantitative investigation. Prerequisite, Math. 13. Three credits; winter. Woolston.

60. **Group Behavior.**—The instinctive and reflective side of man, and his adjustments to civilization. Prerequisite, Psych. 1. Three credits; autumn. Woolston.

(130) **The Social Survey.**—Methods of planning, conducting, and presenting results of investigations of communities and institutions. Three credits; winter. Withdrawn. McKenzie.

150. **General Sociology.**—Advanced course in theory for seniors and graduates. Mature students may substitute this work for Soc. 1 upon personal approval by the instructor. Five credits; autumn. Woolston.

*Not offered in 1922-1923.*

162. *Social Ideals.*

170. *History of Social Theory.*—The principal contributions to sociological science, from the standpoint of their background. Five credits; winter. Woolston.

181. *Psychology of Nations.*—An examination of the bases and characteristic manifestations of national traits. Prerequisite, Soc. 60. Three credits; spring.

182. *The Urban Habit of Mind.*—A study of typical reactions shown by city-dwellers. Prerequisite, course 60. Three credits; winter. Woolston.

**GRADUATE COURSES**

207-208-209. *Community Research.*—Original investigation of special community problems. Emphasis will be placed upon methodology and the interpretation of data. Prerequisite, graduate standing or special permission. Two credits a quarter; autumn, winter, spring. McKenzie.

221-222-223. *Seminar.*—For graduate students who are candidates for higher degrees and for approved major students in the department, when recommended by an instructor in charge of their special work. The purpose is to train in methods of original research and investigation. Two credits; autumn, winter, spring.

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**ZOOLOGY**

*Science Hall*

*Professor Kincaid; Assistant Professors E. V. Smith, Gunthorp, Jameson*

1-2. *Elements of Zoology.*—A general review of zoological science, stressing the philosophic and economic aspects of the subject. Lab. fee, $2.50. Five credits a quarter; autumn, winter, repeated winter, spring. Kincaid, Gunthorp and assistants.

3-4. *Pre-Medical Zoology.*—For students entering upon a medical course. Lab. fee, $2.50. Five credits a quarter; autumn, winter. Jameson.

10-11. *Comparative Anatomy.*—The comparative structure of the vertebrate animals. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, $2.50. Five credits a quarter; autumn, winter. Jameson.

16. *Evolution.*—A series of lectures upon the more important biological problems related to the general theory of evolution. Two credits; autumn. Kincaid.


101. *Cytology.*—The anatomical, physical and chemical properties of the animal cell with special reference to the problems of development and inheritance. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, $2.50. Five credits; autumn. Gunthorp.

*Not offered in 1922-1923.*
56. Entomology.—The structure, classification and economic relations of insects. Prerequisite, Zool. 1-2 or its equivalent. Lab. deposit, $2.50. Five credits; spring. Kincaid.

105. General Embryology.—The comparative developmental history of animals, with emphasis on vertebrate forms. Prerequisite, Zool. 1-2 or 3-4. Lab. fee, $2.50. Five credits; spring. Jameson.


108. Aquatic Biology.—The classification and interrelationship of the organisms found in lakes and streams. Field work in the neighboring freshwater bodies. Prerequisite, Zool. 1-2. Lab. fee, $2.50. Five credits; spring. Kincaid.

155-156-157. Elementary Problems.—Students will be assigned minor problems which will be worked upon under the direction of one of the instructors in the department. Prerequisite, twenty hours in zoology or physiology. Lab. fee, $2.50. Three credits; autumn, winter, spring. Kincaid, Smith, Gunthorp, Jameson.

GRADUATE COURSE

201-202-203. Research.—Students capable of carrying on independent work will be assigned problems to be worked upon under the direction of one of the instructors. Prerequisite, twenty-five hours in zoology or physiology. Credit. Kincaid, Gunthorp, Jameson.

Notes:—For teachers' course in zoology, see department of education. Educ. 160-Z.

PHYSIOLOGY

7-7-7. Elementary Physiology.—A general survey of the structure and functions of the human body, with special emphasis on metabolism, and the nervous and vascular systems. Lab. fee, $2.50. Five credits; autumn, winter, spring. Smith.

54-55. Physiology.—A course adapted to meet the need of students expecting to teach the subject in high school. Required of students majoring in physical education; recommended for students in dietetics and in sanitary science. Lab. fee, $3. Five credits; autumn, winter. Smith.

115. Principles of General Physiology.—The application of the laws of physics and chemistry to physiological processes. Prerequisites, one year each, zoology, chemistry and physics. Lab. fee, $3. Five credits; spring. Smith.

151-152-153. Advanced Physiology.—Arranged for students in medicine and advanced students who wish to make a careful study of experimental methods. Prerequisites, one year each, zoology, chemistry and physics. Lab. deposit, $3. Five credits; autumn, winter, spring. Smith.

GRADUATE COURSE

204-205-206. Research.—Students capable of carrying on independent work will be assigned problems for investigation. Prerequisites, twenty-five hours of zoology or physiology. Credit to be arranged. Smith.
Facilities.—The summer quarter is an integral part of the university year and its courses coordinate with the other quarters. It thus offers special opportunities for teachers and others whose regular work is suspended during the summer months.

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, Fine Arts, Business Administration, the Graduate School, Schools of Education and Law, and in the Pre-medical Course. The Puget Sound Biological Station at Friday Harbor maintains a session of six weeks beginning June 19 and ending July 28. 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 give courses.

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 particular 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, 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 who wish to get in touch with the University before that time. High school pupils find this a very advantageous plan.
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 zoology 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.
Registration.—Registration for the summer quarter will take place on Tuesday, June 20. Students expecting to be in attendance during the last six weeks only may register on or before Friday, July 28. 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 the time, to become candidates for graduation will be assigned to the director of the summer quarter.

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 quarter should make application through the registrar on registration at the beginning of the session.

Fees.—The regular tuition fee of twenty dollars ($20) 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.

Masters' Degrees Through Summer Quarters.—At each succeeding summer quarter a larger number of graduate students are in attendance. Last summer more than a 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 30 weeks of residence in summer quarters as a fulfilment of the year of required residence, provided the student does work between the sessions under regulations prescribed by the graduate faculty and the department 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 the bachelor's degree. The correspondence work can be very advantageously planned as a continuation of the regular summer quarter. For detailed information concerning correspondence courses write to the Extension Service.

Education.—The summer quarter and the School 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 School of Education will accomplish much in summer quarters. The work of the summer quarter being especially arranged for teachers will make it possible to accomplish this.

Business Administration.—An interesting curriculum of business courses is offered in the summer quarter for students who contemplate going into business. These courses will be along lines of business organization, corporation, finance, employment management, and kindred subjects. Teachers of commercial subjects will also find subjects of special importance in preparation for their work.

For bulletin of the summer quarter address the Registrar, University of Washington. For other information address Frederick E. Bolton, Director of the Summer Quarter.
Station and Surroundings.—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 700. It is between Bellingham and Victoria, about 25 miles from the former and about 20 miles from the latter.

San Juan County consists of an archipelago of about 100 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 has been 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 100x20 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 the 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 road runs through the grounds to the village. The village contains about a dozen stores, and any ordinary purchases may be made there.

The University of Washington also owns 485 acres about one mile from the present site, and expects to move there when suitable buildings have been erected.

Building and Equipment.—The zoological laboratory was built in the spring of 1910. It is about 30x60 feet, two stories and attic. The building is just above high tide on a steep shore. Material 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 stock room. The attic is a general store-room 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, con-
tainers, and preservatives 'may' be secured at the stock room. It is the aim to have in the stock room things ordinarily called for. Unusual things cannot be supplied. Those wishing special apparatus should write the director. Usually the station hires a shrimp trawler for one month. Rowboats are on hand for general use.

Supply Departments.—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 zoological 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 investigation. Those who are looking forward to collecting material should first correspond with the station authorities. Scientists are urged to co-operate with the station in its endeavor to earn part of its running expense through its supply department.

Library.—The library contains about 800 volumes, of which about 190 are bound volumes of reprints. A limited number of books are shipped to the station every summer from the University.

Lectures.—General lectures by the station staff or by visitors are given as the occasion arises.

Registration.—Experience has shown that it is wise to register for one full course only. Six weeks is a very short time to give to any 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 one-half quarter-credits per week.

Expenses.—For one person for six weeks the cost is about as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station fee</td>
<td>$12.00</td>
</tr>
<tr>
<td>Laboratory fee</td>
<td>3.00</td>
</tr>
<tr>
<td>Tent, two in a tent</td>
<td>4.50</td>
</tr>
<tr>
<td>Board (estimate)</td>
<td>33.00</td>
</tr>
<tr>
<td>Books (estimate)</td>
<td>3.50</td>
</tr>
<tr>
<td>Incidentals (estimate)</td>
<td>4.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$60.00</td>
</tr>
</tbody>
</table>

The Station fee of $12 goes toward paying the running expenses of the station. For persons occupying research rooms the station fee is $50, instead of $12.

The tents are 10x12 feet, on board platforms with three-foot board wall, making the lowest part about five feet. They are rented during the season for $1.50 per week per tent, including bed springs, mattresses, lamp, broom, camp chairs, buckets, wash basins, and drinking cups. During the time before and after the session the rental is $1 a week. Stoves may be rented for $1.50 for the season. 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 merely self-supporting over a term of years.

Meals are served in the dining hall at six dollars a week. The service is merely self-supporting over a term of years, and as nearly co-operative as the conditions permit. The dining hall is about 75 feet above the 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.

For bulletin of the Puget Sound Biological Station, address the Registrar, University of Washington. For other information address T. C. Frye, Director of the Puget Sound Biological Station.
UNIVERSITY EXTENSION SERVICE

OFFICERS OF ADMINISTRATION AND INSTRUCTION

HIDAY SERRALLO, Ph.D. (Columbia), LL.D., (California) .... President of the University
JOHN THOMAS CONDON, LL.M., (Northwestern) ................. Dean of Faculties
EDWIN AUGUSTUS STAFT, A.M., (Harvard) .................. Director of the Extension Service

ADMINISTRATIVE BOARD

DIRECTOR STAFF, CHAIRMAN

DR. THOMAS CONDON, LL.D., (Northwestern) .............. Dean of Faculties

Director of the Extension Service

ADVISORY BOARD

THE FACULTY

The Extension faculty is composed of members of the general faculty who give extension courses and of the following instructors on the Extension staff:

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WILLIAM HENDERSON ... Lecturer in Foreign Trade
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OFFICE STAFF

MARY C. GRADY ... Office Manager
COVENTT B. BARTLETT .... Secretary in charge of Seattle City Office
EDNA HINDMANN, A.B., (Washington) ............ Secretary for Correspondence Study
HARRISOTH B. BRENT .. Stenographer

OFFICES

The general offices of the Extension Service are on the University campus, in a small building devoted exclusively to their use. It is the third building on the right from the Fortieth Street entrance.

A city office is maintained in the Henry Building, in the heart of the business district of Seattle.

THE EXTENSION SERVICE

The Extension Service of the University of Washington (known as the Extension Division until 1917) was organized in 1912, as an integral part of the University to promote and administer its work outside the campus. At the present time its field embraces university teaching by correspondence and in classes for those who cannot attend the University.

DIVISION OF INSTRUCTION

Extension teaching is primarily for adults and for those who cannot attend the University. Many of the subjects offered may be taken for credit toward a university degree, but this is a secondary object, the primary one being to make university instruction available to as many persons as possible who could not otherwise obtain it.

This teaching is carried on by correspondence, which is available to anyone, anywhere, at any time; and by classes conducted at different places.

Correspondence courses are offered in the departments of botany, classical languages and literature, (Greek, Latin), economics and business administration, education, English, geology, history, home economics, navigation, philosophy, political science, psychology, Romanic languages and literature (French, Italian, Spanish), sociology, and zoology.

Class work is offered in Seattle, and in other cities as far as practical, in many of these departments and in some others. Both lists are subject to change from time to time, as courses are added or withdrawn.

The greater number of the extension courses parallel the resident university work and may be taken by qualified persons for credit toward a university degree. Some are planned to meet vocational needs of those who have no university degree in view.
Announcements of the Extension Service are published in bulletins issued at intervals of one or two months.

In Seattle the Extension Service maintains a city office and downtown classrooms, where a program of classes in various subjects is annually carried on. This schedule varies somewhat from year to year but usually includes general economics, accounting (three full year courses), advertising, business correspondence, business law, employment management, foreign trade, water transportation, English, French, Italian, Spanish, subjects in home economics, philosophy and psychology.

Extension classes have been conducted in Aberdeen, Bellingham, Everett, Hoquiam, Olympia, Spokane, Tacoma, and Yakima. On account of time and distance it has not been possible to develop this work on the same basis of permanence and regularity as that in Seattle, but as much is done as possible and any real local demand is generally met.

Fees.—In accordance with the wishes of the Legislature of 1921 all university extension work must be as nearly as possible self-supporting. The fees hitherto charged have therefore had to be increased. They are still very moderate, being kept low enough to cover only the actual cost. The cost of courses varies according to their length from eight to twenty-four dollars.

GRADUATE MEDICAL LECTURESHIP

In 1916 the Extension Service, with the cooperation of the Washington State Medical Society and the King County Medical Society, instituted a Graduate Medical Lectureship. The King County Medical Society annually appoints a committee which works with the representatives of the Extension Service in planning the course. The lectures are held in the early summer, and occupy five days. They are open to graduate physicians and surgeons. A fee is charged and any surplus over the expenses of the year goes into a special fund to be used as a reserve fund for the maintenance of this lectureship, or for the extension of medical education. The lectureship has proved of great value to the physicians and surgeons of the Pacific Northwest, bringing to them each year some of the best thought of the medical education centres of the country.

The lecturers have been:
1916. Dr. Charles L. Mix, Chicago, Northwestern University.
1917. Dr. Martin H. Fischer, University of Cincinatti.
      Dr. Allen B. Kanavel, Chicago, Northwestern University.
1918. Omitted on account of the war.
1919. Dr. Charles Lyman Greene, St. Paul.
      Dr. Dean Lewis, Chicago.
      Dr. Barton Cooke Hirst, Philadelphia, University of Pennsylvania.
1921. Dr. Charles F. Hoover, Cleveland, Western Reserve University.
      Dr. Carl A. Hamann, Cleveland, Western Reserve University.
      Dr. Harris P. Mosher, Boston, Harvard University.
1922. Dr. John B. Deaver, Philadelphia, University of Pennsylvania.
      Dr. Hobart Amory Hare, Philadelphia, Jefferson Medical College.
      Dr. William McKim Marriott, St. Louis, Washington University.
      Dr. Joseph Colt Bloodgood, Baltimore, Johns Hopkins University.
      Dr. Walter Bradford Cannon, Boston, Harvard University.
      Dr. William Engelbach, St. Louis, St. Louis University.
All the official publications and general printing of the University are supervised by the editorial secretary. Publications include the following:

The University of Washington Publications in Geology.
The University of Washington Publications in Language and Literature.
The University of Washington Publications in Mathematics.
The University of Washington Publications in Political and Social Science.
The University of Washington Bulletin (Engineering Experiment Station Series).
Puget Sound Biological Station Publications.
The Washington Historical Quarterly.
The Washington Newspaper (Monthly for the press of the state).

The University of Washington Bulletin, General Series, including the bulletins of the various colleges and schools, General Catalogue, Summer Quarter Bulletin, and the University Directory are also compiled and edited in this office.

Besides the strictly technical, scientific and cultural publications, a weekly news service is sent to the press of the state. This service carries stories regarding the results of research in the various colleges and departments of the University. Often these stories offer helpful suggestions for various lines of industry and business, as well as material of interest in the homes. All specific requests for information regarding the University or the specialized work of any of its departments are referred to this office. It is the endeavor of this office at all times to interpret the many phases of University work and research to the state for the service and advantage of all, bringing this information to the people of the state as expeditiously as possible.

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SMITH, CHARLES W.


MATHEMATICS

BELL, ERIC TEMPLE

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MINING

DANEWAL, JOSEPH


WILSON, EWITT


MUSIC

DICKETT, FRANCES M.

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WOOD, CARL PAINE

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Counterpoint: Three Part Writing (II).—Ibid., October, 1921.

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GOYEN, HERBERT H.


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PHARMACY

LYNN, E. V.

BIBLIOGRAPHY

PHYSICS

AMHERST, SAMUEL HERBERT

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POLITICAL SCIENCE

LAURIE, FRANK J.

Why the Property Tax Fails.—National Real Estate Journal, September, 1921.

ROMANIC LANGUAGES

UMPHREY, GEORGE W.

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An Intellectual Breviary for the Youth of Spanish America.—Pacific Review, December, 1921.
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SOCIOLOGY

SPIES, LEVIN


STURGES, HERBERT A.


WOOLSTON, HOWARD B.

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ZOOLOGY

GUNTHORP, HORACE

Crain’s Collection of Kansas Myriapoda.—Canadian Entomologist, 33: 87-91. 1921.
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SMITH, H. VICTOR

The Taking of Immature Salmon in the Waters of the State of Washington During the 1920 Fishing Season.—State of Washington, Office of the State Fish Commissioner. 1921.

Report on the Little Redfish, Locally Known as the Silver Trout.—State of Washington, Office of the State Fish Commissioner. 1921.
DEGREES

DEGREES CONFERRED JUNE 20, 1921

BACHELOR DEGREES

COLLEGE OF LIBERAL ARTS

Bachelor of Arts

Anderson, Helen Dorothy (cum laude)
Arnason, Elinor Thralls Rund
Atkinson, Evelyn Ann
Attebury, Edgar Raymond
Baird, Elizabeth
Bardon, Norma Martha
Beals, Catherine Meriam
Birks, Margaret Elizabeth (cum laude)
Bouber, Gertrude
Bricker, William Albert Lee
Burlick, Don
Burnham, Helen Marie
Byrd, Mabel Jane
Campbell, Gertrude Cecilia
Cary, Robert Lincoln
Cheesley, Dorothy Helen (cum laude)
Claussen, Elva
Colman, Grace
Cohoes, Orlando Sumpter
Collins, William Chapin (cum laude)
Cooklin, Flora Agnes
Cook, Jessie Nixon
Culver, Leda Gertrude
Cutts, Laura Louise
Delerleln, Grace Margaret
Dickinson, Laura Cornelia
Downing, Joseph Mont
Dryden, Cecil Farnsworth (cum laude)
Emerson, Frances Bangius
Fargo, Marion Charlotte
Farsworth, Ruth
Faulk, Theodore Ephriam
Fialkum, Ruth (cum laude)
Fix, Lynwood Watson
Fleener, J. Blankenship
Frazier, Lewis Raymond (cum laude)
Garrod, Max Frank
Good, Josephine Dolores
Gowran, Dawn Vivian
Hall, Mabel Martha
Hamley, Gladys Jean
Harrington, Florence
Harvey, Helen
Heermann, Donald
Henderlito, Elmer Claude Victor
Hibbard, Myra
Hill, Cyril Dean
Ho, Pao Jn
Holland, Ruth (magna cum laude)
Hutchinson, William Harold
Johnson, Evelyn Alice
Johnson, Jane Gregg
Jones, Hazel Elizabeth (cum laude)
Jones, Marjorie
Jones, Zenith Watkins
Kenin, Harry Marvin

Kwock, Tak Wu
Lane, Frances Willard
Lange, Dayna
Leavitt, Marion Clare
Lilly, Andrie Stella
Lindley, Mrs. Alice
McCormick, Helen
McCredy, Harold
McHugh, Ruth
Madison, Viola
Marion, Helen Isabel
Marlowe, Myrtle
Marshall, Dorothy Edith
McLlh, Esther Marilu
Meneely, Alexander Howard
Mayer, Rita
Miller, Esther Jean
Mohn, Esther
Monteagle, Gwendolyn Anne
Nelson, Ellen
Nelson, Laura Elza
Nuttleton, Emily Online
Nisairious, Philip George
O'Connor, James Matthew
Ovemar, Marion Gray
Porsky, Tyne Christine (cum laude)
Ray, Doris
Rich, Estella May
Richardson, Ola Dunbar
Roberts, Sara
Robertson, Jean Muriel
Roys, Ruby (cum laude)
Ryerson, Eliza Clare
Shank, Katherine
Silvermaster, Nathan Gregory
Sloan, Besse Andrews
Smith, Chauncey Henry
Smith, George Minns, Jr.
Smith, Gladys Lucile (cum laude)
Speer, Howard Benshoff
Stead, Marlan Ellen
Stevenson, Christena Lillie
Summers, Doris Edith
Sullivan, Clara Agnes
Sullivan, Richard Francis
Thomson, Catherine
Thompson, Frances Clifton
Virtue, Jessie Hardy
Wagner, Florence Minerva
Waldo, (Mrs.) Josephine Mary (cum laude)
Werner, Winifred
Whitlock, Maryellen
Wilson, Harvey Erwin
Woo, May Gertrude
Yousell, Miriam

Notes: The persons whose names are followed by the superior figures 2, 3, received their degrees in the quarters of 1920-1921 ending in December and March, respectively; all others in June 1921.

For degrees conferred at the end of the summer quarter, August 30, 1921, see page 288.
### DEGREES

#### COLLEGE OF SCIENCE

**Bachelor of Science**

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson, August Reinhold</td>
<td>Linton, James Reginald (cum laude)</td>
</tr>
<tr>
<td>Anderson, Robert S.¹ (cum laude)</td>
<td>Linton, Robert Ritchie (cum laude)</td>
</tr>
<tr>
<td>Ayres, Katherine Mary²</td>
<td>McCarthy, Owen Bernard¹</td>
</tr>
<tr>
<td>Basset, Rudolph Alfred</td>
<td>McDonald, Alice Louise</td>
</tr>
<tr>
<td>Blumenfeld, Zipora</td>
<td>Mecklenburg, Don Andrews</td>
</tr>
<tr>
<td>Bouck, Gordon Maynard</td>
<td>Mahoney, Ethel Cecilia (cum laude)</td>
</tr>
<tr>
<td>Brockman, Fred William</td>
<td>Martin, Frances Lora</td>
</tr>
<tr>
<td>Byers, Katherine Ada³</td>
<td>Moran, Jean Mildred</td>
</tr>
<tr>
<td>Camp, Dorothy Foster</td>
<td>Mulher, Frances Adele</td>
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<tr>
<td>Carter, Mildred Wheeler</td>
<td>Nemerovsky, Lena Leah</td>
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<td>Dedley, Lila Adele</td>
<td>Preston, Louisa Byrne</td>
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<tr>
<td>Farley, Helen Marie</td>
<td>Ratliff, Thomas</td>
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<tr>
<td>Fulton, Helen Louise</td>
<td>Rupple, Paul Joseph</td>
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<tr>
<td>Frye, (Mrs.) Else Anthen</td>
<td>Sangree, John Brewster</td>
</tr>
<tr>
<td>Gilluly, James² (cum laude)</td>
<td>Shigaya, Paul S.</td>
</tr>
<tr>
<td>Griffiths, Lois Wilfred</td>
<td>Snow, Iola</td>
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<tr>
<td>Gunn, Elizabeth</td>
<td>Stanley, Maxine</td>
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<tr>
<td>Hardie, James Rogers</td>
<td>Sullivan, John Daniel</td>
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<td>Hartman, Ward</td>
<td>Turner, Lloyd Edwin</td>
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<td>Hugard, Luzerne Edison</td>
<td>Upton, Virgil Morgan</td>
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<tr>
<td>Jasperson, Agnes Grace</td>
<td>Watts, Ruth Mande</td>
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<tr>
<td>King, Dorothy</td>
<td>Way, Lois Edith (cum laude)</td>
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<tr>
<td>Landes, Kenneth Knight</td>
<td>Young, Dorothy</td>
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</tbody>
</table>

**Bachelor of Science in Home Economics**

<table>
<thead>
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<th>Name</th>
<th>Degree Classification</th>
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<tbody>
<tr>
<td>Allen, Genna Alcie</td>
<td>Metsker, Margaret Ream</td>
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<tr>
<td>Anderson, Evelyn Martha</td>
<td>Nelson, Beulah Mae</td>
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<td>Bassett, Charlotte Anne</td>
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<td>Cutter, Julia Louise</td>
<td>Olson, Lillian Eleanor</td>
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<td>Davis, Violet</td>
<td>Osterud, Nena Dorothea</td>
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<td>Dove, Eva May</td>
<td>Paige, Carol Margaret</td>
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<td>Fulton, Grace</td>
<td>Peterson, Gladys Loraine (cum laude)</td>
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<td>Helmich, Merle Lillian</td>
<td>Phelps, Grace Marie</td>
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<tr>
<td>James, Marjorie</td>
<td>Thomas, Gertrude Marion</td>
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<td>Jewett, Juliet Louise</td>
<td>Walker, Beatrice Marie</td>
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#### COLLEGE OF EDUCATION

**Bachelor of Education**

<table>
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<th>Name</th>
<th>Degree Classification</th>
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<tbody>
<tr>
<td>Alport, Ruth Jessie</td>
<td>Lamoreux, Harvey De Witt</td>
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<td>Bruce, Irene Frances</td>
<td>Magill, Marion Roberts</td>
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<td>Card, Mabel</td>
<td>Morimoto, Takaji</td>
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<td>Connell, Archie Mitchell</td>
<td>Nell, Vera</td>
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<td>Crump, John Kenneth</td>
<td>Orrell, Jessie</td>
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<td>Cummango, Ardyce Helen (cum laude)</td>
<td>Peterson, May Anita</td>
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<td>DeBose, Florence Marie²</td>
<td>Riddle, William Stanley</td>
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<td>Dewhurst, Alice Janet</td>
<td>Schoettler, Miriam Chapman³</td>
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<td>Egan, Frances Marian</td>
<td>Stellocke, Pearl Acna</td>
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<td>Ensley, Talitha Eldora</td>
<td>Strate, Johanna</td>
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<td>Fiz, Mildred Edna</td>
<td>Travis, (Mrs.) Jessie Kahn</td>
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<td>Gibson, Cora Eleanor</td>
<td>Troy, Marion Lucile</td>
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<td>Gregerson, Judith² (cum laude)</td>
<td>Vining, Marjorie Claire</td>
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<td>Hill, Glen Gordon</td>
<td>Wallin, James Roy</td>
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<td>Hills, Elizabeths</td>
<td>Wege, Esther Anna</td>
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<td>Himmelsbach, Doris May</td>
<td>Wharton, Florence Lilian</td>
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<td>Hughes, Cecil Leonard</td>
<td>Wheeler, Gladys Fidele²</td>
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<td>Iyde, Margarette Roberts</td>
<td>Wheeler, Verna Mac</td>
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<td>Jones, Margaret Slater</td>
<td>Wiel, Bodil</td>
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<td>Kelemen, Vivian</td>
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#### COLLEGE OF FINE ARTS

**Bachelor of Arts in Music**

<table>
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<th>Name</th>
<th>Degree Classification</th>
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<tr>
<td>Chittick, (Mrs.) Edna Whitman</td>
<td>McMorran, Jean Pauline (cum laude)</td>
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<tr>
<td>Davis, Lois Lillian</td>
<td>Martin, Connie Elvira</td>
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<tr>
<td>Paulkner, Reita</td>
<td>Shepard, Alleen Ordell</td>
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<td>Humley, Elva Deane</td>
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**Bachelor of Music**

<table>
<thead>
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<th>Name</th>
<th>Degree Classification</th>
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<tr>
<td>Billings, Rhea Ramona</td>
<td>Robe, Vivian Moore</td>
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<tr>
<td>Neer, Margaret Ryta</td>
<td>Young, Fay Laverne</td>
</tr>
<tr>
<td>Neff, Pamela Devera (cum laude)</td>
<td></td>
</tr>
</tbody>
</table>
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UNIVERSITY OF WASHINGTON

Bachelor of Fine Arts
Hinman, Mary Albertine

Bachelor of Architecture
Lockman, Frederick Vincent

GRANDSTAND, Elmer Walterm

COLLEGE OF ENGINEERING

Bachelor of Science in Chemical Engineering
Brown, Earl Dwight
Marton, Earl Vincent
Lorah, James Richard
Sommerville, David Annesley

Bachelor of Science in Civil Engineering
Blessing, Laurence Joseph
Richardson, George Bible
Dautoff, Victor
Russel, Lewis Water
Gildden, Joseph Henry
Thies, William Adolph
Nederlee, Anton Louis (cum laude)

Bachelor of Science in Electrical Engineering
Applegate, Lindsay Moritz
Lauff, Ernest Walter
Axman, Ernest (cum laude)
Maney, Wallace Lincoln
Benecia, Henry
Rice, George Russell
Berg, Lawrence Richard
Ross, Albert Harvey
Bird, Lester Fletcher
Rupp, George Wellington
Budden, Frank Wilfred
Speen, Rhodes Vaughn
Donovan, William McKinley
Suransky, Paul
Heacock, Ward James
Watling, Edward Parsons

Bachelor of Science in Mechanical Engineering
Allper, Morris
Keator, Frederic William, Jr. (cum laude)
Brisack, Floyd Raymond
Lauff, Herman
Bukowsky, Harry William Emil
Northquist, Oscar Evver
DeCan, Lawrence Malon
O’Rear, Clyde Shaw
Dickinson, Phillips
Pope, Ezra Tobey
Downing, Fred
Shaw, Cyril Nile
Joy, Anderson Stickney
Strube, Charles Gustave, Jr.

Bachelor of Science
Johnson, Halton Julius
Latimer, Earl Hastings
Larson, Victor Byron
Wilson, Edwin Durno

COLLEGE OF MINES

Bachelor of Science in Mining Engineering
Anderson, Andrew Elmer

Bachelor of Science in Metallurgical Engineering
Moore, Gerald Edward
Sanders, David Scott
Pigott, William
Zieklick, Lyle Westley

Bachelor of Science in Geology and Mining
Brandenthaler, Rudolph Richard
Hawley, Lyle Tracey
Barmelster, Harry Louis
Merrill, Levi Jasper
Campbell, Roy Everett

COLLEGE OF FORESTRY

Bachelor of Science in Forestry
Andrews, Selden Spencer
Mitchell, John Henry
Dreitler, Ralph Francis
*Moody, Alan Kenneth
Fish, Walter Harold
Pearce, John Kenneth (cum laude)
Poguelquis, Charles F.
Roberts, Wesley Kilmore
Hayward, Harold Dewey
Roberts, Arthur Kitchel
Johnston, Sidney Linebarger
Smith, Richard Merrill
Knapp, Frank Roy
Weston, John Roland
Lankenau, Walter Henry
Williams, Robert Clifton

*Died, May 10, 1921.
DEGREES 283

COLLEGE OF PHARMACY

Graduate in Pharmacy

Allbome, Pearl Hannah
Boswell, Raymond Chester
Carr, Eva Sabine
Clark, Gwendolyn Dolores
Clausen, Wendell Herman
Craig, Leale
Day, Edwin John
DeJong, Don W.
Edwards, Charles Grant
Everly, Walter
Fisher, Frank Philip
Gibson, Burrows
Hague, Sigmund

Boswell, Raymond Chester
CalT, Eva Sabine
Clark, Gwendolyn Dolores
Clausen, Wendell Herman
Craig, Leale
Day, Edwin John
DeJong, Don W.
Edwards, Charles Grant
Everly, Walter
Fisher, Frank Philip
Gibson, Burrows
Hague, Sigmund

Graduate in Pharmacy

Bernheim, Martha Julia
Cordero, Oswaldo Rudolph
Gilbert, Geraldine

Pharmaceutical Chemist

Gilbert, Geraldine
Lee, Richard Roy

Bachelor of Science

Bernheim, Martha Julia
Cordero, Oswaldo Rudolph
Gilbert, Geraldine

Bachelor of Science

Adams, John Quincy
Aida, Margaret Kathryn
Alkin, Victor Kenneth
Allen, Arnold Southwick
Anderson, Myrtle Elvina
Anderson, Virgil Leopold
Barclay, Charles Paul
Beben, Eleanor (cum laude)
Bruggeman, Kathryn Carolyn
Burke, Howard Mason
Chen, Tsan Lyu
Cheng, Chun-Kuei
Cook, Eving Summer
Corbin, Louise Ellen
Corner, William Watson
DeChenne, Homer Ray
DeVoe, Donald Robert
Dunn, Beatrice Bernece (cum laude)
Elgin, Ettta
Ernst, Clarence Reinhold
Flood, George Edward
Forrest, Ronald Cameron
Franck, Thomas G.
Gibson, Blaine
Gilchrist, Marian Virginia
Gilley, Beth May
Goble, Lucy Esther
Goodheart, Mary Katherine
Griffin, Robert Wetzel
Hamill, Margaret Marian (cum laude)
Hamilton, Clark Alexander
Harbaugh, Charles Wooley
Hogg, John McHenry
Honey, Frederick Drake
Huggett, Raphael
Imes, Raymond McKinley
Ives, Mac Elizabeth
Jamieson, Cecil Byron
Juan de Leon, Teofilo
Kobayashi, Hidekichi
Lark, Bert Webb

Adams, John Quincy
Aida, Margaret Kathryn
Alkin, Victor Kenneth
Allen, Arnold Southwick
Anderson, Myrtle Elvina
Anderson, Virgil Leopold
Barclay, Charles Paul
Beben, Eleanor (cum laude)
Bruggeman, Kathryn Carolyn
Burke, Howard Mason
Chen, Tsan Lyu
Cheng, Chun-Kuei
Cook, Eving Summer
Corbin, Louise Ellen
Corner, William Watson
DeChenne, Homer Ray
DeVoe, Donald Robert
Dunn, Beatrice Bernece (cum laude)
Elgin, Ettta
Ernst, Clarence Reinhold
Flood, George Edward
Forrest, Ronald Cameron
Franck, Thomas G.
Gibson, Blaine
Gilchrist, Marian Virginia
Gilley, Beth May
Goble, Lucy Esther
Goodheart, Mary Katherine
Griffin, Robert Wetzel
Hamill, Margaret Marian (cum laude)
Hamilton, Clark Alexander
Harbaugh, Charles Wooley
Hogg, John McHenry
Honey, Frederick Drake
Huggett, Raphael
Imes, Raymond McKinley
Ives, Mac Elizabeth
Jamieson, Cecil Byron
Juan de Leon, Teofilo
Kobayashi, Hidekichi
Lark, Bert Webb

Bachelor of Business Administration

Adams, John Quincy
Aida, Margaret Kathryn
Alkin, Victor Kenneth
Allen, Arnold Southwick
Anderson, Myrtle Elvina
Anderson, Virgil Leopold
Barclay, Charles Paul
Beben, Eleanor (cum laude)
Bruggeman, Kathryn Carolyn
Burke, Howard Mason
Chen, Tsan Lyu
Cheng, Chun-Kuei
Cook, Eving Summer
Corbin, Louise Ellen
Corner, William Watson
DeChenne, Homer Ray
DeVoe, Donald Robert
Dunn, Beatrice Bernece (cum laude)
Elgin, Ettta
Ernst, Clarence Reinhold
Flood, George Edward
Forrest, Ronald Cameron
Franck, Thomas G.
Gibson, Blaine
Gilchrist, Marian Virginia
Gilley, Beth May
Goble, Lucy Esther
Goodheart, Mary Katherine
Griffin, Robert Wetzel
Hamill, Margaret Marian (cum laude)
Hamilton, Clark Alexander
Harbaugh, Charles Wooley
Hogg, John McHenry
Honey, Frederick Drake
Huggett, Raphael
Imes, Raymond McKinley
Ives, Mac Elizabeth
Jamieson, Cecil Byron
Juan de Leon, Teofilo
Kobayashi, Hidekichi
Lark, Bert Webb

Bachelor of Science in Fisheries

College of Fisheries

Bachelor of Science in Fisheries

Fiedler, Reginald Hobson
Glen, Harold Vennie (cum laude)

Bachelor of Science in Fisheries

Norwood, Martin (cum laude)
Smith, Lawrence Kemml
Abel, Robert Bryan
Abelset, Oluf Marcus
Case, Edson
Dickinson, Dean Howells
Gilbert, Warren John
Graves, Paul Hyde
Hickey, Florence Mayne
Hoard, Charles Vere
Hohman, Susan Cecelia

Holander, Tyre Harrison
Hovey, Joseph Chester
Matson, John Peter
Oertel, Daniel
Richmond, Agnes Norby
Rode, Alfred
Vandercook, Modest William
Wilson, John Mayziale, Jr.

Danielson, Ella Theodora
Keith, Emily Hazelwood
Meigs, Jerusha Gilman

Putnam, Marguerite Eleanor
Woolsey, Eva Fay

Bachelor of Science in Library Science
Alfonso, (Mrs.) Marie
Bowles, Anna Laura

Meigs, Jerusha Gilman
Smith, Myretta Wait

School of Journalism
Bachelor of Arts in Journalism
Anderson, Vida Runghilde
Bender, Robert William
Brackett, Anson Wendell
Christian, Byron Hunter
Dunn, Frank Clyde
Grant, James Coleman

Hamilton, Rupert Lane
Lesser, Margaret
Maloney, Patricia
Pierrot, George Francis, Jr.
von Reitler, Wanda
Worboys, Helen Monfort

Graduate Degrees

Master of Arts
Marie Brethorst (Education)
S.L., Dakota Wesleyan, 1913
Thesis: The Educational System of China

Opal Helena Collins (History)
A.B., University of Washington, 1916
Thesis: History of Education in the State of Washington

James Land Ellis (English)
A.B., University of Washington, 1920
Thesis: Studies in the Theology of Milton

Glenn Arthur Hughes (English)
A.B., Leland Stanford University, 1916
Thesis: "Broken Lights"

Arthur Kolstad (Education)
A.B., University of Washington, 1916
Thesis: Comparison of Arithmetic Ability of Men in the Army and Children in the Public Schools

Ruth Haynes Livesay (English)
A.B., Pacific University, 1917
Thesis: The Evolution of H. G. Well's Conception of God

Worth McClure (Education)
A.B., Simpson College, 1908
Thesis: The Function of the Grade Principal

Mae Mathieu (French)
A.B., University of Washington, 1910
Thesis: Literary Relations of Cornelle and Rotrou

Esther Maria Shepherd (English)
A.B., University of Washington, 1930
Thesis: Frontier Literature
Berrie Pearl Yerger (History)  
A.B., University of Washington, 1916  
Thesis: The Congressional Record of Senator James Reed Doolittle

Master of Science

Clyde Myron Cramlett (Mathematics)  
A.B., Walla Walla College, 1916  
Thesis: Conformal Representation with a Special Complex Equation

Addison Harold Hotelling (Mathematics)  
A.B., University of Washington, 1919  
Thesis: A Mathematical Theory of Migration

William Lester Gilliland (Chemistry)  
B.S., University of Washington, 1920  
Thesis: The Preparation of Nickel and Carbonyl

Mae Ellen Larkin (Bacteriology)  
A.B., New York State College for Teachers, 1910  
Thesis: On the Causes of Variability in the Activity of Guinea-pig Complement

George Bartholomew Sartoris (Botany)  
B.S., University of Washington, 1920  
Thesis: A Cultural Study of Smut (Tilletia Tritici) on Hard Media

Isabel Clarissa Stewart (Psychology)  
B.S., University of Washington, 1920  
Thesis: The Effect of One Factor in a Situation upon Learning

Dorothea Taylor (Zoology)  
A.B., University of Washington, 1918  
Thesis: The European Earwig in Seattle

William Ronald Wilson (Psychology)  
A.B., University of Washington, 1917  
Thesis: The Effect Upon Practice of Accompanying Conditioning Stimuli

Master of Science in Mechanical Engineering

Shinji Yonemoto  
B.S. in Mechanical Engineering, University of Michigan, 1920  
Thesis: Scientific Management

Master of Science in Ceramics

Ernest Francis Goodner  
B.S. in Chemical Engineering, University of Washington, 1920  
Thesis: Four Typical Refractory Clays of Washington

Master of Science in Metallurgy

Arrid Emil Anderson  
B.S., University of Utah, 1920  
Thesis: The Production and Melting of Sponge Iron

Arthur Paul Wickmann  
B.S. in Mining Engineering, University of Wyoming, 1919  
Thesis: Froth Flotation of Coal

Master of Science in Forestry

Charles Fridolph Fogelquist  
B.S.F., University of Washington, 1920  
Thesis: Planing Mill Practice and Design

Irvin William Otto Gamm  
A.B., Northwestern University, 1916  
B.S.F., University of Washington, 1920  
Thesis: The Fibre-length of Douglas Fir as a Determinative Characteristic in the Treatment of Douglas Fir

Alexander Michael Koraloff  
M.F., University of Petrograd (Imperial Forestry Institute), 1913  
Thesis: Logging by Crawler Type Tractors
UNIVERSITY OF WASHINGTON

Master of Science in Pharmacy
Omega Hilton
B.S., University of Washington, 1917
Thesis: The Action of Nitrosyl Chloride on Normal Heptane

Marin Ylagan Orosa
B.S., University of Washington, 1920
Thesis: Methods of Assay and Chemistry of Neo-Arsphenamine

Master of Business Administration

Raphael Lester Kelly
B.A., University of Washington, 1920
Thesis: A Blue Sky Law for the State of Washington

Master of Arts in Business Administration

Toshio Ohtaguro
A.B., Meiji University, 1915
Thesis: Transportation in Japan

Doctor of Philosophy

Chester Lacombe Rich
A.B., Boston University, 1915
M.A., Boston University, 1916
Thesis: The Progress of Humane Legislation in Washington

NORMAL DIPLOMAS

Five-Year Diploma

Aclis, Margaret Kathryn
Anderson, Evelyn Martha
Anderson, Helen Dorothy
Anderson, Myrtle Elvina
Ayres, Katherine Mary
Bardon, Norma Martha
Bassett, Charlotte Anne
Birds, Margaret Elizabeth
Blumenfeld, Zipporah
Bonner, Gertrude
Bracken, Bertha
Bricker, William Albert Lee
Brookman, Fred William
Bruce, Irene Frances
Burnham, Helen Marie
Bryant, Lucile Swigart
Byers, Kathryn Ada
Camp, Dorothy Foster
Campbell, Gertrude Cecelia
Card, Mabel
Caton, Mildred Wheeler
Chamberlain, Elizabeth
Chesley, Dorothy Helen
Conklin, Florina Agnes
Connell, Archie Mitchell
Cook, Jennie Nixon
Craske, Fred
Culver, Leda Gertrude
Cummins, Arlyce Helen
Cutler, Susan Ethel
Cutts, Laura Louise
Davies, Violet
Davis, Lois Lilian
DeLerken, Grace Margaret
DeRosa, Florence Marie
Dewhurst, Alice Janet
Dickinson, Laura Cornelia
Downing, James Mont
Dudley, Lilah Adele
Eagan, Frances Marian
Emerson, Frances Burgion
Emney, Telitha Eldora
Fairley, Helen Marla
Farnsworth, Ruth
Filz, Mildred Edna

Finnickeum, Ruth
Fulton, Grace
Ganders, Harry Stanley
Gibson, Cora Eleanor
Good, Josephine Dolores
Govran, Dawn Vivian
Griffiths, Lois Wilfred
Harrington, Florence
Helmich, Merle Lillian
Hendriff, Elimer Claude Victor
Hibbard, Myra
Hill, Glen Gordon
Hills, Elizabeth
Himmelsbach, Dora May
Himman, Mary Albertine
Holland, Ruth
Hughes, Ina Belle
Hyde, Margarette Roberta
Jasperson, Agnes Grace
Jones, Margaret Slater
Jones, Marjorie
King, Dorothy
Lamoreux, Harry DeWitt
Larse, Mona Josephine
Leavitt, Marion Clare
Lilly, Andrie Stella
Lindley, (Mrs.) Alice
McCormick, Helen
Madison, Viola
Marot, (Mrs.) Ada Bouck
Marshall, Dorothy Edith
Melby, Esther Muriel
Metzker, Margaret Ream
Meyer, Rita
Miller, Esther Jean
Millis, (Mrs.) Adele Hoppock
Mooteagle, Gwendolyn Anne
Myers, Margaret Esther
Neer, Margaret Rya
Neill, Vera
Nelson, Ellen
Nelson, Laura Elsa
Nemorovsky, Lena Leah
Norman, Evelyn Minglis
Olsen, Lillian Eleanor

286
Orrell, Jessie
Overman, Marion Gray
Palme, Carol Margaret
Peterson, Gladys Lorraine
Peterson, May Anita
Phelps, Grace Marie
Podmore, George Arthur
Poyntz, Tyne Christine
Preston, Louise Byrne
Reeves, Joseph Austin
Riddle, William Stanley
Robe, Vivian Moore
Ryanson, Hulma Clare
Simon, Henrietta Rebecca
Sloan, Besse Andrews
Smith, Gladys Lucile
Smith, George Minna, Jr.
Snow, Iola
Stanley, Maxine

Stead, Miriam Ellen
Steinke, Pearl Acena
Summers, Doria Edith
Thomas, Gertrude Marion
Thompson, Catherine
Travis, (Mrs.) Jessie Kuhn
Troy, Marion Lucille
Vining, Marjorie Claire
Virtue, Jessie Hardy
Walker, Beatrice Marie
Watrous, Genie Ida
Way, Lois Edith
Weag, Esther Anna
Webster, Jessie Elizabeth
Wharton, Florence Lillian
Wheeler, Venne Mac
Wiel, Bodil
Woodward, Harriett

University Life Diploma

Alport, Ruth Jessie
Anderson, Isabel Pitts
Baker, Alice Harriet
Bartley, Georgia Lulu
Blair, Anna Clio
Connor, Edna
Cunningham, Theresa
David, Pearl La Rue
Desmond, Margaret Rose
Dryden, Ceci Pearl
Emerson, Frances Bargen
Fleenor, Blanche
Floyd, Lola Mildred
Foltz, Laura Azalia
Fraser, Alice Rosea
Gates, Louise
Glaser, Harry
Gregerson, (Mrs.) Judith
Hurlcy, Ernest Edmund
Hutchison, Dora
Jacobs, Isabel
Johnson, Mrs. Lucille Saunders
Keenan, Helen Rose
Kelsey, Louise
Kraft, Gertrude
Lindass, Anna
McCull, Mrs. Beradine Haller
McCombie, Almea Katherine
McFate, Mary Elizabeth
McHugh, Ruth
McKay, Mary Hannah Isabel
Marion, Helen Isabel
Miles, Alice
Miller, Helen
Moffett, Edith Pauline
Morgan, Miles Evan
Oliphant, James Orin
Olson, Cecilie Olive
Parks, Grace Amelia
Presutad, (Mrs.), Jean Porter
Pritchard, Millie Margaret
Ryns, Ruby
Schoettler, Miriam Chapman
Shaffer, Florence
Simpson, Louise Katherine
Smallwood, Gladys Nelsine
Strate, Johanna
Sundquist, Leonia Marie
Taylor, Martha Sarah
Tolleson, (Mrs.) Hazel Nihal
Tucker, Ruth Elizabeth
Vinling, Marie
Wheeler, Gladys Fidele
Willard, (Mrs.) Ethel Combs
Winter, Frank

Senior Scholars—Class of 1921

Chesley, Dorothy Helen
Davidson, Thomas Nelson
Dunn, Beatrice Renlee
Greenwood, Lucile Marcelle
Holland, Ruth
Houck, Hazel
McMorran, Jean Pauline
Orrell, Jessie
Smith, George Minna

Romantic Languages
Education
Business Administration
Journalism
Romantic Languages
Home Economics
Music
Mathematics
History

COMMISIONS IN THE OFFICERS' RESERVE CORPS, UNITED STATES ARMY

Second Lieutenant, Coast Artillery Corps

James Theodore Catlett
Fred John Slinger
Glen Hart Walker

Second Lieutenant, Infantry

Virgil Leopold Anderson
Floyd Raymond Blassack
Cecil Byron Jamieson
UNIVERSITY OF WASHINGTON

DEGREES CONFERRED AUGUST 30, 1921

BACHELOR DEGREES

COLLEGE OF LIBERAL ARTS

Bachelor of Arts

Allen, Mabelle
Anderson, Mary Holderman
Campbell, Jean Allison
Chen, Suen
Clark, Elizabeth Roulston
Cobb, Christian Marie
Cochran, Cathryn Elizabeth
Coffman, Mabel Maurine
Criswell, Lois
Cuts, Beatrice Tyler
Fleemer, (Mrs.) Manie
Forbes, Edith
Gellermann, William
Gorman, Vinese Ellen

Bachelor of Arts

Hjortoo, Gurina Olise
Hoover, Ralph Leonard
Johnson, (Mrs.) Leta B.
McGill, Vivian Jerald
Martin, Mary Geneva
Mason, Irma Ruth
Moreland, Mildred
Morrison, Ruth Louise
Owen, Elizabeth Hayden Pratt
Stephenson, Edith Frances
Towne, Mertice Claire
Trawick, Margaret Philips
Van, Tae-chung
Wilson, Frances Imogen

Bachelor of Science

Crowder, Harriet
Davis, Dorothy Carvel
Gregg, Ralph
Hawley, Sydney James

Bachelor of Science in Home Economics

Brown, Edith Olivia
Hauck, Hazel Marie

Bachelor of Science

Ahquist, Martha Edith
Brokaw, Marion A.
Close, Anita Lillian
Cooney, Alta Carolyn
Ector, Thelma Payne
Foster, Charles Jacob
Gray, Josephine
Harris, Sarah Eleanor

Bachelor of Science

Kipp, Pearl Velma
McKin, Mrs. Margaret McLean
Miller, Elveta Leone
Morford, Helen Irene
Morton, Mamie Belle
Olsted, Marion C.
Robertson, Berdina Marion
Stranack, Janet Katherine

Bachelor of Arts in Music

Burch, Clara Catherine
Cole, Thelma Nadine

Bachelor of Arts

Wheaton, Marion Elizabeth

Bachelor of Music

Mason, Lela Ernsette

Bachelor of Fine Arts

Pattison, Evelyn

Bachelor of Arts in Dramatic Art

Teall, Mrs. Hazel Connell

COLLEGE OF SCIENCE

Bachelor of Science

Little, Dorothy Veren
McColinie, Marguerite Charbonnel
Peden, Barton Edward
Siler, Lillie May

Bachelor of Science in Home Economics

Ostrander, Ruth Elizabeth

COLLEGE OF EDUCATION

Bachelor of Education

Bachelor of Arts

Ahquist, Martha Edith
Brokaw, Marion A.
Close, Anita Lillian
Cooney, Alta Carolyn
Ector, Thelma Payne
Foster, Charles Jacob
Gray, Josephine
Harris, Sarah Eleanor

Bachelor of Science

Kipp, Pearl Velma
McKin, Mrs. Margaret McLean
Miller, Elveta Leone
Morford, Helen Irene
Morton, Mamie Belle
Olsted, Marion C.
Robertson, Berdina Marion
Stranack, Janet Katherine

Bachelor of Arts in Music

Burch, Clara Catherine
Cole, Thelma Nadine

Bachelor of Music

Mason, Lela Ernsette

Bachelor of Fine Arts

Pattison, Evelyn

Bachelor of Arts in Dramatic Art

Teall, Mrs. Hazel Connell

COLLEGE OF ENGINEERING

Bachelor of Science in Chemical Engineering

Grant, Gary Gale

Bachelor of Science in Electrical Engineering

Adelson, Abraham Michael
Landsburg, Robert Archibald

Bachelor of Science

Keyes, Harmon Edward

Mattson, Nels Emanuel
Degrees

College of Pharmacy
Graduate in Pharmacy
Haleston, Chris
Pharmaceutical Chemist
Dals, Ruth Magdalene
Bachelor of Science

Cordero, Rosario Manala

College of Business Administration
Bachelor of Business Administration

Anderson, Ray Horace
Bannwart, Charles Gustave
Baker, Carl Oscar
Bates, Kenneth Ogden
Bellingham, Norman O.
Blen, Henry Hyisung
Brickell, Duncan Walker
Cheng, Chien-Feng
Dickerson, William Eugene
Elwick, Andrew
Foo, Yao Cheng
Goldman, Jack
Harvey, John Hamilton
Irvin, John Ivan
Johnston, Hazel Blanche

Kaufman, Elinar Manganese
Kongle, Edward
Lee, Joel Kael Theodore
McLeod, Gladys Irene
McMillan, Gregor MacLeod
MacNaughton, Ellen
Miller, Ethel Adella
Myers, Dicie Mildred
Nelson, Leona Marie
Pratt, Helen Van Ness
Sturin, Joseph
Turner, Herbert Clair
Turpin, Harold Lester
Wood, Arthur Garde

College of Fisheries
Bachelor of Science in Fisheries
Pugsley, Walter Herbert

SCHOOL OF LAW
Bachelor of Laws

Ellis, Leon Hubbard
Hover, Ernest John
Hyndman, William L.

Miller, Roy Charles
Sprague, Hollister Thompson

LIBRARY SCHOOL
Bachelor of Arts
Hansen, Violo
Bachelor of Science in Library Science
Gill, Margaret Susannah

Grant, Muriel

SCHOOL OF JOURNALISM
Bachelor of Arts in Journalism
Verran, William Jr.

GRADUATE DEGREES

Master of Arts
Dean Stanley Bollman (English)
A.B., University of Washington, 1919
Thesis: The Social and Political Philosophy of G. Lowes Dickinson

Bewan Glague (Political Science)
A.B., University of Washington, 1917
Thesis: The Theory and Practice of Representation in the United States

Pearl Sibyl Coffinberry (Education)
A.B., Fairmount College, Kansas, 1907
Thesis: A Survey of Instruction in an Elementary School of Two Hundred Fifty Pupils

Henry Cremer (Education)
A.B., University of Washington, 1915
Thesis: Some Psychological Factors of Manual Arts

Oscar Kern Glover (Education)
A.B., University of Washington, 1919
Thesis: A Social and Educational Survey of School District No. 65 (Kapowsin), Pierce Co.,
Washington
UNIVERSITY OF WASHINGTON

Elmina Elizabeth Graham (English)
B.L., Whitman College, 1908
Thesis: A Comparison of the Novels of Charles Brockden Brown with Godwin’s Caleb Williams

Harrison French Heath (Education)
B.S., University of Washington, 1916
Thesis: A Short Course in Vocational Civics for High School Seniors

Henry T. Imes (Education)
B.Ed., University of Washington, 1918
Thesis: Vocational Guidance Through Arithmetic

Thane Miller Livesay (Education)
A.B., Pacific University, 1917
Thesis: Administrative Plans for the Improvement of Retention and Promotion of Public School Children

Gabriel Lotfield (Education)
B.S., Valparaiso, 1898
A.B., University of Washington, 1918
Thesis: The Direct Principle in the Teaching of Modern Languages

John D. Meyer (Education)
A.B., Washington State College, 1912
Thesis: Results Obtained from the Otis Group Intelligence Scale Applied to School Grades Four to Twelve Inclusive, of Harrington, Washington, and Some School Adjustments Based Thereon.

Elvey Tillman Parsons (Education)
B.Ed., University of Washington, 1920

Tillman Peterson (Education)
A.B., Luther College, 1908
Thesis: Occupational Survey of the Hoquiam High Schools

Katherine Constance Robertson (English)
A.B., University of Washington, 1918
Thesis: A Critical Exposition of the Philosophy of Herbert G. Wells

Eleanor Marie Sickels (English)
A.B., Whitman College, 1917
Thesis: Prophets of Man: A Study in the Religion of the Socially Conscious Poets of Contemporary America

S. Bertha Wilson (English)
A.B., University of Washington, 1917
Thesis: Notes on the Doctrines and Sources of Sir Thomas B. Browne’s Religio Medicus

Wesley George Young (Education)
A.B., University of Washington, 1917
Thesis: An Interpretation of Recent Tendencies in English Education

Master of Science

Helen Elizabeth Eagleson (Psychology)
B.S., University of Washington, 1930
Thesis: The Effect of the Presence or Absence of an Accompanying Sound Stimulus in the Maze Learning of White Rats

Master of Business Administration

Lisette Emery Fast (Economics)
A.B., Leland Stanford, 1919
Thesis: The Efficiency of Cargo Handling in Relation to the Decasualization of Long-Short Labor on the Seattle Waterfront

Lorraine Frankenfeld (Business Administration)
A.B., Leland Stanford, 1919
Thesis: An Efficiency Rating for Departmental Managers in Department Stores

Doctor of Philosophy

Olive Kuntz (History)
A.B., University of California, 1916
M.A., University of California, 1917
Thesis: Tiberius Caesar and the Roman Constitution
Abel, Helen Marian
Ahnquist, Martha Edith
Alten, Victor Marshall
Allen, Glennia Alice
Baker, Carl Oscar
Billinga, Rheta Ramona
Brokaw, Marion
Brown, Edith Olivia
Cage, Mary
Campbell, Jean Alison
Clark, Elizabeth Roulsten
Cooney, Alta
Crowder, Harriet
Cutts, Beatrice Tyler
Ector, Ehebe Payne
Elwick, Andrew
Fleenor, Mrs. Mame
France, Ada May
Gunn, Elizabeth
Harris, Sarah Eleanor
Hauck, Hazel Marie
Hjortoos, Gurina Oline
Hughes, Cecil Leonard
Jadon, Nels
Johnson, Mrs. Leta E.
Kipp, Pearl Velma
Anderson, John Franklin
Andrews, Ehta
Arthur, Agnes
Bell, Doris Lillian
Binnings, Mildred Olive
Bonell, Hannah E.
Carey, Miles E.
Chandler, Blanche
Close, Anelia Lillian
Coffinberry, Pearl S.
Cranske, Frederick H.
Ellis, John Boyd
Forbes, Edith
Fox, Viva
Gerriets, Anna
Good, Jane
Greene, Clyde Joseph
Hamma, Gladys
Hartmann, Elsie A.
Holman, Zelma L.
Hone, Marie C.
Houghton, Florence Lewis
Jerbert, Arthur Rudolph
Kronenbahn, Mercedes
Larson, Victor Byron
McKim, Margaret McLean
Mason, Arma Ruth
Mason, Lola Ernestine
Morford, Helen Irene
Moreland, Mildred
Myers, Dicke Mildred
Nelson, Leone Marie
Olmsted, Marion C.
Ostrander, Ruth E.
Packard, Augustus Henry
Pattison, Evelyn
Perkins, Georgia Yost
Rich, Estelle May
Robertson, Marian Berdema
Siler, Lillie May
Smith, Edrefa Allen
Stephenson, Edith Frances
Stranack, Janet K.
Tenn, Mrs. Hazel Conseil
Turner, Lloyd Edwin
Wansberg, Clarence E.
Watson, Anna E.
Whitehead, Virgil
Wilson, Frances Imogene

University Life Diploma

Larson, Laura Melana
Lewis, Helen Prate
MacPherson, Lexie
Manson, Gladys
Marsh, Constance Ardene
Martin, Lenore
Milkind, Mildred Eunice
Miller, Mrs. Edeltrud
Munger, Ruth Willard
Myer, Edna M.
Norton, Mamie Belle
Proctor, Muriel Esther
Quast, Iola
Roberts, Sara
Robinson, B. Very
Sater, Gertrude P.
Sheehan, Mary Madeline
Shelton, Lucy Martha
Simonds, Esther
Swingle, Adele Mae
Thwing, Clarence
Watt, Mabel
Waxler, John Ulrick
FELLOWSHIPS, SCHOLARSHIPS AND PRIZES
JUNE 20, 1921

The Loretto Denny Fellowships
The Arthur A. Denny Fellowships
Fellowships in the College of Mines and the Northwest Experiment Station United States Bureau of Mines
The Dupont Fellowship
The Bon Marche Industrial Fellowship
Alice Rosena Fraser

Columbia University Fellowship in Mining Engineering and Chemistry
Stanley Gill

The Mars Fellowship (Not yet awarded)
The E. F. Blaine Oratorical Prize of $100
Awarded to University of Idaho
The Judge Kenneth Mackintosh Debating Prize of $75
James Milton Bailey
Robert Stetson Macfarlane

The Isabella Austin Memorial Scholarship for a Freshman Woman
Eliza May Hopt

The University State Bank Prize of $100
Wendell Carl Edberg
Carl Oscar Baker
The Judge Thomas Burke Prize of $25 for Excellence in French
Miriam Remley
The Judge Thomas Burke Prize of $15 for Excellence in French
Lydia Louise Scott
The Junior Military Prize
Louis Fechter Janeck

The Samuel Rosenberg Scholarship of $200 in French
Germaine Mercier

The N. Paolella Gold Medal for Excellence in Italian
Marjorie Jones
The Felix Rosina Prize of $25 in Italian
Beth May Gilley
The Silvio Risegari Prize of $50 in Italian
Iris Canfield
The Frank Buty Prize in Italian
Thelma Harold
The Kellogg Prizes of $35 in Architecture
Elizabeth Ayer
Marshall Walter Gill
Doris Selbert
The Gamma Phi Beta Scholarship of $100
Lois Janet Wentworth
The Sigma Delta Chi Prize of $100 in Journalism
Maurice Amlot
Rupert Hamilton
The Washington Alumnae Scholarship of $100
Ethel Marjorie Williams

The Vimy Ridge Chapter of the Daughters of the British Empire Prize of $100
Elwood Hutcherson
Honorable mention, Herbert Eades
The Thomas Burke China Club Prize of $25
Horace Gilbert
The Ko Loang Yih Prize of $25
Lillian Crane
The Venino Scholarship in Music
Hazel Waechter

† See page 14.

*Died, June 25, 1921.
**REGISTER OF STUDENTS—1921-1922**

*Year course in Public Health Nursing*

**U. S. Vocational Student—**

Aagard, Betella, LD, Bus. ....... Seattle
Aalto, Eila A, ED, MS ....... Douglas, Alaska
Abbott, Susan, LD, LA .......... Seattle
Abel, Fred, LD, LA ........... Montesano
Abel, William Deazil, LD, For. ....... Montesano
Abbott, C. E, BA ............... Seattle
Aber, James F, UD, Ed .......... Seattle
Abrahamson, Jacob, LD, Bus .......... Seattle
Aceito, Tomas A, LD, OS .......... Seattle
Adams, Arlene Marie, UD, FA ........ Seattle
Adams, Carlton F, LD, EE .......... Seattle
Adams, G. Evert, LD, Bus .......... Seattle
Adams, George B, LD, Bus .......... Seattle
Adams, Howard William, LD, Bus .......... Seattle
Adams, Hugh UD BA ............ Tacoma
Adams, James H, LD, Eng. ....... Trenchet
Adams, John C, LD, Sci. .......... Portland, Or
**Adams, Nick, Sp, Bus .......... Seattle
Adamsom, Louise, LD, Phar .......... Seattle
Adamsom, Merrill G, LD, Ed .......... Seattle
Aakolm, Helen Ernestine, LD, Sci. ....... Seattle
Agolli, Andres G, LD, Ed .......... Philippines
Agoe, Edna Stuart, LD ........... Philippines
Agnew, Mertyl Jane, LD, LA .......... Seattle
Agunda, Mariano M, Univ, Eng .......... Philippines
Aguilas, Jose C, UD, Bus .......... Philippines
Aguilas, Pedro D, Min .......... Philippines
Aguinaldo, Pedro D, Min .......... Philippines
Aguire, Humberto, UC, LA ........... Chile
Aharan, Ada Alma, LD, Bus .......... Seattle
Ahsan, Kris L, BA ............... LA, Bus
Alansworth, Ruth, UD, Jur .......... Newport
Alitchson, Edwin Perle, LD, Bus, Spokane
Alitchson, E Virginia, LD, LA, Berkeley, Cal
Alllen, Florence Rose, UD, LA ........ Seattle
**Ajax, Ivor L, LD, Bus .......... Wenatchee
Alambra, Jose Z, LD, Sci, Philippines .......... Seattle
Albang, Dorothy G, LD, LA .......... Spokane
Albee, Archie Veryl, UD, LA .......... Seattle
Alben, N Edna, Grad .......... Vancouver
Aiden, John H, Grad .......... Washington, D C
Aiken, Rose Mitchell .......... Walla Walla
Aldwell, Doreen, LD, BA .......... Everett
Aldwell, Norah E, UD, Bus .......... Everett
Alego, Thomas E, UD, MS Sc, Tacoma, R 1
Allender, Elea Kathryn, LD, Sci .......... Seattle
Allan, Hazel, LD, LA .......... Seattle
Allan, Helen Quinton, LD, LA .......... Seattle
Allan, Blanche Locell, LD, Phr, Seattle
Allen, David Clyde, LD, MS .......... Taborah
Allen, Doris M, UD, LA .......... Duvall
Allen, Edna, LD, Phar .......... Selah
Allen, C Edward, UD, EE .......... Seattle
Allen, Erdman J, UD, Eng .......... Seattle
Allen, Gordon C, LD, For .......... Seattle
Allen, Harry Warren, LD, Bus .......... Seattle
Allen, Herbert W Jr, UD, Bus .......... Spokane
Allen, John M, 2d Law .......... Seattle
Allen, Lucena, Unc, Bus .......... Seattle
Allen, Mabel Mary, LD, LA .......... Yakima
Allen, Ruth Frances, LD, FA .......... Toppenish
Allen, Thomas J, Jr, UD, For .......... Seattle
Allen, Thomas Sargent, LD, Bus .......... Seattle
Allen, Vera, UD, LA .......... Seattle
Allen, Webster George, Unc, For, La Conner
Allyn, P, LD, Bus .......... Seattle
Altman, Luther Clare, LD, Ed, Bellingham
Avery, Mary W, LD, FA .......... Seattle
Ames, Anne, Sp, FA .......... Seattle
Amesbury, Helen Jean, LD, Bus .......... Seattle
Amit, Maurice, UD, LA .......... Spokane
Amos, Felipe Jr .......... Philippines
Anderberg, Marvin Odet, UD, ME .......... Spokane
Anderson, Irene, LD, LA .......... Seattle
Anderson, Adolph, LD, BA .......... Seattle
Anderson, Alma C, LD, LA .......... Everett
Anderson, Andrew W, UD, Fish .......... Seattle
Anderson, Anton Lee, LD, Bus .......... Creston
Anderson, Arthur Andrew, LD, LA .......... Seattle
Anderson, Arthur Joel, UD, Bus .......... Seattle
Anderson, Beatrice, Grad .......... Berkeley, Cal
Anderson, Bernhard F, Unc, Bus .......... Seattle
Anderson, Charles N LD, Bus .......... Seattle
Anderson, Chris, LD, ME .......... Seattle
Anderson, David G, Univ, Eng, Vancouver, C
Anderson, Detmer A, LD, Min .......... Seattle
Anderson, Donald C, LD, Bus .......... Aberdeen
Anderson, Dorothy I, LD, Bus .......... Seattle
Anderson, Howard W, LD, OE .......... Spokane
Anderson, Edgar, Unc, Law .......... Seattle
Anderson, Edna M, UD, Ed .......... Redmond
Anderson, Edward Garrett, UD, Ed .......... Seattle
Anderson, Eldon, UD, LA .......... Olympia
Anderson, Edwin, UD, ME .......... Chinook
Anderson, Elizabeth, LD, LA .......... Tacoma
Anderson, Evelyn C, Unc, LA .......... Seattle
Anderson, George D, LD, LA .......... Everett
Anderson, Georgia, LD, LA .......... Seattle
Anderson, Helen Ethelyn, UD, LA .......... Seattle
Anderson, John Algot, LD, BE .......... Seattle
Anderson, John A, LD, Bus .......... Seattle
Anderson, John Algot, LD, Phar .......... Enumclaw
Anderson, Julia J, LD, Sci .......... Tacoma
Anderson, Lloyd Alva, Unc, EB .......... Roy
Anderson, Lou E, UD, Sci .......... Seattle
Anderson, Mrs, Louise, UD, Sci .......... Spokane
Anderson, Mabel Felton, UD, LA .......... Seattle
Anderson, Margaret G, UD, Bus .......... Tacoma
Anderson, Margaret G, UA, Bus .......... Seattle
Anderson, Niles M, LD, For .......... Mahar
Anderson, M. Olga, UD, FA .......... Seattle
Anderson, Pearl A, UD, LA .......... Seattle
Anderson, Philena, LD, LA .......... Mt Vernon
Anderson, F Raymond, LD, LA .......... Tacoma
Anderson, Robert F, UD, Bus .......... Spokane
Anderson, Andrew J, LD, Bus .......... Seattle
Anderson, Walter J, UD Bus Coeur d'Alene Id
Anderson, William, LD, LA .......... Battle Ground
Andrus, Charles C, LD, EE .......... Orange, Cal
Andrews, Clarence A, LD, LA .......... Seattle
Andrews, Clarence L, LD, LA .......... Seattle
Andrews, Emery E, UD, LA .......... Modesto, Cal
Andrews, Mabel, CR, Citation, LA .......... Seattle
Angier, Ernest Clement, UD, Sci .......... Chehalis
Appo, Kenneth, LD, Bus .......... Hoquiam
**Annis, Verle L, UD, FA .......... Alderton
Ansonge, Norman L, LD, LA .......... Seattle
Apple, Albert, UD, Ed .......... Kilianburg
Appleby, Mary L, UD, Ed .......... Bellingham
Applegate, Kenneth W, LD, Sci .......... Everett
Appleton, O Floyd, Unc, LA .......... Seattle
Aquino, Juan, LD, Bus .......... Philippines
Aras, K, Allen, LD, FA .......... Seattle
Arat, Clarence T, 1st Law, LA .......... Seattle
Archie, Howard Dean, UD, Bus .......... Seattle
Arciga, Moses, LD, LA .......... Seattle
<table>
<thead>
<tr>
<th>Name</th>
<th>City, State</th>
<th>City, State</th>
<th>City, State</th>
<th>City, State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arend, Harry O.</td>
<td>Spokane, WA</td>
<td>Ballard, Louise L.</td>
<td>Seattle, WA</td>
<td></td>
</tr>
<tr>
<td>Arinna, Sumiyoshi</td>
<td>Grad, Japan</td>
<td>Ballard, Ralph E.</td>
<td>Bus., Great Falls, MT</td>
<td></td>
</tr>
<tr>
<td>Arlely, Helen L.</td>
<td>UD, Pharm, Tacoma</td>
<td>Ball, Alfred Sp.</td>
<td>Sci., Seattle, WA</td>
<td></td>
</tr>
<tr>
<td>Armbrtsc, Judith E.</td>
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Borger, Robert John, Jr., LA ... Seattle
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Brainard, Elias A., LD, Bus. ... Seattle
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Collins, William, Grad. ........... Seattle
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Compton, Harry O, L.D., EE ....... Tacoma
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Crawford, Margaret, L.D., LA ... Bellingham
Crawford, Dorothy E, L.D., Sci ... Seattle
Crawford, Wallace W, L.D., Bus ... Seattle
Crawford, W E, U.D., FA ... Walla Walla
Crawford, Willhema U.D., FA Walla Walla
Crawford, W Randall, 2d Law .... Seattle
Crawshaw, Arthur C, Soc. Eng ... Seattle
Creamer, Lillian, Unc. Law ... Seattle
Creich, G S, L.D., Min ....... Seattle
*Crin, Madison, Bus ....... Seattle
Crim, Winifred, L.D., LA ...... Seattle
Crimnins, Allan L, L.D., Bus ... Seattle
Crippen, Nevil B, L.D., LA ... Tacoma
Critch, Ray H, L.D., Bus ... Spokane
Cristman, Martha E, L.D., Sci ... Seattle
Crostead, Lewis, U.D., EE ... Mt Vernon
Crook, Eveline E, U.D., Ed ... Alsfelf, Ore
Cronwell, Harry Hardin, L.D., Bus, Monroe
Cronen, Walter F, L.D., For ... Olympia
Cronin, Nona, L.D., Bus ... Butte, Mt
Cronk, Myrons F, U.D., Bus ... Seattle
Crosher, Frederick, L.D., Bus ... Seattle
Croston, Harold W, L.D., Bus ... Seattle
Croston, S Miriam, U.D., SCI ... Seattle
Cross, Robert T, L.D., SCI ... Seattle
Crouch, Donna Leon, L.D., LA ... Seattle
Cruelley, M Beatrice, L.D., LA ... Seattle
Crowe, Malcolm, L.D., Eng ... Seattle
Crueger, Frank P, Eng ... Seattle
Crueger, Frank, L.D., EE ... Seattle
*Crumb, Joseph A, L.D., Bus ... Seattle
Crumley, Joseph E, L.D., Bus ... Spokane
Crum, Leonard W, L.D., CHI ... Seattle
Crum, Edward A, L.D., Bus ... Seattle
Culliton, J Estelle, L.D., LA ... Seattle
Culliton, John G, L.D., EE ... Seattle
Cullum, Gordon L, L.D., EE ... Tacoma
Cundiff, Velda Pauline, L.D., LA, Wenaschéc
*Cunningham, Allan L, L.D., Bus ... Seattle
Cunningham, Miss Creigh, U.D., L.A, Everett
Cunningham, Rosamond, U.D., Bus ... Seattle
Curt, Clinton D, U.D., Sci ... Richland
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Curtsis, Verne B, U.D., LA ... Grand Dales
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Cussac, Achille Clair, Unc, Bus, Issaquah
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Cutting, Jane W, L.D., LA ....... Seattle
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Dagg, Harold M, L.D., Bus ... Seattle
Daggett, Annie R, U.D., Sci ... Fort Ludlow
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Dahl, Helen E, L.D., Ed ... Seattle
Dabberg, Edith, L.D., LA ....... Seattle
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Dilley, Erwin F, 2d Law ... Seattle
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Dannerell, V Richard, U.D., SCI ... Bellingham
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Danby, Leo Chandler, LD, EE...... Seattle
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Dark, Dorothy, LD, LA...... Seattle
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Darling, Irene F, UD, LA...... South Bend
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Daugherty, Anna M, UD, Sci...... Newport, Or
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Davis, Esther LD, Sci...... Seattle
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Davis, Benjamin Franklin, LD, Sci...... Seattle
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Davis, Emilio D, LD, LA...... Seattle
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De Lisle, Dorothy, Mt de la Pluie, Dorothy, LA...... Seattle
de Leon, Esteban, LD, Sci...... Philippines
Denning, Edgar S, Seattle...... Seattle
Demou, Frank, E, Ud...... Seattle
Demuth, Orin A, UD, EB...... Seattle
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DeVine, Harry E, LD, LA...... Kittitas
Dewar, Duncan W, LD, Eng...... Manette
Dewey, Bertha, LD, LA...... Seattle
Dexter, Frances Etsi, LD, LA...... Winlalow
Diez, Arcelia E, LD, Sci...... Cebu, Cebu, Pilipines
**Dibb, Harold J, LA...... Great Falls, Mt
Dick, Elma Martha, LD, FA...... Seattle
**Dick, Everett, For...... Seattle
**Dick, Roland S, Unc, LA...... Lewiston, ida
Dickerson, William E, Grad...... Seattle
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Duhlman, Catherine A, Unc, LA...... Camp Lewis
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Doutrich, Stephen, LD, Min........Spokane
Dover, Leon David, UD, Bus...Seattle
Dowling, Barbara, LD, Sc........Seattle
Down, Andrew, UD, L. Sc. ...Lacey
Downie, Ruth, LD, Sc........Seattle
Doyne, Edna Gay, UD, Sc........Seattle
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Dyer, Douglas........Seattle
Dye, Catharine, UD, Pres.....Seattle
Durgin, Carey J., LD, Sc....Seattle
Dunn, Frank 1. .Seattle
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Durham, Edward, UD, Gr ..........Seattle
Dyes, H., UD, Bus........Seattle
Draper, Isabel, LD, FA........Seattle
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DufaiI, ..Seattle
Drew, Helen 0., Bus........Seattle
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Eads, Herbert, UD, Sc........Seattle
Eagleson, Edward, UD........Seattle
Eagleson, Willard S., LD, Sc...Seattle
Eakle, Frank 1., UD, Bus..........Seattle
Eagle, H. H., Licii., Bus........Seattle
Edwards, Frank Hall, LD, Eng......Seattle
Edmunds, William S., LD, Sc.....Seattle
Emmons, Robert H G, Grad......Seattle
Edson, Clifford S., LD, Eng......Seattle
Edwards, Dorothy L, LA........Seattle
Edwards, Eleanor B, LD, FA......Seattle
Edwards, Elizabeth, LD, LA........Seattle
Edwards, Eugene, LA........Seattle
Edwards, George W, LD, For.........Seattle
Edwards, John W, LD, LA........Seattle
Edwards, Pauline, LD, LA........Seattle
Edwards, Robert, LA........Seattle
Edwards, Thelma L, UD, LA........Seattle
Effinger, Vivian, LD, FA........Seattle
Eng, Jack, UD, Bus........Seattle
Engel, Walter W, LD, Sci........Burlington
Eby, Roger 1., LD, Eng........Spokane
Eckert, Vira K, LD, LA......Vancouver, BC
Eckhart, Robert, UD, Ed........Seattle
Eckman, Boy L, UD, Bus........Seattle
Eckman, Richard, LD, LA........Seattle
Eckron, Louis B., Licii., Sci.....Seattle
Eckstein, H, Unc., Bus.------Mountain Home, Ida
Edades, Victorio C, UD, FA......Philippines
Edberg, Wendeni Earl, 1st Law....Bellingham
Eddy, Erna Smith, UD, LA........Seattle
Eddy, Esther Irene, LD, Bus......Seattle
Eddy, Richard H, LD, For.........Olympia
Edgell, Dwight, LD, Ed........Seattle
Edgell, Hurst, LD, Phar........Seattle
Edgers, Newton W, LD, EB.........Seattle
Edgerton, Ernest B, LD, Sc........Seattle
Edging, Carter W, LD, LA........Seattle
Edler, Olaf B, LD, FA............Mt Vernon
Edwards, Charles H........Lovilla, In
Edwards, Dorothy L, LA........Seattle
Edwardson, Douglas J., LA........Seattle
Edwards, Eleanor B, LD, FA......Seattle
Edwards, Elizabeth, LD, LA........Seattle
Edwards, Eugene, LA........Seattle
Edwards, George W, LD, For.........Seattle
Edwards, John W, LD, LA........Seattle
Edwards, Pauline, LD, LA........Seattle
Edwards, Robert, LA........Seattle
Edwards, Thelma L, UD, LA........Seattle
Eiffinger, Vivian, LD, FA........Seattle
Egelert, C, Bus........Seattle
Eikem, Helen, LD, Phar........Seattle
Ehrenberg, Eugene d'A Und. Phar: Ellensburg
Ehrenreich, Harold, UD, EB........Seattle
Ehrig, Herbert, LD, Bus........Seattle
Ehrig, Herbert, LD, Bus........Seattle
Ehrig, Dorothy O, UD, LA........Seattle
Ehrig, Louise, LD, LA........Seattle
Elsasser, George O, LD, LA........Seattle
Emmons, Arthur S, LD, Ed.......Stanwood
Emerson, Earl D, UD, BS......Tacoma
Emerson, Robert, ED, LA........Seattle
Edridge, Wesley R, LD, Bus........Seattle
Elford, Gertrude, UD, LA........Seattle
Elford, Margaret, UD, LA........Seattle
Elias, Frank L, LD, For........Seattle
Eliot, Artia, LD, LA........Seattle
Ellington, Eugene K, Brush Found
Elliot, Clarence R, UD, Bus........Kelsey
Elliot, Maxine B, LD, LA........Seattle
Elliot, Stanley, LD, LA........Seattle
Elliot, Louis M, LD, Sci........Seattle
Ellis, Coral E, LD, FA........Seattle
Ellis, Overton G Jr, LD, Bus......Tacoma
Ellis, Ruth Lee, LD, Ed........Twin Falls, Ida
Ellis, Samuel, Licii., Sci....Waterville
Ellis, Marion V, LD, FA........Bellingham
Ellis, Marcus Mar, LD, FA........Seattle
Ellis, William F, LD, Bus........Seattle
Ellsworth, Paul T, Grad........Seattle
Emmanuel, Ellen, LD, FA..........Seattle
Embree, Hazel E, Lcii., Phar.....Seattle
Emery, Marianne, LD, FA........Seattle
Emme, J Margaret, LD, LA........Seattle
Emmons, Harold W, Unc., Law, Portl., Or
Empson, Frederic W, Lcii., Eng......Port Townsend, WA
Eng, Jack, Fr Eng........Seattle
Engel, Leo J, LD, For........Jamestown, NY
Enger, Bernard, LD, LA........Tacoma
Enger, Oliva M, UD, LA........Seattle
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<th>Name</th>
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<td>Fraser, Male N, LD, FA</td>
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Lien, Laura B, UD, Bus...Bremerton
Lies, Margaret, UD, LA....Waterville
Lightleather, Henry A, LD, Ed...Seattle
Lightleather, Otto Lloyd, UD...Seattle
Lillis, Dan Custor, LD, ME...Tacoma
Lillie, Jack, LD, LA....Wenatchee
Lin, James King, LA, Ed...Spokane
Lincoln, Roland L, LD, EE...Seattle
Lind, Andrew William, LD, LA....Seattle
Lindberg, Martha, LD, LA...Seattle
Lindberg, Ruby C, UD, Bus...Seattle
Lindblom, Roy B, UD, EE...Seattle
Lippold, Jere, LD, LA...Seattle
Lindner, Isabel, LD, LA...Seattle
Lindquist, Irene, UD, LA...Hancock, Mich
Linn, Harold, LA, Ed...Seattle
Linvale, Glad F, UD, Bus...Seattle
Linsday, Mazie F, UD, Bus...Seattle
Linsday C Abbott, Unc, Law...Seattle
Linsley, Ruth Margaret, UD, LA...Seattle
Lingo, George C, LD, Eng...Seattle
Linn, Harold Adolphus, LD, LA...Seattle
Linn, Robert Donald, LD, Bus...Aberdeen
Lipman, H. Age, Desk, LA...Seattle
Lipshtz, Olivia, LD, LA...Portland, Or
Lipsey, Beth, LD, LA...Seattle
Lisberger, Glad F, Ed...Seattle
Liston, Edward John, LD, LA...Orilila
Liston, James G, UD, LA...Orilila
Little, Max B, LD, Bus...Scottsboro, Ind
Little, Dorothy Betty, LD, LA...Seattle
Little, Earle B, LD, Bus...Chelan
Little, G F, LD, Chs. N Westminster, BC
Little, Grafton, Alice, LD, La...Seattle
Little, Jane Elizabeth, LD, LA...Tacoma
Little, Marjorie, LD, Bus...Seattle
Loy, Frank S, UD, Bus...Seattle
Loomfield, Lena, Unc, FA...Seattle
Loomfield, Waldo, LD, Bus...Seattle
Lively, James W, LD, EE...Portland, Or
Lockard, Joe, LD, LA...Seattle
Lloyd, Helen Agatha, LD, FA...Seattle
Lloyd, Katherine, LD, ChE...Seattle
Lloyd, Margaret, LD, Everett
Loacker, W J, LD, LA...Seattle
Lockow, William, LD, EE...Maple Valley
Lohre, William A, Unc EE...Seattle
Locke, William, LA, Bus...Seattle
Lockey, Frank M, UD, Jour...Seattle
Lockhart, Bert, LD, Bus...Wapato
Locke, H E, LD, LA...Seattle
Ler, Edward Frank, UD, Bus...Seattle
Leever, Charles H, LD, Bus...Seattle
Levy, Frank S, UD, Bus...Seattle
Levin, Leo, LD, Bus...Everett
Lombard, Dean, LD, FA...Seattle
Lombardine, Herbert C, LD, Bus...Seattle
Lonegran, Threl, LD, LA...Seattle
Long, Arthur E, Spec...Kirkland
Long, James Glenn, Sp, Eng...Seattle
Loring, Macy, LD, AE...Seattle
Loy, Paul M, LD, Sci...Seattle
Loonin, Gee Anette, LD, LA...Spokane
Loos, Minerva U, Grad...Spokane
Lopex, Russell E, LD, Bus...Chicago, II
**Lopp, Dwight T, UD, FA...Seattle
Lopp, Irene, LD, FA...Seattle
Lore, James R, Grad, LA...Seattle
Lorah, Mrs Marian, LD, Sci...Seattle
Lorbeer, Norma E, UD, Sci...Seattle
Looy, Percy, LD, Bus...Everett
Loughery, Jack B, LD, Bus...Sedro-Woolley
Longbeh, Paul Egbert, LD, Bus...Ferndale
Love, John, LA, Educ...Seattle
Loving, Frank, Unc, Bus...Seattle
**Lovering, Thad Byron, LD, Sci...Seattle
Lovering, Winnie, Unc, Bus...Seattle
Low, Josephine, LD, Sci...Dayton
Low, Neille, UD, LA....Dayton
Low, Helen E, UD, LA....Dayton
Low, Grace Pearle, LD, LA...Mt Vernon
Lowery, Paul Russell, LD, EE...Wellington
Lowman, Vivien Guy, LD, LA...Seattle
Luceock, Harriett, Grad...Seattle
Lucas, Marian, LD, LA...Seattle
Lucas, Martha, UD, LA...Seattle
Lucas, Helen Mary, LD, EdEd...Bremerton
Lucker, John T, UD, Sci...Seattle
Ludwig, Ernest M, LD, LA...Sheridan
Ludwig, Frank H, UD, Bus...Walla Walla
Luft, Max, LD, ME...Bremerton
Lukens, Frederick, LD, Eng, Missoula, Mont
Lund, John G, LD, LA...Seattle
Lund, John V, LD, LA...Seattle
Lund, Walter William, UD, FA...Seattle
Lundberg, Vivian M, UD, LA...North Bend
Lundell, Berta F, UD, Bus...Tacoma
Lundell, Signe A, LD, LA...Issaugah
Lundstrom, Allan Winston, UD, EE...Yakima
Lungren, Robert E, For...Seattle
Lurie, David, LD, CHE...Seattle
Lurie, Manuel, LD, LA...Seattle
Lurie, Samuel, LD, LA...Seattle
Lut, Harold, UD, MR...Seattle
Luten, Miriam, UD, Sci...Seattle
Lutz, Edna Maud, LD, FA...Pt Townsend
Lybett, Ed, LD, Bus...Seattle
**Lybett, John Philip, LD, LA...Spokane
Lynck, Mrs Helen W, LD, FA...Seattle
Lynck, Isabel Robin, Sci...Yakima
**Lynck, Joseph H, Bus...Seattle
Lynch, Julia, LD, LA...Seattle
Lynch, Ros, UD, Sci...Seattle
Lynes, Margaret, LD, Bus...Seattle
Lyon, Henry A, UD, Jour...Seattle
Lyter, Dorothy, LD, LA...Seattle
Lyter, Helen, LD, LA...Seattle

MacAdams, William B, Unc, Bus...Seattle
MacArthur, Archibald A, UD, Jour...Seattle
MacAulay, Gordon A, LD, Bus...Seattle
MacClun, A Lewis, Grad...Seattle
MacDonald, Elizabeth, LD, FA...Seattle
MacDonald, G Eora, LD, LA...Seattle
MacDonald, Gordon, LD, LA...Seattle
MacDonald, Hulan, LD, LA...Seattle
MacDonald, Louisa, LD, LA...Seattle
MacDonald, Margaret Ruth, LD, Ed...Seattle
MacDonald, Sadie B, UD, Ed...Seattle
MacDonell, John, Bus...Seattle
Macfarlane, Mrs Carrie, LD, Sci...Seattle
Macfarlane, Don A, Grad...Seattle
Macfarlane, Margaret, LD, LA...Seattle
Macfarlane, Robert S, 3rd Law...Seattle
MacKenzie, John H, UD, Min N Westminster
MacKenzie, Robert G, LD, CS...Everett
MacKenzie, R L, UD, EB, Vancouver, BC
MacKinnon, Donald L, LD, Ed...Seattle
MacLean, Duncan G, LD, Eng...Seattle
MacLean, Wergan, WE, LA, LA, Min
MacLafferty, Taylor D, LD, ME...Tenne
e
MacNair, Jay, LD, Bus...Seattle
MacNaught, William, LA, BA...Seattle
MacNicol, Anna E, LA, LA...Seattle
MacNicol, Jane, LD, Phar...Seattle
MacPherson, Dorothy L, LD, FA...Seattle
MacPherson, Fraser K, UD, Bus...Seattle
Maas, Harold Anthony, LD, Bus...Seattle
**Macklin, George L, Bus...Seattle
Mackintosh, D Oline, LD, LA...Seattle
McAmber, Hazel, LD, Sci...Seattle
Madden, Ned D, LD, Bus...Seattle
Madsen, J Allen, LD, Bus...Seattle
Mage, Jack, LD, Sci...Seattle
Magill, Fulton, UD, Min...Tacoma
Magnus, William J, LD, Bus...Seattle
Nadez, Edwin T., LD, Eng. Olympia
Nagamine, Frank N., LD, FA... Seattle
Nagle, Paul, LD. Pharl. Seattle
Nagler, Russell A., UD. Sci.. Yakima
Nakahara, Shigeharu, B. LA.. Seattle
Nakamura, J., LD, LA... Seattle
Neal, W. Edwin, UD, Bus... Seattle
Neelond, Isabelle M., LA, LA... Portland, Or
Neville, John C., LD, LA... Seattle **Neely, J. Ralph, LD, LA... Spokane
Neely, Sue, UD. Sci.. Tacoma
Nee, Harry, LD, MB... Seattle
Nett, Anna Eicher, B. Sci... Seattle
Nett. Anna, LD, Bus... Seattle
Nett, Rebecca, LA, Bus... Seattle
Nett, Tilla, LD, Bus... Seattle
Neill, Delores, UD, LA... Seattle
Nelson, Evelyn F., LD, Sci... Seattle
Nelson, Irene M., UD, FA... Kalispell, Mont
Nelson, Arthur E., Sp. Sel... Seattle
Nelson, Arrld J., B, LA, LA... Seattle
Nettleton, Harle, Une, LA... Seattle
Nelson, Ned B., B... Seattle
Nelson, Vared, B... Seattle
Nebel, Earl, B, LA, Lake Park, Minn
Nelson, O V, Eng... Winlow
Nelson, A Malcolm, LD, Bus... Seattle
Nelson, Lue, LA, LA... Seattle
Nelson, Hilding, UD, Bus... Seattle
Nelson, James B., LD, Min... Seattle
Nelson, John, LA, LA... Seattle
Nelson, Lloyd E., LD, Bus... Seattle
Nelson, Millie J., LD, Bus... Seattle
Nelson, Reta, H, LD, BCh... Seattle
Nelson, Norma L., LA, Mt Vernon
Nelson, Norman M., LD, Fish... Pt Angeles
Nettleton, Algis, LA, LA, LA... Tacoma
Nettleton, Marie, LA, LA... Kirkland
Neubauer, Herbert F., UD, Pharl... Tacoma
Neumann, Russell A., LD, Eng... Seattle
Neville, Bush, LA, LA... Seattle
Neville, Laura May, LD, LA... Seattle
Newberry, Lora Mary, LD, LA... Seattle
Newberry, Earl P., LD, FA... Portland, Or
Newbury, Kirsten Larsen, Grad... Seattle
Newcomb, Richard J., Spec... Seattle
Newcomb, Muriel B., LD, FA... Olympia **Newell, Clifford O., LD, FA... Leavenworth
Newell, James B., LD, EE... Hoquiam
Newell, Laura, UD, Sci... Seattle
Newhouse, Myron, B, LA, LA... Seattle
Newman, Andrew W., Uc, LA... Elma
Newman, Anne, UD, LA... Everett
Newman, Walter L., LD, LA... Seattle
Newton, Mary H., LA, LA... Camp Lewis
Newton, Mary E, UNC, LA... Spokane **Newton, Ralph B., Bus... Seattle
Ney, Marie E., LD, Ed... Seattle
Noylan, Margaret, UD, FA... Elkade, Iowa
Nichols, Harold E., LD, Sci... Olympia
Nichols, Mary, LD, Ed... Seattle
Nichols, Ross, LD, EE... Seattle
Nicholson, Catherine, LD, FA... Seattle
Nicholson, Georgia, LD, Ed... Seattle
Nicholson, Les Roy, LD, Pharl... Ellensburg
Nicholson, Leo S, 1st Law... Yakima
Nicholson, Margie, LD, Sci... Seattle
Nicholson, Sinclair, B., LD, Bus... Seattle
Nicholson, William Otto, LD, Eng... Tacoma
Nicoll, Lucille P., LD, Bus... Monroe
Nicolet, John, LC, LA... Seattle
Nicolai, Florence, LD, Bus... Sunnydale
Nieder, Dave, LD, LA... Seattle
Nielson, Evelyn F., LD, Sci... Seattle
Nielson, Faith, LA, LA... Seattle
Nielson, William Alfred, UD, Bus... Spokane
Nelson, Jorgen, LD, LA... Nelson, Min
Nelson, Melville, LA, LA... Seattle
Nieratski, Joseph, 1st Law... Seattle
Nima, Helen B., LD, LA... Seattle
Nishinaka, John I., LD, For... Seattle
Nislo, Frank, LD, EE... Seattle
Nishivaki, Nobuo, UD, Jour... Japan
Nitschke, Paul H., LD, Sci... The Dalles, Or
Nix, Martha J., LD, LA... Seattle
Noble, Alvord D., LD, CE... Seattle **Noel, Lionel S., LD, EE... Snohomish
Nolan, Michael J., UD, CE... Seattle **Nolan, Vincent A., B, LA... Seattle
Noland, Frank H., Sp, Bus... Bremerton
Noll, Mark D., UD, Bus... Seattle
Noll, Pauline, UD, Sci... Seattle
Nollan, William, LD, LA... Kirkland
Nolte, Elizabeth, LD, Bus... Seattle
Nordahl, John G., LD, EE... Seattle
Nordale, Alton G., UD, Bus... Fairbanks, Ala
Nordale, Anita M., LD, Ed... Fairbanks, Ala
Nordholm, Olga E, UD, LA... Seattle
Nordlie, Glenn, B, LA, LA... Seattle
Nordstrom, Esther O, LD, FA... Seattle
Nordstrom, Everett, UD, Bus... Seattle
Norte, Mary E, LA... Seattle
Norquist, Melvin A, UD, Bus... Seattle
Norris, Ralph H., LD, Bus... Seattle
Northfield, Walter D., UD, Bus... Seattle
Norton, Robert, M, LA, LA... Seattle
Norton, Theodore E, LD, LA... Tacoma
Norway, Charis Julia, LD, FA... Seattle
Norwood, Helen E, LA... Seattle
-Novkin, James B, UN, MB... Russia
Novlan, Emma Patricia, LD, EM... Seattle
Novak, Helen M, UD, LA... Seattle
Novell, Frances, LD, LA... Seattle
Nudsen, Harry E, UD, Bus... Yakima
Nunno, Minoru, LD, EE... Bellevue
Nusbaum, Dean A., For... Seattle
Nuli, J Edward, Jr, LD, LA... Seattle
Nutley, Cyril Arthur, LD, Bus... Seattle
Nylin, Clarence Alfred, UD, Bus... Seattle
Nygren, Erik, UD, Eng... Seattle
Nygulst, Marie R, UD, Pharl... Seattle
Oakes, Ruth Elsie, UD, Sci... Seattle
Oakley, Mary E, Grad... Seattle
Oack, Dan, LD, FA... Seattle
Oblach, Mario G, Fr, Eng... Philippines
O'Brien, Edith, LD, LA, LA... Seattle
O'Brien, Wayne, LD, Bus... Seattle
O'Brien, John Jennings, UNC, Law... Seattle
O'Callaghan, Gerard V, LA, LA... Seattle
Ochs, Martha B, LD, LA... Seattle
O'Connell, Charles W, UD, Bus... Seattle
O'Sullivan, Thomas A, For... Seattle
O'Connor, Clinton Jay, LD, Bus... Tacoma
O'Conner, Walter B, LD, Bus... Seattle
Odagard, Peter H, LD, LA... Seattle
Odagard, Paul N, LD, CD, SE... Seattle
Odagard, Peter H, UD, LA... Seattle
Odagard, Thomas, LD, LA... Seattle
O'Donnell, Helen F, UN, Bus... Pt Angeles
Oertel, Anna Mary, LD, FA... Seattle
Ogata, Kokichi, Grad... Japan **O'Heron, Thomas, EE... Seattle
Okajima, Thelma S, Un, Ed... Seattle
Okazaki, Iwao, LA, LA... Seattle **O'Keeffe, John Bayard, Bus... Boise Id
Olcott, Virginia, B, LA, LA... Seattle
Olmstead, Estel, LD, FA... Enterprise, Or
Olsen, Air E, LD, Bus... Redmond
Olsen, Ames E, LA, LA... Seattle
Olsen, Blanche A, LD, Bus... Seattle **Olsen, Carl M, LD, CE... Stanwood
Peterson, John Albert, LD, ME, Spangle
Peterson, Louis C, LD, Bus, Spangle
Peterson, Alvin A, Unc, Seattle
Peterson, Agnes C, UD, LA, Moscow, Ida
Peterson, Carl H, LD, Bus, Hoguelan
Peterson, Carrie H, UD, Ed, Wardner, Ida
Peterson, Grace H, Sp, Ed, Seattle
Peterson, Howard E, WW, Walla Walla
Peterson, Howard J, LD, ES, Sunnyside
Peterson, Inez H, UD, LA, Seattle
Peterson, Irene D, LA, Seattle
Peterson, E Jennings, LD, LA, Seattle
Peterson, Karl, Spec, Seattle
Peterson, Katherine W, LD, FA, Spokane
Peterson, La Verne R, LD, Eng, Seattle
**Peterson, Loren Allen, LD, Bus, Seattle
Peterson, Ole T, Unc, Ed, Seattle
Peterson, Richard F, LD, Bus, Tacoma
Peterson, Thomas H, LD, FA, Granger
Peterson, Walter R, UD, Sci, Pt Blakely
Peterson, Wendell F, LD, Bus, Seattle
Peterson, A William, LD, Bus, Clarkston
Peterson, William Payson, LD, Bus, Alpine
Peterson, William Payson, LD, Bus, Alpine
Peterson, Lucas A, LD, Whidbey
Petrie, James, LD, Eng, Seattle
Petrie, Roy A, LD, Bus, Clarkston
Pettit, Helen, LD, Sci, Seattle
Pettit, Henry M, Unc, Seattle
Pettit, Ruth, UD, LA, Kent
Pettyjohn, Carrie M, UD, Sci, Prescott
Pfeifer, Edward Allen, Seattle
Pfeifer, Philip F, UD, Sci, Seattle
Philp, Ellen, LD, LA, Seattle
Philp, Beth, LD, Sci, Seattle
Philp, Howard R, LD, Eng, Tacoma
Philp, John O, UD, LA, Seattle
Philp, Philip M, UD, Bus, Yakima
Philp, Lydia H, LA, WL, Westminster, Del
Philp, Richard T, UD, Bus, Seattle
Philp, Constance, LD, FA, Seattle
Philp, Harry J, Unc, Eng, Seattle
Philp, Herbert, LD, Eng, Seattle
Philp, J Clarence, LD, LA, Almira
Philp, John W, LD, Phar, Hadlock
Philp, Myra, LD, LA, Seattle
Philp, Walter T, LD, LA, Tacoma
Philps, Guy F, Unc, LA, Four Lakes
Fiatt, Genovevo M, UD, LA, Seattle
Pioche, Good D, Unc, Eng, Seattle
Pickard, W Burt, LD, Bus, Seattle
Pickett, May Belle, Unc, LA, Mt Vernon
Pichon, Marjorie J, UD, FA, Seattle
Pierce, Aleena E, UD, Ed, Seattle
Pierce, Clarence W, 1st Law, Seattle
Pierce, Fred R, 2nd Law, Sacramento, Cal
Pierce, Dorothy A, LD, LA, Seattle
Pierce, Gordon, LD, Bus, Seattle
Pierce, Robert O, Unc, Bus, Seattle
Pierce, Warren D, UD, Bus, Seattle
Piercy, Richard H, LD, Bus, Seattle
Piggot, Stephen R, LD, Min, Seattle
Pinck, Edward A, UD, Eng, Roseland, B.C
Pinkerton, Ralph W, LD, LA, Tacoma
Pinkham, Ada D, Sp, LA, Seattle
Pitcar, Helen D, UD, FA, Pt Madison
Pitcher, Susanne U, LA, Lattara
Pittman, William H, UD, LA, Latah
Pitts, Edna C, LD, LA, Seattle
Pitts, Grace I, UD, Bus, Seattle
**Pitzer, Carl A, UD, FA, Tacoma
Place, L Howard, LD, For, Tacoma
Plante, Margaret, LD, Bus, Seattle
Platt, Ruth E, LD, Seattle
Platier, Charles G, LD, Bus, Seattle
Pilcon, Gladys May, LD, LA, Seattle
Pilipowska, Jennifer, London
Pochert, Arthur Dean, UD, Phar, Tacoma
Pole, Gordon R, UD, ChE, Tacoma

Poland, Jean, LD, LA, Seattle
Pollock, Barbara, LD, LA, Seattle
Pollock, Maxwell, LD, BE, Seattle
Polom, DeVere Arthur, LD, LA, Chehalis
Pond, Elbridge G, LD, Bus, Seattle
Pond, Elizabeth B, UD, LA, Seattle
Ponder, Russell Lee, LD, LA, Chehalis
Pool, William Franklin, UD, LA, Seattle
Pool, Bonnie L, LD, LA, Seattle
Pool, Florence, LD, Ed, Seattle
**Poole, Frank B, CE, Spokane
Polston, Frederick A, UD, LA, Seattle
Pope, Augustus R, UD, ME, Seattle
Pope, Edward W, UD, Bus, Seattle
Porsch, Ethelhurt A, LD, Bus, Roy
Porter, Barton F, LD, Bus, Thorp
Porter, Dott, UD, SCI, Seattle
Porter, Edith M, LD, FA, Seattle
Porter, Marie, LD, Ed, Seattle
Porter, Mary E, LD, FA, Seattle
Portmann, Frieda, LD, LA, Tacoma
Posadas, Saturnino E, LD, Phar, Philippines
Post, John F, Grad, Spokane
Potratz, Helen, Unc, SCI, Seattle
Potter, Alden, LA, ENG, Ridgefield
Potter, Claude A, UD, ME, Ridgefield
Potter, Mel F, LD, Bus, Seattle
Potter, Paul S, LD, Min, Ovington
Potter, Ruth A, LD, LA, Seattle
Potter, Willis A, LD, LA, Kalama
**Powell, Annie T, Nur, Roslyn
Powell, Charles L, LA, Seattle
Powell, Emmagen, LD, LA, Chehalis
Powell, Frederick Jr, UD, ChE, Tacoma
Powell, Josephine, LD, LA, Chehalis
Powell, Mary Day, UD, Ed, Seattle
Powders, Anna M, UD, LA, Seattle
Powders, Frances F, UD, LA, Tacoma
Powders, Frank W, Bus, Seattle
**Powrs, Harry R, FA, Seattle
Powrs, Marie K, UD, LA, Seattle
Powley, Louise W, UD, SCI, Seattle
Powley, Vernus M, LD, LA, Seattle
Poyneer, Almeda, LD, LA, Everett
**Pozzie, Jerry V, Bus, Seattle
Prager, William A, LD, LA, Seattle
Pratt, Helen Van Ness, Grad, Seattle
Pratt, Mary Sanders, Grad, Seattle
Pratt, Reginald, UD, ME, Spokane
Primmerman, Gertrude E, LD, Fort Prescott, Maujin, LA, Seattle
Presley, Grace, LD, FA, Seattle
**Preuss, John E, FA, Seattle
Price, Arthur F, LD, For, Duncan, B C
Price, E Fay, UD, LA, FA, Milton, Or
Price, Harry J, LD, ES, Miles City, Mont
**Price, Miles, Bus, Seattle
Price, Ruth G, UD, LA, Seattle
Pribe, Lloyd H, LD, BE, Renton
Pignon, Robert H, LD, Bus, Seattle
Priest, Constance E, LD, Bus, Seattle
Pritchard, J Gordon, Grad, Seattle
Pritchard, Stanley F, LD, Bus, Bryn Mawr
Pritchett, Charles S, LD, Sci, Free Water, Or
Protsman, George, UD, Law, Grays Harbor
Prussman, Will, LD, Eng, Seattle
Puckett, Carl E, LD, BE, Kent
Purcell, J William, Seattle
Purdy, Eugene H, LD, ChE, Seattle
Putman, Lawrence E, UD, Min, Window
Pumphrey, Lena, LD, FA, Oswego, Or
Pyle, Mark, UD, BE, Wenatchee

Quanstrom, Ellen M, LD, Bus, Seattle
Quass, Harry Peter, LD, Phar, Spokane
Quigle, Helen, LD, LA, Seattle
Quigley, Clarence F, LD, Bus, Seattle
Quinones, Dionisio I, LD, ChE, Philippines
Quinlanan, Quintin L, LD, Sci, Everett
Radmaker, Lee A, LD, Sci......Tacoma
Rader, Bernard H, UD, Bus......Seattle
Rader, Martha, LD, Sci......Walla Walla
Rader, Melvin M, LD, LA......Walla Walla
Radford, Zilpha P, LD, FA......Seattle
Rafferty, Wilma, LD, Ed......Seattle
Rahkopf, Lucile, LD, LA......Seattle
Rainey, Homer E, LD, Bus......Seattle
Rainey Homer E, LD, Sci......Wenatchee
Ramm, Aubrey G, LD, EE......Seattle
Ramsey, James S, LD, Bus......Ellensburg
**Ramsey, Edward O, Bus......Boise, Ida
Ramey, Gertrude, LD, Bus, Sandpoint, Ida
Ramey, Mary, LD, Sci......Seattle
Ramstad, Alvin C, LD, Bus......Everett
Ramthun, Lucile L, UD, Bus......Chehalis
Randall, Downing B, LD, Sci......Seattle
Randall, Dudley E, LD, Bus......Seattle
Rank, Carroll P, UD, Bus......Cashmere
Rankin, James H Jr, LD, Bus......Seattle
Rankin, Park W, LD, CE......Takoma
Ray, Edna M, LD, Bus......Centralia
Raper, Rubin W, LD, ME......Seattle
Rasmussen, Fred N, LD, EE......Seattle
Rasmussen, Gwladys M, LD, LA......Spokane
**Ratcliffe, Vernon E, Unc, Bus......Seattle
Rath, Martha A, UD, Sci......Seattle
Rathburn, John H, LD, EE......Bellevue
Ray, Ruth, LD, FA......Fer, WA
Ray, James E, LD, EE......Seattle
Raymond, E M, LD, Sci......Hannibal, Mo
Raymond, William, LD, Bus......Bellingham
Ray, Russell Molville, Unc, Eng......Bellingham
Read, Marigold, LD, Bus......Hoquiam
Read, William A, Spec......Seattle
Reap, Genevieve, UD, LA......Tacoma
Reau, Gladys M, LD, LA......Spokane
Recart, Edward......Seattle
Recart, Horacio, Jr, UD, For......Chile
Reddy, Eileen A, LD, LA......Medford, Or
Redfield, Ben, LD, Bus......Spokane
Redick, Harry Horton, Spec......Seattle
Redington, Bernice O, LD, FA......Seattle
Redmon, Dorothy B, LD, FA......Yakima
Redmond, Harold V, UD, Min......Seattle
Redpath, Harry S, 1st Law......Seattle
Redpath, Lindley E, LD, Bus......Seattle
Reed, Donald L, LD, Eng......Centralia
Reed, Earl E, Spec......Seattle
Reed, Elizabeth J, LD, Unc......Seattle
Reed, Henry D, LD, Ph......Halley, Ida
Reed, Jennie M, Ed......Tacoma
Reed, Florence, DU, FA......Seattle
Reed, Russell Norman, Unc, Bus......Seattle
Reeder, Ardis Harold, LD, Bus......Tacoma
Reedy, Frances M, UD, Sci......Tacoma
Reeke, Richard D, LD, Phar......Seattle
**Reese, James B, Bus......Kirkland
**Reese, Richard H, Bus......Concrete
Reese, Thelma, UD, Sci......Kirkland
Reeves, Harold J, Unc, Bus......Portland, Or
Regan, Frank, LD, For......Boise, Ida
Regan, Willard F, LD, Bus......Boise, Ida
Reichert, Carlton G, LD, Bus......Seattle
Reid, Beatrice, LD, LA......Seattle
Reid, Crawford, LD, EE......Seattle
Reid, Elizabeth J, LD, LA......Seattle
Reid, Florence E, LD, Bus......Govan
Reineke, Herbert R, LD, LA......Vancouver
Reiner, Lillian R, Unc, LA......Worcester, Mass
Reslg, Rhea L, FA......Seattle
Reither, Bernard, LD, LA......Seattle
Reif, Eugenia, LD, FA......Seattle
Rendugas, Eunice E, LD, Bus......Seattle
Remington, Cecil G, LD, Bus......Selah
Remley, Miriam, UD, LA......Dryden
Rene, Emily, Jr, UD, Bus......Seattle
Renf, Harold E, LD, SE......Seattle
Renf, Beatrice, LD, LA......Seattle
Renhs, Harold B, LD, Bus......Spokane
Reese, Eugene P, LD, CE......Philippines
Revelle, Helen, LD, LA......Seattle
Reynolds, Alice L, LD, FA......Portland, Or
**Reynolds, Burton M, UD, Min......Seattle
Reynolds, Dorothea S, LD, LA......Seattle
Reynolds, Elliott, 1st Law......Seattle
Reynolds, Myron E, LD, Sci......Seattle
Reynolds, Sewall L, Fr, Eng......Seattle
Rhinehart, Orna L, Unc, Sci......Seattle
Rhodes, Gertrude, LD, Bus......Yakima
Rhodes, Leonard, LD, Phar......Seattle
Rhodes, Ruth E, LD, Sci......Seattle
Rhodes, William, Unc, Bus......Seattle
Rice, Dorothy E, LD, FA......Seattle
Rice, Mary B, LD, Sci......Prosser
Rice, Philip Richard, UD, Eng......Walla Walla
Rich, Estelle May, Grad......Seattle
Richards, Bradford A, UD, LA......Mt Vernon
Richards, Catherine, UD, LA......Spokane
Richards, Robert E, LD, Bus......Tacoma
Richards, William G, Unc, Bus......Prosser
Richardson, Dallas, Unc, LA......Seattle
Richardson, Elizabeth C, UD, LA......Yakima
Richardson, Frances, LD, MD, Cheyelah
**Ritchie, Clarence E, Unc, Bus......Centralia
Ritchie, Elizabeth L, LD, LA......Salt Lake, UT
Ritter, John Edward, LD, For......Republic
Ritz, Arthur B, Lc, LA......Seattle
Rivera, Andres D, LD, ChE......Philippines
Robb, Alfred, LD, LA......Seattle
Robbins, Margaret A, LD, LA......Seattle
Robbins, Frances R, LD, LA......Seattle
Roberts, Helen L, LA......Seattle
Roberts, James D, LD, For......Tacoma
Roberts, John T, UD, Chi......Seattle
Roberts, Katherine E, UD, LA......Gooding, Ida
Roberts, Kenneth B, LD, Min......Seattle
Roberts, Margaret, LD, LA......Seattle
Roberts, Milnora, Grad......Seattle
**Robertson, Colin W, LD, Bus......Seattle
Robertson, Howard F, LD, Sci......Montesano
**Robertson, James Jr, Eng......Seattle
Robinson, Charles H, LD, Bus......Seattle
Robinson, Frank D, LD, Bus......Sumner
Robinson, H Gerald, LD, EE......Seattle
Robinson, James W, LD, Eng......Ireland
Robinson, Margaret, LD, Bus......Centralia
Robinson, Morton, Unc......Seattle
Robinson, Myrtle, LD......Seattle
Robinson, Ruth J, LD, Ed......Seattle
Robinson, Ruth M, LD, LA......Seattle
Robinson, Vida H, LD, Bus......Seattle
Robinson, K Una, UD, FA......Edmonds
Rochester, James M, LD, Bus......Nooksack
Rockwell, J M, Jr, UD, TD......Centralia
Robie, James A, Jr, LD, Bus......Seattle
Roe, Arthur O, UD, ME......Everett
Ross, George
Roper, Marlon
Rooney, Ray
Rohweltz, David
Rognon, Allan
Roegner, Kenneth A. 2nd
Both, John
Roth, George
Boss, Ken
Rosen, Benjamin
Rosebaugh, Michael
Rose, Elwood
Roo, Dorothy Bates, LD, LA
Bremerton
Roan, William, LD, Min.
Rooney, Ward, William, LD, LA
Rood, Selden
Rook, Edna E, LD, Sci.
Roop, Milford W, UD, Ed.
Roper, Marion Wesley, UD, Ed., Kettle Falls
Roscoe, B Theodore, LD, Eng., Edmonds
Rosen, Abe, 2nd
Rosen, Elise E, UD, Bus.
Rogers, Anna Rita, RN, Seattle
Rosenberg, Hoda A, LD, FA
Rook, William H, LD, EE.
Ross, Bruce Robert, LD, For., Edmonds
Ross, Forrest, LD, Wenatchee, T.
Ross, Edward Allen Jr, UD, EE.
Ross, George W, LD, Spokane
Ross, Gordon B, UD, Bus.
Ross, Harry L, LD, EE.
Ross, Helen R, Unc. Ed.
Ross, Kenneth L, LD, Bus.
Ross, Robert, William, LD, LA
Rothwell, Cyril M, LD, Phar.
Rothwell, Martha D, Nur.
Skeena, Grand Forks, BC
Rourke, B Karl, LD, ChE.
Rowlands, Thomas M, Spec. Eng., Victoria, BC
Rowntree, B Henry, LD, Bus.
Royal, Phillip N, UD, ChE.
Bremerton
Roy, Ruby, Grad.
Royer, Helen, LD, Ed.
Rohn, Barbara
Rucker, Gladys, LD, Sci.
Rudberg, Clayton S, LD, Bus.
Rudolph, Evangeline, LD, Sci.
Rudolph, Lillian, LD, Bus.
Rufner, Edmund, Unc. FA.
Rumberger, George H, UD, Min.
Rummel, Bartlett, 1st Law.
Tacoma
Runclman, George, LD, CE.
Caldwell, Ida
Running, Gladys May, LD, Sci.
Tacoma
Rupe, G Elizabeth, UD, Ed.
Seattle
Rush, Elizabeth, LD, LA.
Spokane
Russell, Alvia D, LD, EE.
Govan
Russell, Edith, LD, FA.
Seattle
Russell, Florence M, LD, LA.
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Russell, Josephine V, LD, Bus.
Seattle
Russell, Marvin, LD, Bus.
Walla Walla
Ruschen, Ruth E, LD, A.
Seattle
Rust, Camel Rust, LD, Sci.
Yakima
Rutherford, Tramell, LD, LA.
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Spokane
Rutledge, Frederick C, LD, Bus.
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Ryan, Homer N, LD, LA.
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Ryan, Marie Arline, LD, FA.
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Ryan, Robert, LD, Bus., Or.
Bychard, Clayton H, UD, Bus., Hugolama
Ryder, Maude, LD, Ed.
Auburn
Ryer, Grant H, LD, ChE.
Denver, Colo
Kry, John C, LD, Phsr.
Arlington
Ryaning, Lars E, Grad.
Tacoma
Sakuma, Yasuharu, LD, LA.
Japan
Sallabury, Frank S, Grad.
Beaton
Salladay, Ruth, UD, FA.
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Salnikov, John S, Unc.
Seattle
Salter, Esther A, LD, Sci.
Pt. Blakely
**Saltmann, George T, Bus.
Seattle
Sammis, Lewis, UD, Bus.
Seattle
Samuelson, Byron A, Unc. Ed.
Pt Roberts
Sanborn, Frederick, UD, Bus., Oakland, Cal
Philippines
Sandberg, Frederick R, LD, BS.
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Sanders, Carrie, LD, LA.
Tukwila
Sanders, Elva, LD, Bus.
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Sanders, John C, LD, EES.
Ephrata
Sanders, Leslie, LD, ED.
Victoria, B C
Sanders, Raymond G, LD, ChE.
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Sandstrom, David H, LD, LA.
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Sandusky, Lawrence, LD, LA.
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Sangrey, Emma, LD, Bus.
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Sarf, John, LD, LA.
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Sater, Julius, Grad.
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Sater, Gertrude White Horse.
Hogunan
Sather, Olen, UD, LA.
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Saunders, Eugene D, LD, LA.
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Saunders, Maye, UD, Ed.
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Saunders, Walton, LD, Bus.
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Savery, William Jr, LD, LA.
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Sayles, Frank W, UD, Bus.
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Auburn
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Simn, Helen M, LA, LD. Seattle
Sinclair, Robert E, LD, Bus. Seattle
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Sister, Mary Leonella, UD, SCi. Seattle
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Sollen, Telestorf G, LD, SC. Philippines
Solomon, Hyman, LD, SC. Seattle
Somerville, Robert, LD, Bus. Centralia
Sommer, Helen, LD, LA. Seattle
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Sorensen, Andrew, Unc, Bus. Ellensburg
Sorensen, Gladys M, LA. Seattle
Sorensen, Harry D, UD, Ed. Nookaack
Soth, Tem, LD, LA. Kennewick
Sould, Kenneth E, LD, ME. Seattle
Southard, John H, BA. Seattle
Southwick, Charles U, LD, LA. Chelan
Southwick, Glen H, UD, Bus. Chelan
Southwick, Morgan, LD, Eng. Seattle
Sowle, Jack, LD, Min. Seattle
Sparling, George W, Jr, Eng. Seattle
Sparling, Margaret, LD, Bus. Houghton
Spaulding, Daniel W, LD, Bus. Ellensburg
**Spaulding, David L, Unc, Law Seattle
Spear, Mildred W, LA. Seattle
Spelt, Betty C, LD, SCi. Seattle
Spence, Everett M, LD, Phar. Seattle
Spencer, Frank G, UD, Bus. Seattle
Spencer, Ralph W, UD, CE. Seattle
Spencer, Wm Amsden, Grad. Seattle
Sperling, Otto F, LD, SC. Spokane
Spray, Emily F, LA. Seattle
Spickard, Helen Florence, UD, SCi. Seattle
Spieske, Winnie, UD, LA. Seattle
Spiker, Robert F, UD, LA. Seattle
Spragge, Joan H, LD, FA. Seattle
Sprague, A Milton, LD, Che. Seattle
**Sprattin, Allen, Unc, Law. Seattle
Sprattembach, Berta, LD, FA. Seattle
Springer, Hestell, LD, SCi. Tacoma
Springer, Irene A, UD, LA. Olympia
Spruhs, Fred W, LD, For. Medford, Ore
Squire, Sloane, LA, SCi. Seattle
Stacy, Virginia, LD, LA. Lewiston, Ida
Starkel, Dorothy, UD, PHar. Seattle
**Stallard, Tully K, UD, Bus. Greenacres
Stallings, Adeline M, UD, LA. Seattle
Stamm, Claus H, UD, Eng. Bumers Ferry, Ida
Standiford, Irma, LA. Spokane
Stanciffle, Joseph B, LD, LA. Seattle
Standard, Alta Virginia, LD, FA. Seattle
Standing, Frank H, LD, LA. Seattle
Stanfield, Ralph B, LD, LA. Seattle
Stangland, Bess, UD, Jour. Seattle
**Stanley, Claude H, Bus. Seattle
Stanley, Emery E, LD. Seattle
Stansbary, Douglas C, LD, Eng. Seattle
Stanton, Campion, LD, ES. Seattle
Stanton, Margaret, LD, LA. Seattle
Starin, Edward, LD, LA. Seattle
Stark, Eugene E, LD, LA. Seattle
St Arnold, Nancy, LA. Tacoma
**Starr, Alva G, UD, LA. Waldport, Or
Starr, Beatrice E, 3d Law......Seattle
Staten, Francis L, LD, Bus......Seattle
Staten, Mildred, LD, Bus......Seattle
Stedman, Lewis D, Unc, Law......Seattle
Steele, Vera, L, Sci......Seattle
Steele, Helen, LD, LA......Seattle
Steele, James H, LD, CE......Renton
Steele, Katharine J, LD, PA, Cedar Rapids, IA
Steele, Susie Frances, UD, Sci......Seattle
Steelman, Eleanor, UD, LA......Seattle
Steere, M Esther, LD, Sci......Kalspehl, MT
Steinberg, Louis B, Russia
Steindorf, Eric C, 1st Law......Seattle
Stelling, Herman J, Unc, Bus......Puyallup
Stells, Carolyn, LA, LD......Seattle
Sten, Fred R, UD, Ed......Seattle
Stevens, Claude W, LD, Bus......Seattle
Stevens, Richard F, LD, Ed......Seattle
Stevens, Robert H, Eng......Seattle
Stevenson, Robert J, LD, Bus......Seattle
Stewart, Chesterfield, LD, Min......Seattle
Stewart, Edgar E, Jr, LA, LA......Seattle
Stewart, Glenn R, Bus, Elberon
Stewart, Max D, LD, LA......Seattle
Stewart, Oliver, LD, EE......Seattle
Stewart, Philip E, Bus......Seattle
Stewart, Ralph B, UD, Sci......Seattle
St Germain, Garnette, LD, LA......Seattle
Stenlund, May E, LD......Bellingham
**Stickney, Guy C, ME......Bothell
Stiles, Russell M, LD, Phar......Seattle
Stines, Rivilla Leroy, PA......Seattle
Stirling, Thomas B, LD, LA......Walla Walla
St John, Bernice, LD, LA......Chachal
**Stocking, Bernard A, Bus......Seattle
Stoneman, Fida, UD, Sci......Seattle
Stone, Caleb S Jr, UD, Sci......Seattle
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Stoner, Howard, LD, Bus......Tacoma
Stone, Samuel Eollis, Sp, LA......Seattle
Stonehouse, Edgar I, LD, Bus......Everett
Stock, Helen Mary, LD, Phar......Seattle
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Storm, Kathleen, LD, LA......Seattle
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Storrs, Richard Cunningham, LD, Eng, Seattle
Stovel, Margaret A, LD, LA......Seattle
Stover, Merrill M, LD, EE......Seattle
Stover, Miriam C, LD, Ed......Seattle
Strachan, Gertrude, LD, FA......Garfield
Strand, Erling, LD, LA......Petersburg, Alaska
Strand, Robert, LD, Bus......Seattle
Strandberg, Herbert, LD, EB......Seattle
Strate, Johanna, Grad......Seattle
Stuck, Howard L, LD, Bus......Seattle
Streeter, Gertrude Irene, Grad......Seattle
Strickland, N R, LD, Sci., Middlesex, N Y
**Striker, William C, Jour......Kelvin, N D
Strite, Daniel Jr, Sp, For, Bay City, Or
Strieck, Paul, LD, Sci......Seattle
Strong, Arthur B, Unc, LA......Seattle
Stroth, Maria, LD, LA......Seattle
Strong, Gladys D, LD, LA......Seattle
Stroud, Ruth, LD, LA......Seattle
Strourd, Warren L, LD, Bus......Sheridan, Wyo
Stroud, Rollin C, LD, For......Seattle
**Strum, Eileen A, Eng......Seattle
**Stuart, Frank C, Bus......Seattle
Stuart, Margaretta, UD, Ed......Eileenburg
Sturkand, Isabel, LD, Sci......Seattle
Sturgis, Alice E, LD, Ed......Seattle
Surgin, Yurika, Yeonsu, LD, LA......Japan
Sullivan, Marie, LD, Bus......Seattle
Sullivan, John D, Grad......Seattle
Sullivan, John E, UD, Sci......Seattle
Sullivan, John K, LD, Bus......Renton, WA
Sullivan, Richard F, Grad......Seattle
Sulz, Albert, LD, Min......Seattle
**Summersett, Peter, Unc, Law, Chehalis
Summy, Archibald F, UD, Bus......Seattle
Sundquist, Leona M, Grad......Mt Vernon
Sueme, Arnie J, LD, Fish......Itwaco
Sutter, Harold W., Jr, Bus......Seattle
Sutton, Alice Dolores, LD, LA......Seattle
Sutton, Phoebe Jane, LD, Sci......Seattle
**Swiftor, Henry E, Bus......Seattle
Swalle, George E, LD, Bus, National City, Cal
Swain, Kenneth H, UD, Bus......Seattle
Swain, Olive, UD, Sci......Tacoma
Swaldwell, William, LA, LA......Seattle
Swan, Eleanor J, Grad......Seattle
Swan, Helen, LD, LA......Seattle
Swanberg, Any, LD, Bus......Seattle
Swanberg, Roy, LD, Min......Seattle
Swanberg, Ruby, LD, Ed......Seattle
Swanson, Charles, LD, Bus......Seattle
Swanson, Ruby F, UD, LA......Seattle
Swanson, Ruth E, LD, LA......Tacoma
Swanson, Verne J, LD, EE......Seattle
Swartz, Katherine W, LA......Raymond
Sweet, Frank E, LD, Bus......Seattle
Sweet, Earl, UD, Bus......Seattle
Swett, Fred C, LD, LA......Seattle
Sweet, Marion L, LD, FA......Olympia
Swegle, Walter H, UD, ME......Seattle
Swenson, Elaine I, LD, LA......Seattle
Swerts, Victor, LA......Seattle
Swesy, Mildred, LD, LA......Sumner
Swift, Lester J, LD, Phar......Hoquiam
Swingle, Talmadge, LD, Bus......Seattle
Sykes, Iris Honor, LD, FA......Tacoma
**Szymowiak, E, For......Milwaukee, Ws

Tachell, Maud, UD, FA......Renton
Taft, Alice W, UD, LA......Seattle
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Taft, John G, LD, Bus......Seattle
Taft, Maurice, LD, Sci......Seattle
Taggart, Robert Jr, LD, Bus......Seattle
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**Talbot, Everett C, Bus......Seattle
Talbot, Mira, LD, LA......Seattle
Talbott, Mary M, LD, LA......Seattle
Talmadge, Walter H, LD, MD, Seattle
Tamei, Florence, UD, For......Philippines
Tangney, Emmett, LD, Bus......Seattle
Tanner, Benjamin F, LD, Bus......Seattle
Tanner, Mary C, LD, Ed......Seattle
Tanner, Wm Max, Unc, Eng......Seattle
Tapp, Kenneth H, LD, For......Bremerton
Tapp, Roy, LA, Phar......Bremerton
Tarter, Clyde S, UD, Sci......Seattle
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Tatum, Fernelly A, Grad......Tacoma
Taylor, Bertrand, UD, Jour......Sumner
Taylor, Colin A, UD, EE......Seattle
Taylor, B Henrietta, UD, LA......Tacoma
Taylor, Irene, LD, Bus......Seattle
Taylor, Martha A, LD, LA......Duluth, Minn
Taylor, Nancy E, LD, LA......Seattle
Taylor, Ray, LD, For, Bloomfield, NJ
Taylor, J E Rex, UD, Phar......Seattle
Taylor, Robert, LD, Bus......Seattle
Taylor, Wm D G, UD, FA......Tacoma
Taylor, Wm, J, Jr, For......Seattle
Taylor, W Seth, Unc, Bus......Seattle
<table>
<thead>
<tr>
<th>Register of Students</th>
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<tr>
<td>Tec-Garden, Chester U, JD, Jour</td>
<td>Seattle</td>
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<tr>
<td>Teigland, Nellie May, UD, Ed</td>
<td>Tacoma</td>
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<td>Teig, Clifford L, LD, CE</td>
<td>Seattle</td>
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<td>Teig, Ralph, LD, BE</td>
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<td>Tejada, Emiliana A, 1st Law</td>
<td>Philippines</td>
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<td>Tendick, Lloyd B, Grad</td>
<td>Fargo, N D</td>
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<td>Terry, Margaret L, UD, LA</td>
<td>Louisville, Ky</td>
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<td>Tew, Lewis T, LD, Bus</td>
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<td>Thews, John Milton, LD, Bus</td>
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<td>Thayer, Jeannette, LD, LA</td>
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<td>Thelault, Albert, LD, Bus</td>
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<td>Thode, Elizabeth, L, Bus</td>
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<td>Thomas, Charlotte, LD, FA</td>
<td>Denver, Colo</td>
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<td>Thomas, Dwight, LD, Bus</td>
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<td>Thomas, Frank E, LD</td>
<td>Hillsbarg</td>
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<td>Thomas, Irene, UD, LA</td>
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<td>Thomas, Janice, LD, LA</td>
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<td>Summerland</td>
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<td>Thomas, Rose Pac, L</td>
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<td>Thomas, Vera, LD, Sci</td>
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<td>Thome, Joseph, Unc, LA</td>
<td>Granger</td>
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<td>Thome, Matthew W, LD, LA</td>
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<td>Thomas, Elia, Unc, Ed. Junction City, Kans</td>
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<td>Thompson, Albert L, LD, Sci</td>
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Uyesawa, K. Japan

Valencie, Victoria, LD, Phar. Roslyn
Valentine, Albert L Jr, UD, Bus. Seattle
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Valentie, Leonardo, Unc, ChE. Philippines
**Van Arsdol, M D, Unc, Eng. Clarkson
Van Buskirk, Adelbert, LD, Ed. Edmonds
Van Derwaan, Aaron, LD, Ed. Burton
Van Duzen, Bess G, UD, Sci. Tacoma
Van Duyn, Jeannette E, UD, LA. St Paul
Van Eaton, Harold, LD, ME. Olympia
Van Gilder, F M, LD, LA. St Helens, Or.
Van Oordd, Otte Pearl, LD, LA. Seattle
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Van Vleet, Carolyn, LD, LA. Yakima
Van Voorn, M E, LA. Seattle
Van Vos, William S, Unc, Law. Tacoma
Van Wie, Florence, LD, Phd. Seattle
Van Winkle, Barak, LD, LA. Payyulup
Van Zandt, Ros S, Eng, Eugene, Or.
Vandercook, Jeannette C, UD, Bus. Seattle
Vannoy, Louise, UD, Ed. Philpug, Mont
Veitch, Allen, Washington, DC
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</table>
SUMMER QUARTER STUDENTS—1921

Abbott, Carl W., Fr, ChE ................ Seattle
Abel, Helen M., LD, Sci., Montesano
Abele, Jose F., Spec., Philippines
Abele, Chas. Henry, LD, Bus., Seattle
Aber, James F., UD, Sci., Seattle
Adams, Geo. B., UC, Bus., Centralia
Adelson, Abraham M., Jr., EE ................ Seattle
Agan, John Stuart, LD, Bus. .... Seattle
Aguean, Rene A., Grad. .... Seattle
Aguila, Jose, LD, Bus. ... Seattle
Anhalt, Martha E., UD, Ed. .......... Seattle
Alcott, Evelyn V., LD, LA, Berkeley, Cal.
Alkin, Cecilia E., UD, Ed. .......... Seattle
Albers, Archie V., UD, LA .......... Seattle
Albers, Alvina M., Grad. .... Northfield, Minn.
Allen, G. C., Grad. .......... Seattle
Allen, Martha, Spec., N. .. Seattle
Allen, Charles E., Jr., EE .... Seattle
Allen, Glenn A., Grad. .................... Seattle
Allen, Mabelle, UD LA ........... Pendleton, Or
Albaugh, Irene, LD, Ed. .......... Laurel, Mont.
Allman, L C, LD, Ed. .... Bellingham, Wash
Allee, Evelyn M., Spec., Wash
Almos, Felipa B., Soph. ....... For., Philippines
Anderson, Estella W., LD, Ed. .......... Seattle
Anderson, Renyl John, LD, BA .... Seattle
Anderson, Arthur Joel, UD, Bus. .......... Seattle
Anderson, Edward G., UD, Ed. ...... Seattle
Anderson, Ethel May, Grad. ...... Seattle
Anderson, Georgia E, UNC, LA .... Seattle
Anderson, Helen E., UD, LA ...... Seattle
Anderson, Orren A., UD, Ed ... Seattle
Anderson, Leroy F., UD, Law. .......... Portland, Or
Anderson, Mrs. L E, UD, Sci. ........ Seattle
Anderson, Gertrude, UD, Bus. ....... Tacoma
Anderson, Gena, LD, Bus. .......... Tacoma
Anderson, Mary H, UD, LA .......... Seattle
Anderson, Mrs. M, LD, LA, Centralis, Wash
Anderson, Mrs. A, UD, LA .......... Seattle
Anderson, Rena, UNC, Ed. .......... Portland Or
Anderson, Rita L, Grad. .......... Bode, Ida
Andrus, Dora Eva, UD Ed .......... Seattle
Appleton, C Floyd, LD, LA .......... Seattle
Arbuthnot, I I, LD, Sci. .......... Seattle
Arnold, John Alber, UD, Ed. .......... Tacoma
Arnzen, Edward J, Grad. .......... Parkland, Wash
Atwater, A C, Grad. .......... Seattle
Atwood, Stanley F., UD, LA ....... Prosser, Wash
Aune, Bernt, UNC, LA ........ Banger, Wash
Austin, Russell A, M, Bus. .......... Aberdeen, Wash
Axtell, George E, UD, Sci ........... Seattle

Bachelor, Robert W, UD, Bus. .......... Tacoma, Wash
Ballein, Myron E, UD, Ed. .......... Seattle
Balsley, John Earl, LD, Ed. .......... Washington, D C
Ballou, Marida P, LD, LA .......... Seattle
 Baird, Oscar W, Grad. .......... Tacoma, Wash
Baker, Carl W, UD, Bus. .......... Garfield
Baker, Charles B, UD, Ed. .......... Seattle
Baker, Martin H, UD, Ed. .......... Robe, Wash
Baker, Forthia, Grad. .......... Seattle
Baker, R P, UD, Bus. .......... Seattle
Baldwin, Anna Laura .......... Spokane, Wash
Baldwin, Clarence H, UD, Bus .......... Seattle
Ballard Louise Estelle Summers, Spec .... Seattle
Bancroft, Clyde A, UNC, ED ........ Seattle
Bannwarth, C G, UD, Bus. .......... Snohomish, Wash
Barber, Carl Vincent, Grad. .......... Morton, Wash
Barnhiseh, Kathryn, UD, Ed. .......... Seattle
Barquist, Wally C, Grad. .......... Seattle
Barrett, Lola, UNC, LA .......... Ferndale, Wash
Barton, Ben, UNC, Ed. .......... Puyallup, Wash
Bassett, Samuel B, LD, LA .... Bellingham, Wash
Bates, Ethel O, UD, Ed. ........ Tacoma, Wash
Baumgartner, F, UNC, Okanogan, Wash
Bayley, Elizabeth F, LD, LA .......... Seattle
Beazley, Hamilton B, UD, Bus. .......... Seattle
Beal, Esther Plummer, LD, Sci. .......... Seattle
Beardsley, Will G, UNC, Law. .......... Bothell, Wash
Beaubien, Grace, LD, LA, Winlock, Wash
Beck, Agnes, Spee, U., Wash
Beck, Harry George, UNC, Sci. .......... Seattle
Becker, Gladys Alieen, Grad. .......... Seattle
Beers, Erma M, UD, Ed. .......... Tacoma, Wash
Bell, Ada May, LD, SCI. .......... Vancouver, B C
Bell, Beulah B, UD, SCI. .......... Logansport, Ind
Bell, James Miller, Spec. Fish .......... Seattle
Bell, Mrs. Lydia F, Grad. .......... St. Annsy, Ids
Bell, Otis Edmund, LD, Ed. .......... Seattle
Bell, Ward Y, SOPH, EN. .......... Port Angeles, Wash
Bellinger, Hiram, Norm, Wash
Bellinger, Lyman, LD, Bus. .......... Tacoma, Wash
Beletad, Walter Cyrus, SOPH, PHAR, Sattle
Benett, Albert Lee, Grad. .......... Seattle
Bennett, Marjorie, UC, Lib. .......... Seattle
Bennett, Richard F, LD, LA, Kirkland, Wash
Bentham, Elaso Marie, Grad. .......... Tacoma, Wash
Berg, George F, Spec. PHAR .......... Seattle
Bergland, Thos Henry, LD, Bus. .......... Seattle
Bergman, Charlotte, LD, Ed. .......... Seattle
Berger, George F, Spec. Phar .......... Seattle
Bergquist, Fred E, UD, LA ........... Spokane, Wash
Berry, Elizebeth, Grad. .......... Seattle
Berry, Harriet May .......... Kinsman, Ora
Bert, Wilfred K, SOPH, EE .......... Seattle
Bess, Sarah Olive, Spec. .......... Bellinham, Wash
Bettner, Virgil Q, LD, SCI. .......... Anacortes, Wash
Bickford, Ethel Mary, Grad. .......... Hood River, Or
Bien, Henry Hy-Kung, UD, BUS .......... China
Biesen, Anna, Spec. .......... Ena, Or
Bill, Margaret J, UD, ED. .......... Tacoma, Wash
Bingham, Florence M, LD, FA, .......... Seattle
Birds, Margaret E, Spec., Phonetics, Or
Birney, Frances M, UN, FA, LA Grande, Or
Bissett, Clark P, JR, LD, LA .......... Seattle
Bitter, Esther Anna, UD, ED, Speake, Wash
Bixby, Florence L, ED, Bellingham, Wash
Bjerquist, Enoch J, LD, LA, Spokane, Wash
Black, Alice Walker, Spee, Nars .......... Seattle
Blackburn, J L, UD, Ed. .......... Tacoma, Wash
Blain, Edith M, LD, Ed. ........... Armitage, Mont.
Blaine, Edward L, JR, UD BUS .......... Seattle
Blazlock, Thomas R, Unc, Ed. .......... Seattle
Blos, Anna Barbara, Ed. .......... Lincoln, Hl
Blosser, Mrs. St B, LD, Snohomish, Wash
Boeck, Charlotte .......... McMinnville, Or
Bocart, Ruby M, Spec, ............. Seahurst, Wash
Bole, John C, LD BUS .......... Seattle
Bol, Mildred Hill, LD, ED .......... Seattle
Bollom, Otis H, Grad. .......... Seattle
Bolton, Dean Stanley, Grad. .......... Tacoma, Wash
Bolton, Edwin Letham, JR, ME .......... Seattle
Bond, Rowena, Grad. .......... Seattle
Bond, Sara, Spec. .......... Seattle
Bonner, Pearl, UD, ED .......... Centralia, Wash
Bonney, Lucertia C, Grad. .......... Pendleton, Or
Boone, Albert, UNC, LA .......... Seattle
Boone, Ellen Y, UN, ED .......... Lynden, Wash
Bondy, Chas Milburn, LD ED .......... Seattle
Bontelle, Virginia S, LD, LA .......... Seattle
Bowden, Koble Elworthy, FR, ED .......... Seattle
Bowen, Albert Henry, Spec, CHI .......... Seattle
Bowles, Allan, Grad. .......... Vancouver, B C
SUMMER QUARTER STUDENTS—1921

Hansdaker, John Theodore, Unc, Ed...Seattle
Hanify, Mabel V, Spec, Sci.Chehalis, Wash
Haukinn, Helen Adelaide, LD, LA...Seattle
Hawkins, Elma, un, Bus, Seattle
Hanna, Miriam, LA, LD...Seattle
Haugen, Louis Charles J J, Unc, Ed, Seattle
Hansen, Mary Esther, LD, Bus, Seattle
Hansen, Leo, UD, Ed...Lacey, Wash
Hansen, Viola, UD, LA...Seattle
Haper, Leone M, LA, LA...Bozeman, Mont
Harris, Charles Leonard, Jt, Law, Seattle
Harris, Florence (Sadilla) LD, Ed, Seattle
Harris, George Crab, Spec, Bus, Seattle
Harris, Cornelius Hinman, LD, Bus, Seattle
Harris, Sarah Eleanor, UD, Ed...Seattle
Harrison, Mary, Unc, Ed...Toledo, Ore
Hartge, Elva, LA, Grad...Anacortes, Wash
Harvey, Earle A, LD, Sci.Arlington, Wash
Harvey, John H, UD, Bus, Vancouver, Wash
Harvey, Ralph A, LD, Sci.Arlington, Wash
Hatch, Harry Lois, LA, Grad...Col Hatfields, Clara, Unc, Ed.Cottonwood, Minn
Hattestad, Elmer, Unc, ME...Seattle
Hattery, Mrs. Ruth M, LD, LA.Pendleton, Ore
Hass, Henry J, UD, LA...Deep Creek, Wash
Hassemann, Kenneth L, LD, Bus, Seattle
Hatch, Ethel, LA, Grad...Cal Hatfield, Clara, Unc, Ed.Cottonwood, Minn
Hattel7, Hrs. Clara, Unc, Ed...Seattle
Hatch, Geo...Seattle
Hattel7, Hrs., LA, Grad...Seattle
Hauk, Hazel Yarle, un, Sci...Seattle
Hawk, Andrew Johan, UD, Eng...Seattle
Hauge, Philip, Grad...Parkland, Wash
Haken, Evelyn Am7, LA...Seattle
Hawley, Edith G, LD, LA...Yakima, Wash
Haworth, Elizabeth, LD, Sci...Seattle
Hay, Larry, LD, Bus,...Sunnyside, Wash
Hay, Mildred, LA, Grad...Seattle
Hayden, Chauncey, Spec...Seattle
Haynal, John Budd, Sci.Walla Walls, Wash
Haynes, George, LA, Grad...Orge.Haynes, Stephen Bernard, Unc, Law, Seattle
Hazen, Claris Madelyn, LA, Ed...Seattle
Hazen, Mrs. Harriet W, Spec Pendleton Ot
Hazelton, Olga Jane, LD, Sci.Spokane, Wash
Head, Mrs. Sydney, Unc, Ed...Seattle
Heald, Hazel V, LD, LA...Spokane
Healy, Alberta, LA, Grad...Los Angeles
Heartfield, Mrs. Margaret, Spec...Seattle
Heiner, Arnold, LD, LA...Seattle
Heiser, Leo Conrad, Spec, FA.Howard, S.D.
Heiskell, John Herbert, Spec...Seattle
Hempill, Elizabeth, Unc, Ed...Seattle
Hempill, Harriet, LD, FA...Seattle
Hendricks, George, LA, Grad...Wash Henderlite, Claude Elmer V, Grad...Seattle
Henderson, Winfield L, GD, Waterville,Wn
Henricks, John Josepa, LD, Sci...Seattle
Henry, Yvone John, Grad...Seattle
Henry, Verne M, Unc, Bus.McMinnville, Ore
Herbert, Percy, Spec, Bus...Seattle
Hernandez, Wayland D, UD, Bus.Pasadena, Cal
Hernandez, S C, LD, Bus...Philippines
Hern, Pauline E, UD, UD...Fortland, Ore
Herr, Opal, Grad...Seattle
Herr, William Albert, LD, Bus...Seattle
Hessigrafe, Charles Everett, Grad...Seattle
Hesseltine, Lee Frances, LD, Bus...Seattle
Hibarger, Pearle, LD, Sci.Yakima, Wash
Hibbert, Ralph W...Zillah, Wash
Hill, Alice M, Spec...Indianapolis, Ind
Hill, Cyril Dean, Grad...Seattle
Hill, Glen Gordon, Grad...Riverside, Wash
Hill, Grace Alma, Grad...Seattle
Hill, Sidney Bryan, Unc, Law, Riversides Wn
Hillman, Robert Elise, Unc, LA, Law...Seattle
Hilstrom, George D, UD, Bus, Vancouver,Wn
Hinckley, Loreta A, Unc, LA.Tacoma, Wash
Hiner, Elizabeth, Unc, Sci...Seattle
Hines, Anna, Unc, LA, Bus...Seattle
Hipsey, William B, Spec...Seattle
Hirose, Tadayuki, UD, Sci...Japan
Hjortoe, Gurina Olina, UD, LA Tolt, Wash
Ho, Pao Jin, UD, LA...China
Hoge, Howard Samuel, LD, Fish...Seattle
Hogg, Ruth Gilberts, UD, Sci...Seattle
Hodges, James, LA...Seattle
Hodges, Jo, Unc, Ed...Seattle
Hodges, John S, Spec...Edmonds, Wash
Hodson, Mrs. Geo, LA.Pendleton, Ore
Hoffman, K E, Unc, Bus, Ellensburg, Wash
Hoffman, Ruth M, LD, Bus,Olympia, Wash
Hobrock, C H, Ray, Grad...Seattle
Hogues, William Paul, Grad...Seattle
Hollen, James H, LD, Ed...Seattle
Hollingshead, Lilie H, Grad...Boise, Ida
Hollway, Albert Cecil, LD, LA...Seattle
Holloway, Edith, H, Unc, Sci.Helena, Mont
Holmes, Leonor, Grad...Seattle
Holmes, Marie M, Unc, FA...Portland, Ore
Holinquis, Hjalmar E, Grad...Aberdeen, Wash
Holt, Lucy Minerva, UD, Sci...Seattle
Holton, Karl William, LD, Bus...Seattle
Hood, Helen K, UD, FA...Puyallup, Ore
Footman, Mary R, Unc, Ed.Pinehurst, Ohio
Hoover, Ralph Leonard, UD, Sci...Seattle
Hopper, Dorris Conley, UD, LA...Seattle
Hopper, Clarence Calvin, LD, LA...Seattle
Hornstra, Fred H, SE, Auburn, Wash
Horton, Helen, Unc, LA...Nisqually, Wash
Horakins, Neal, LA...Seattle
Homer, Ruth Rachel, Grad...Seattle
Hotelling, Harold, Grad...Seattle
Hower, Ernest John, LD, LA...Seattle
Howard, Frances Hyde, LD, LA...Seattle
Howard, Fred A, LD, Bus...Stanwood, Wash
Howard, Mrs. Lina Wright, LD, FA...Seattle
Howard, Blanche, LA, LD...Seattle
Howell, Evelyn, Unc, Ed...Seattle
Hower, Melba M, LD, Sci.Friday Harbor
Houghton, Robert, Grad...Seattle
Hoy, William E, LA, Grad...Seattle
Hudson, George Eddy, LA, LD...Seattle
Hudson, Lulie Lane, Ed...La Grange, Ga
Hueladonk, Elizabeth, UD, Sci.Spruce, Wash
Hughes, Cecll L, Grad...Kennewick, Wash
Humes, Edmond T, Spec, Pha...Seattle
Humphrey, Mary Brown, Unc, LA
Hinsacker, James, Unc, Un, ChE...Seattle
Hunt, Margaret, Grad...Seattle
Hurlbut, B, UD, Ed.Thompson Falls, Mont
Hurst, Dora, LD, LA...Seattle
Huss, Esther E, LA...Seattle
Huston, Mrs. Estelle May, Unc, Ed...Seattle
Hutchins, Nara Hubert, Unc, Ed...Seattle
Hutchinson, Rebeka, LA, Grad...Seattle
Hutchinson, William Harold, UD, LA...Seattle
Hutcheson, Howard Charles, Fr, ChB.Seattle
Huth, Carlton P, Unc, Law.Tacoma, Wash
Hyatt, Walbridge Herbert, Unc, Sci.Seattle
Hydman, William L, 3rd Law, Spokane, Wn

Benes, Henry T, Grad...Tacoma, Wash
Inouye, Chokel, LD, LA...Seattle
Irvin, Edgar Lloyd, Unc, Bus...Seattle
Irwin, John Ivan, UD, Bus...Ionia, Mo
Ivy, Eugene Dyke, 3rd Law.Davenport, Wash

Jaacks, Nola, Grad...Kingston, Wash
Jacinto, Vitorino, Unc, LA...Philippines
Jacob, Mary, Spec...Seattle
Jacobson, Townsend E, Jr, LD, Bus...Seattle
Jacobson, Paul M Jr., ChB, Ellensburg, Wn
Jacobson, Agnes, Unc, Sci.Spanaway, Wash
Jaeger, Waldemar, LD, Ed.Centralla, Wash
James, George...Seattle
Janczewski, John, LA, Grad...Seattle
Janesay, Harold L, LD, Bus, Edmonds, Wn
Jansson, Roderick, LD, Sci...Seattle
Jaques, Edna A, Grad...Seattle
SUMMER QUARTER STUDENTS—1921


Maur, Mrs Mildred Palmer, Unc, Ed.....Seattle
Maxwell, Gertrude, Grad......Walla Walla, Wash
Maxwell, Nelle, Spec, Sci.....Shelton, Wash
Maxwell, Willard, LD, Bus......Seattle
May, E, LD, Ed.....Seattle
Meacham, Edith, Grad......Seattle
McKearthy, Crl Wallace, LD, Bus......Seattle
Mcdoster, quisas Adelaide, LD, Bus......Seattle
McMahan, T M, LD, Ed.....Bremerton, Wash
McMasters, Frederick H, UD, Fish......Seattle
McKelcher, Clara B, Unc, LA.....Loomis, Wash
McMullen, Helen S, Spec, Skpokane, Wash
Mendenhall, Bith, LD, LA......Oll Hill, Kan
Meeceley, Alexander Howard, UD, LA.....Seattle
Monta, Cyrous J, LD, Ed.....Tacoma, Wash
Mordier, Jeanne Almer, Grad......Seattle
Merrill, Sherman Lee, UD, Ed......Seattle
Merritt, Fred Warren, UD, FA......Seattle
Metcalfe, Gianna, Grad......Portland, Ore
Meyer, Ambrose J, UD, Sci......Lacey, Wash
Meyer, Edward Albert, LD, Bus......Seattle
Meyer, Joe, LD, Ed.....Honda, Wash
Meyer, May E, UD, LA......Seattle
Meyer, Walter Charles, Unc, Sci......Seattle
Meyer, Walter T, Unc, Ed.....Ferndale, Wash
Michaels, Marie Antoinette, Grad......Seattle
Michaels, N L, Unc, Bus......Oregon City, Or
Middleton, Keith C, UD, Bus......Seattle
Miller, Freda, Spec, Sci......Spokane, Minn
Mills, Wesley, 1st Law......Seattle
Mills, Craig Harrison, UD, Ed.....Poulsbo, Wash
Mills, Col, Cornella, Grad......Deaver, Col
Mills, Wilma Evelyn, Grad......Ontario, Or
Muller, Charles John, UD, Bus......Seattle
Miller, Mrs Elsie M, UD, Sci......Seattle
Miller, Paula Leonie, Grad......Seattle
Miller, Ethel Adelina, UD, Bus.....Yakima, Wash
Miller, Helen, Grad......Seattle
Minnis, Harry R, Unc, Sci......Tacoma, Wash
Miller, Max Carlton, LD, LA, Everett, Wash
Miller, Roy Charles, 3rd Law......Seattle
Miller, William M, Spec, Sci......Portland, Or
Millert, Genevieve L, Unc, FA......Seattle
Mills, Olive, Spec......Park River, N D
Mills, Abbie, E, Unc, Bus.....Bellingham, Wash
Miller, John A, L, LA......Stockton, Mont
Minnis, Marjorie Elizabeth, Grad......Seattle
Monte, Harriet, Unc, LA......Seattle
Monteagle, Vera Marie, Spec......Tacoma, Wash
Moore, Ely, Spec, Bus......Bellingham, Wash
Moore, Milt, LD, Ed......Seattle
Moore, Edna J, Spec, Ed.....Seattle
Moore, John A, L, LA......Seattle
Moore, John, L, LD, Ed......Seattle
Moore, cheri, Grad......Seattle
Moore, Mabel, LD, Ed......Seattle
Moore, Mary Katherine, Spec......Seattle
Moore, Elma M, LD, Sci......Seattle
Moore, John Harwood, Jr, LD, Bus......Seattle
Moore, John R, Spec, Bus......Spokane, Wash
Morse, James M, Grad......Seattle
Morse, M E, Unc, Sci......Medical Lake, Wash
Morrison, Alice, Grad......Seattle
Morrison, Mary Marin, UD, FA......Seattle
Morrison, Millard C, UD, LA, Frankfort, Ind
Morrison, Ruth Louise, UD, LA......Seattle
Morrison, William, LD, Bus......Seattle
Morrow, Leona Marie, UD, LA......Seattle
Morse, Ralph, 3rd Law......Seattle
Morton, Robin, LD, LA......Seattle
Moser, Melvin C, L, LD, FA......DuPont, Wash
Mok, August Joseph, Sr, E2......Seattle
Mount, James N, UD, Ed.....Kalama, Wash
Mueller, Marguerite, UD, Sci......Seattle
Muir, Anna Mary, UD, Bus......Spokane, Wash
Muir, Esther, Grad......Spokane, Wash
Mullin, S E, Jr, LD, LA......Bellingham, Wash
Munsey, Mildred, LD, Sci......Olympia, Wash
Munro Anna Marie Grad......Seattle
Munro, P J, Unc, FA......Walla Walla, Wash
Murdoch, Forrest G, Unc, LA, Wapato, Wash
Murphy, Mary Ethel, LD, Sci......Seattle
Murray, Charles, UD, Sci......Tacoma, Wash
Murray, Jane Frances, LD, Lwoslo, Wash
Murray, Mildred, UD, LA......Sandpoint, Id
Murray, Valois Agnes, LD, Bus......Seattle
Murton, Clarence Charles, LD, LA......Seattle
Myers, Clarence, LD, Ed......Olympia, Wash
Myers, Donald P, LD, Bus......Seattle
Myrle, Ruth, Grad......Kent, Wash
Myron, Louise I, Unc, Ed.....Stanwood, Wash

Nagle, Julius A, Spec......Oak Harbor, Wash
Nagle, Elizabeth, Spec......Yakima, Wash
Nagle, Mary A, Unc, LA......Los Angeles, Cal
Nagler, V, Unc, LA......Spokane, Wash
Nagley, John H, Spec, Ed......Eatonville, Wash
Nason, Mae Blanche, LD, Sci......Walsenburg, Col
Naw, Sandra, Grad......Bellingham, Wash
Neal, Russell LeRoy, LD, Ed......Liberty Pa
Neary, Raymond, LD, Sci......Lacey, Wash
Neeleman, Ann M, Unc, Ed......Portland, Or
Neely, Emery, Grad......Seattle
Neil, Delores Anne, UD, LA......Seattle
Nelson, Eleanor, Unc, LA......Seattle
Nelson, Lilian N, Unc, Sci......Bellingham, Wash
Nelson, Loyd Edward, LD, Bus......Seattle
Nelson, Marie Leona, UD, Bus......Seattle
Nelson, Millard Neil, Soph, Chi......Seattle
Nelson, Tscham K, Unc, Bus......Wapato, Wash
Ness, Nils Arthur B, Grad......Tacoma, Wash
Nettleton, Luise, Unc, MD......Seattle
Nettleton, Lena, Unc, Ed......Kirkland, Wash
Newcomb, Wallace, Spec......Olympia, Wash
Nichols, Harold, LD, Sci......Seattle
Nicholson, Elsiek, Spec......Seattle
Nichols, Cloud N, Spec......Seattle
Nichols, Masso Frank, Soph, EE......Seattle
Nishiwaki, Nobuo, Unc, LA......Japan
Noble, Annabelle, Ed......Aberdeen, Wash
Noble, Max E, Spec, Bus......Seattle
Nodle, Mary, Grad......Payette, Idaho
Noo, Edna Louise, Grad......Colville, Wash
Nolan, Michael John, Soph, CE......Seattle
Nolan, Vincent, Spec......Seattle
Noland, Frank H, Spec......Bremerton, Wash
Norman, Mrs L C, Spec, Richmond, Bch, Wash
Norris, Grace, Unc, Ed......Burlington, Wash
Norris, Ralph Hall, LD, Bus......Seattle
Norton, Mamie Belle, UD, Ed......Seattle
Norton, Robert, Unc, Law......Olympia, Wash
Norwood, Helen B, Unc, FA......Seattle
Nottingham, Mrs Belle, Unc Ed......Seattle
Noyes, Lurlene, LD, LA......Kennecott, Wash
Nugent, Margaret A, LD Sci......Portland, Ore
Nuguid, P A, Fr, ME......Philippines
Nuul, John Edward, Jr, LD, LA......Seattle
Nygard, Erik, Jr, E2......Seattle

Oakes, Ruth E, LD, Sci......Seattle
O'Brien, John T, Unc, LA......Seattle
O'Callaghan, V, Unc, FA......Bonner Ferry, Id
Odice, M, Frank, Unc, Ed......Bellevue, Wash
Olmsted, Marlon C, Unc, Ed......Clarkston, Wash
Oney, Mrs Bertha, Unc, FA......Seattle
Olsen, Amos Floyd, L.A. Bus.
Davenport, Wash
Tacoma, Wash
Olsen, Leth Ingvar, Unc., L.A.
Tacoma, Wash
Olsen, Carl Jr, Unc., L.A.
Seattle
Olsen, Ivan, Grad., L.A.
Mont
Olsen, Marguerite, Unc., Ed.
Tacoma, Wash
Olsen, Raymond E, L.D. Sci.
Bozeman, Mont
Olsen, Alice Florence, L.A.
Seattle
Yakima, Wash
O'Neill, Agnes V, UD.
Spokane, Wash
O'Neill Larkin A, UD.
Bus.
Seattle
Ogg, Emma Zella, L.D., F.A.
Seattle
Opperman, Anna Marie, Unc., Ed.
Oreson, Jose, L.D., Bus.
Philadelphia
Perceval, Mrs. J. R., L.A.
Bedford
Orr, Robert L, Spec., Eng.
Portland, Or
Osborn, Fera Marie, L.D., FA.
Gooding, Idaho
Osborn, Elen J., Unc., Thorp,
Wash
Oscar, Orland A, L.D., Bus.
Seattle
Osgood, John A, L.D.
Lacey, Wash
Ostenson, Floyd C, L.D., Sci.
Bremerton, Wash
Ostosander, Ruth Elizabeth, UD.
Sel.
Overguard, Marj E, Unc.
Sel.
Overguard, Julia O, Unc.
Sel.
Otsuna, Lawrence, Grad.
Seattle
Owens, Elizabeth Hayden F, Grad.
Seattle
Owleser, Joseph H, Sr.
Eaton
Oxman, John Donald, Unc., Law.
Jameslon, Or
Packard, A Henry, Grad.
Seattle
Page, Elvile Belle, Grad.
Olympia, Wash
Paley, Augustine F, Unc. L.A.
Philippines
Palmer, Mrs. M. M., Unc.
Centralia, Wash
Parish, Herbert F, L.D., Bus.
Seattle
Park, Wallace George L.D.
Seattle
Parrish, Faith Reed, Unc., Bus.
Seattle
Parsons, Elveta Tillman, Grad.
Seattle
Patchell, Jewel, Grad.
Palis Valley, Okla.
Patchlin, Wilmott H., Grad.
Seattle
Peters, Elkan E., 1st Law.
Seattle
Pattison, Evelyn, L.D., FA.
Seattle
Pattison, Frank Arthur, Grad.
Seattle
Pattison, Gerald Edward, L.D., Ed.
Seattle
Paisley, Alice Dagmar, L.D., L.A.
Seattle
Pearsall, Deorah Olive, Unc., L.A.
Seattle
Pearson, Delia M., Unc. Sci.
Entiat, Wash
Pearson, Gertrude C., L.D., Gen.
Gig Harbor, Wash
Peden, Barton E, UD., L.D.
Seattle
Pellman, Mrs. Irene, Spec.
Seattle
Pelletier, Lawrence L., L.D.
Seattle
Peltz, Irma Margaret, L.D., Sci.
Seattle
Peltz, Victor Hugo, L.D.
Seattle
Pfluger, Cecilia J., Grad.
Philadelphia
Perlina, George Yose (Mrd. Grad.)
Seattle
Tacoma, Wash
Perlin, Solomon, Sophie, CE.
Seattle
Peters, M. H., L.D., FA.
Bellingham, Wash
Perry, Mary Agnes, L.D., L.A.
Tacoma, Wash
Perry, Warren Lloyd, L.D., L.A.
Tacoma, Wash
Peterson, Agnes C, L.D., L.A.
Moscow, Id.
Peterson, Inez Helen, L.D., L.A.
Seattle
Peterson, John F., Spec.
Renton, Wash
Peterson, Sophie, Spec., L.A.
Seattle
Peterson, Thomas, Spec., L.A.
Seattle
Port Blakely, Wash
Peth, Hazel A, Grad.
Mt. Vernon, Wash
Petitt, L. L., L.D.
Wash
Petty, Gladys, L.D.
L.A.
Centrals
Pettyjohn, Carrie, UD.
Sci.
Prescott, Wash
Pickering, Jack Charles, Unc., Ed.
Spokane, Wash
Pfaff, Earl, Grad.
Seattle
Praff, Lovina, Unc., L.A.
Philadelphia
Philips, Frances Brownell, Grad.
Seattle
Pilcher, Manple, Unc., Ed.
Harve, Mont
Phillips, Core, J., Unc., FA.
Seattle
Phillips, Ruth Naomi, Grad.
Seattle
Spokane, Wash
Pierce, Allene Edna, UD.
Ed.
Seattle
Seattle
Pierro, Adelaide, Unc., FA.
Seattle
Pierrot, Marjorie, Grad.
Seattle
Pinkerton, Ralph, L.D., L.A.
Tacoma, Wash
Piper, Minnie C, Spec.
Spokane
Pitzer, Clarie August, L.D.
Tacoma, Wash
Platt, Anne C, Grad.
Seattle
Pollard, Joan, Unc., L.A.
Seattle
Pollard, Dorothy, Spec., L.A.
Hoquiam, Wash
Pool, William Franklin, L.A.
L.A.
Poolton, Frederick Arthur, L.D., L.A.
Seattle
Porep, Edward Walter, UD., Bus.
Seattle
Porter, Dott, UD.
Seattle
Sel.
Porter, Welcome Ray, Grad.
Seattle
Rogers, Gladys, UD.
Seattle
Quase, Harry F, Unc.
Clark, Wash
Querli, Chuen Yous, L.D., Sci.
Tacoma, Wash
Quigley, Anna M., L.D., Ed.
Tacoma, Wash
Quigley, Anna M., L.D., EM.
Yakima, Wash
Quigley, Clarence Black, L.D., Bus.
Seattle
Rader, A. O.
Seattle
Seattle
Ramey, Ida Lenore, Grad.
Colton, Ore
Ramos, Ida M., UD.
Ed.
Coeur d'Alene, Idaho
Rapp, Mary E, Spec.
Spokane, Wash
Rasmussen, George V, L.D., Ed.
Chemlau, Wash
Rath, Martha Amelia, UD.
Sci.
Seattle
Rattigan, Thos., Grad.
Seattle
Raven, Horatius, UD.
Seattle
Rawls, A C, Unc.
Seattle
Redford, Walter, L.D., Ed.
Stephcte, Wash
Redford, Elderly Elmer, UD.
Sel.
Reed, Clyde L, L.D.
Ferndale, Wash
Reed, Emily Judson, Grad.
Seattle
Reed, Ethel, Grad.
Seattle
Reed, James L., Bus.
Keanevick, Wash
Reed, Jennie M, Grad.
Tacoma, Wash
Reed, Lucie Margaret, Unc.
Ed.
Seattle
Reed, Margaret, Grad.
Seattle
Reed, Paul Marion, Grad.
Helix, Ore
Rees, Mary G, Unc., L.A.
Seattle
Reese, James B, Spec.
Bus.
Kirkland, Wash
Reese, Richard H, Spec.
Concrete, Wash
Rhodes, Josephine Y, Unc.
L.A.
Brewster, Wash
Richards, Eleanor Virginia, Spec.
Seattle
Richardson, Gertrude Helen, Ud.
Seattle
Richardson, Otis Dunbar, Grad.
Seattle
Richford, Maurice Albert, Soph.
Ch.B.
Seattle
Rickles, Dale N, Ex.
Ch.B.
Seattle
Rickles, Nathan, L.D., Sci.
Seattle
Rieben, Samuel Edward, Unc.
L.A.
Seattle
Rigg, Margaret Emer.
L., L.A.
Seattle
Rines, Isabel MacDonald, Spec.
Seattle
Ringstad, Emery T, L.D., Bus.
Seattle
Portland, Ore
Robins, Floyd D., L.D.
Ed.
Olympia, Wash
Roberts, Aubrey E, UD.
L.A.
Mancon, Coto
Roberts, Mary Catherine, Spec.
Seattle
Roberts, Sara A, Grad.
Seattle
Roberts, Wv L, Unc.
Bus.
Angola, Ind
Roberson, Berdena, UD.
Ed.
Seattle
SUMMER QUARTER STUDENTS—1921
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Robertson, Collin W., Unc. Bus. ... Seattle
Robertson, James, Jr., Spec. Bus...Seattle
Robertson, Katherine Constance, Grad. Seattle
Robison, Bessie M., Grad. ... Portland, Ore
Robinson, Eliza, Grad. ... Townsend, Md
Robinson, Frank D., LD, Bus. ... Summer, Wash
Robinson, Mrs. Jeannette A., LD, Bus. ... Seattle
Rockwell, John Jr., UD, Bus. ... Castle Rock, Wash
Rodhe, Leonard, Grad. ... Mont
Rodman, John F., Spec. ... Nampa, Idaho
Roe, Merle John, Unc. Bus. ... Seattle
Rohrbacher, Mrs. Annie, Spec. ... Seattle
Rolmscher, William, Soph. ... Mines...Seattle
Roop, Milford William, LD, Sci. ... Seattle
Roper, J. D., Grad. ... Seattle
Roper, Marion Wesley, UD, Ed. ... Seattle
Rosen, Hilda F., UD, Sci. ... Monroe, Wash
Rosenbush, Ily, LD, Ed. ... Seattle
Ross, Gordon Burwell, LD, Bus. ... Seattle
Ross, Laura, Grad. ... Salem, Ore
Rossetter, Harriet, Unc. ... Ketchikan, Alaska
Roth, Robert, LD, Sci. ... Seattle
Rowe, Helena Brackett, UD, LA ... Seattle
Royce, Ruby J., LA, DA ... Seattle
Rucb, Frances Elora, UD, Sci. ... Kellogg, Idaho
Ruch, Lawrence Edwin, Spec. ... Applegate, Ore
Ruder, William Fish, Most ... Seattle
Rude, Hazel Irene, Unc. Bus. ... Seattle
Rudolph, Evangeline, LD, Sci ... Seattle
Rupp, Theima M., UD, Sci. ... Snohomish, Wash
Rusche, Harry, LD, LA ... Seattle
Russell, Imogene E., Unc. ... UA, Grand Forks
Russell, John B., UD, Ed ... Puyallup, Wash
Ryan, Esther, Unc. ... WA, Grand Forks
Ryan, Granville, Fr, Chs ... Denver, Colo
Ryan, John E., LD, Sci. ... Seattle
Ryan, Grant Hall, Fr, Chs ... Seattle
Searcy, Lucy B., Unc. ... Seattle
Sears, Ruth Beth, UD, Ed. ... Seattle
Sears, Sigby, LD, Sci. ... Omaha, Neb
Sears, Elmaneke, Unc. Bus. ... Seattle
Seelye, Viola, UD, Sci. ... Seattle
Seldenstricker, L. J., Ed. ... Twin Bridges, Mont
Selby, Harold Kellogg, UD, Bus ... Seattle
Sellers, Ulrich Robert, LD, Bus. ... Seattle
Semons, Waldo Lembrond, Ore ... Seattle
Sestak, Minnie, Grad. ... Victor, Mont
Severyn, Phyllis C., Ed. ... Charleston, Wash
Shank, Charles Howard, LD, Sci. ... Seattle
Shanks, Marcus Mahlon, LD, Sci. ... Seattle
Sharp, Mary Cora, Spec. ... Seattle
Sharpe, Elton Dennis, Grad. ... Seattle
Shaw, Mrs. J. D., Spec. ... Boston, Wash
Shawler, Clarence V., LD, Bus. ... Seattle
Shawler, Grace LA ... Spokane, Wash
Shea, Ellen Mary, LD, LA, Spokane, Wash
Sheehan, Hadeline, LD. ... Seattle
Shea, Ellen Mary, LD, LA, Spokane, Wash
Sheehan, Madeline, Grad. ... Seattle
Sheets, Lora C, UD, Ed. ... Lynden, Wash
Shellenberger, John Alfred, LD, Sci. ... Seattle
Shelton, Alva, LD, Spec. ... Bus. ... Seattle
Shelton, Marvin, Unc. Ed. ... Ellensburg, Wash
Shepard, Mabel, Grad. ... Seattle
Sherman, Marjorie Elma, LD, D. Ed. ... Nampa, Idaho
Sherwitz, Ethel May, LD, LA ... Seattle
Shliach, Mary E., Spec. ... Seattle
Shidler, Minnie, UD, Sci ... Seattle
Shidler, Will L., LD, LA ... Seattle
Shillock, Harold J., LD, Bus. ... Seattle
Shirkey, Emily Frances, Unc. ... LA, Seattle
Shober, Talma Walter, LA, Grad ... Montpelier, Idaho
Shotwell, Margaret, LD, LA ... Seattle
Shouby, John A., LD, Bus ... Ellensburg, Wash
Shuler, Rose Mary, LA, LA, Spokane, Wash
Sho, YU-Ling, LD, Bus. ... Seattle
Sickels, Eleanor Maria, Grad. ... Seattle
Sielk, George Jacob, UD, Bus, Spangle, Wash
Siemens, Lydia Jane, UD, Ed. ... Seattle
Siler, Lillie May, UD, Sci ... Seattle
Silence, Joyce C, Unc, Ed. ... Vancouver, B.C.
Silberthorn, William O., Unc, LA ... Seattle
Silberthorn, William O., Unc, LA ... Seattle
Silverthorn, William O., Unc, LA ... Seattle
Sims, Frances, UD, Ed. ... Springfield, Wash
Simmons, Anna Louemma, UD, Ed. ... Seattle
Simons, R. O., Spec. ... Bus. ... Seattle
Simpson, Fred H., Spec ... Seattle
Simpson, Lorraine Violet, Grad ... Seattle
Sinnott, Alice, LD, LA ... Seattle
Sister, Elizabeth Clare, Unc, Ed ... Seattle
Sister, Francis, Unc, Sci. ... Seattle
Sister, Lucille, LD, LA, WA, WA ... Seattle
Sister, Mary de Sales, Unc, LA ... Seattle
Sister, Gerard, UD, LA ... Seattle
Sister, M. Lamella, UD, Sci. ... Seattle
Sister, Mary M., LD, LA, WA, WA ... Seattle
Sister, Rose Marie, Unc, Ed ... Seattle
Sitz, Blannda D., Unc, LA, WA, WA ... Seattle
Siverson, Edna, LD, LA ... Seattle
Sivertz, Victoria, UD, Sci. ... Seattle
Skagerville, Delta, Unc, Ed. ... Seattle
Skinner, Grace B., Grad. ... Springfield, Mo
Sleumoe, Belinda Agnes, Unc. Sci. ... Seattle
Sloan, Roy H., Spec. Bus ... Seattle
Sloan, Sarah, Unc, Ed. ... Poulsbo, Wash
Smalley, Clarence Edward, Grad. ... New York, N.Y.
Smith, Charlotte, Grad. ... Seattle
Smith, Abigail Jean, Unc, Sci. ... Seattle
Smith, Alfred, AL, Grad. ... Seattle
Smith, Edith Ralston, UD, Ed. ... Twin Falls, Idaho
Smith, Effreda Allen, Grad. ... Seattle
Smith, George Emmas, Jr., Grad ... Seattle
Smith, John W., Spec. ... Bus. ... Seattle
Smith, Joseph B., Spec, Law, Twin Falls, Idaho
Smith, Laura, LD, Sci. ... So. Bend, Wash
Smith, Ole, LA, LA, Spokane, Wash
Smith, Mrs. Ruth Arrilla N., UD, FA, Seattle
Smith, Mrs. Ruth H., Spec, Sci. ... Tacoma, Wash
Smith, Vailea, ED, Grad ... Rock Island, Ill
Smith, Walter A., Unc, Bus. ... Seattle
SUMMER QUARTER STUDENTS—1921

Snyder, Harold A, Fr. Eng.Edmonds, Wash
Snyder, Ida Mae, Unc. Eng.Edmonds, Wash
Snyder, Mabel, Unc. Eng.Edmonds, Wash
Snyder, A. M. Fr. ... Coeur d'Alene, Idaho
Sparks, Percy S. Grad. ... Oregon City, Ore
Sparkling, Robert, Spec. Ed. ... Vancouver, B.C
Spaulding, David Leland, Unc, Law ... Seattle
Spaulding, Emilie S. Unc, Bus.Yakima, Wash
Spear, Ernest D. Grad. ... North Bend, Wash
Speer, Minerva L. UD, Ed ... Everett, Wash
Spencer, Ralph Wellington, Soph. CB ... Seattle
Spencer, Annie Vera, La ... Seattle
Spelling, Otto T. LD, Sci ... Spokane, Wash
Spieseke, Daley Marietta, Grad ... Seattle
Sprague, Renée, Unc, LA ... Seattle
Sprague, Hollister Thompson, Grad ... Seattle
Spratt, Allen, Unc, Law ... Seattle
Springer, Maurice E. UD, Bus.Olympia, Wash
Stead, Dorothy, Grad ... Portland, Ore
Steed, Charles Edward, Spec, LA ... Vancouver, Wash
Steen, Luella, Unc, LA ... Seattle
Starr, Alva Guy, UD, LA ... Albany, Ore
Starr, Frederick R. Soph, BE ... Seattle
Steadman, Grace V, Spec. LA, Vancouver, Wash
Steele, Charles Albert, Spec ... Seattle
Steele, Mattie L. Unc, LA ... Seattle
Steelman, Eleanor, UD, LA ... Seattle
Steelers, Ina Edna, Grad, Jr, Ed ... Seattle
Stevens, Neata, Unc. LA, Cranck Fork, B.C
Steinbach, H. F. UD, Ed.New Rockford, ND
Stevenson, Jacob edward, Ed, LA ... Monroe, Ore
Stenson, William Francis, LD, Sci ... Seattle
Stephens, Inga Agnes, LD, Sci ... Seattle
Stephens, Samuel D, LD, Sci. Eugene, Ore
Stetson, Dorothy L. UD, LA ... Portland, Ore
Sterling, Mrs. Adah, LD, LA ... Seattle
Sterne, Fred Hunt, Soph, BE ... Seattle
Stevens,处 L. Grad, LA ... Edmonds, Wash
Stevens, Blanche W, Unc, Spec.Covallis, Ore
Stevens, Carolyn Augusta, LD, Ed ... Seattle
Stevens, Glen E. UD, Bus.Edmonds, Wash
Stickney, Guy C. Spec ... Bothell, Wash
Stickley, Hilda S. Spec ... Seattle
Stilke, Charlotte S ... Seattle
Stokes, John B. Spec ... Seattle
Stone, Caleb Smith, Jr, LD, Sci ... Seattle
Stone, Corliss Edgerton, LA ... Seattle
Stone, Ethel Gladys, Grad, LA ... Seattle
Stone, Emma Dell, LD, Ed ... Seattle
Stone, Helen Morrison, Grad ... Seattle
Stone, Nellie C. UD, Bus ... Thornton, Wash
Stone, Marion, Spec, LA ... Ellensburg, Wash
Stone, June, UD, Ed ... Spokane, Wash
Stone, Roma Huntington, Grad ... Seattle
Stone, Robert Lawrence, Grad ... Seattle
Storin, Mrs. Charlotte, Unc, LA ... Seattle
Storrie, Carl J. Grad ... Tacoma, Wash
Storrs, Helen Katherine, Spec ... Seattle
Stowasser, Francis, Unc, LA ... Tomah, Wis
Straight, Robert, Spec. Ed.Vancouver, B.C
Strassner, Katherine Janet, UD, Ed ... Seattle
Stratton, Dorothy C. Grad.Forest City, Mo
Stratton, Irving Rodd, LD, LA ... Seattle
Streeter, Gertrude Inez, Grad ... Seattle
Streeter, Gladys, LA, Grad ... Seattle
Strong, Glyde Delight, LD, LA ... Seattle
Stuart, Frank Clair, Spec ... Seattle
Studer, Ruth Anna, LD, Fish ... Seattle
Sturges, Donald, LA, Grad ... Seattle
Stwalley, Calvin, Spec, Ed ... Seattle
Sullivan, Mary, LA, Ed ... Seattle
Sunderland, Elmer W, Grad ... Seattle
Sutherland, John W. Grad ... Salem, Ore
Sutton, Alice Dolores, LD, LA ... Seattle
Sutton, Ethel C. Fr. ES ... Port Angeles, Ore
Swartz, Gladys, LD, Sci ... Seattle
Swazy, Harriette E. Unc, LA, Raymond, Wa
Sweatman, Hazel M. Grad.Great Falls, Mt
Sweezy, Frank E, Unc, Bus ... Seattle
Sweet, Helen Elizabeth, Grad ... Seattle
Swenson, Elaine Isabelle, LD, FA ... Seattle
Switkis, Charles, Spec, Ed ... Renton, Wash
Symington, Edith C. Grad ... St. Louis, Mo
Symington, Robert C. Spec ... St. Louis, Mo

Tachell, Max, UD, FA ... Renton, Wash
Teck, Bernard A, Grad.Montevideo, Minn
Tuck, Helen C, Grad ... Seattle
Tubott, Mrs. L, LA, DA ... Seattle
Tubott, Louis, LA, Grad ... Seattle
Tuttle, George B, Soph, Ch.B.Spokane, Wash
Tungay, Emmett Leo, LD, Bus ... Seattle
Tanner, Josephine, Spec ... Seattle
Tartar, E. B. Grad ... Seattle
Taylor, Susan Esther, LD, Sci. Tacoma, Wa
Teal, Mrs. H L C, UD, FA.Walla Walla, Wash
Tee-Garden, Nellie, Grad ... Seattle
Tee-Garden, Mrs. Hattie, Spec ... Seattle
Tejada, Emmanuel, LA, LA ... Philippines
Terry, Lawrence, Fr, Phr.Tacoma, Wash
Tentsch, Jack Milton, UD, Bus ... Nysaa, Ore
Teris, James, Unc, Bus ... Seattle
Tha, Ed, Spec, LA ... Portland, Ore
Thirìy, Paul Albert, LD, Sci ... Seattle
Thomas, Lee Baldwin, LD, Bus.Sumas, Wash
Thomson, Joe, E. Grad ... Granger, Wash
Thompson, Alice, Unc, FA ... Salem, Ore
Thompson, Arnold Albert, UD, Sci ... Seattle
Thompson, Maude, Unc, Ed ... Seattle
Thompson, Thelma L, UD, LA.Pendleton, Or
Thompson, E H. Unc, Ed, Minneapolis, Minn
Thomson, Ross, LD, Sci ... Seattle
Thor, Blaine, LD, Sci ... Seattle
Thome, Elmer, LA ... Seattle
Thwing, Clarence, Grad.Salt Lake City, Utah
Tilly, Gray S, Unc, Bus ... Hockiam, Wash
Tinch, Edwin Andrew, Spec, FA ... Seattle
Tolman, Tad, Grad ... Portland, Ore
Tomlin, J. Everett, Unc, Ed ... Salem, Ore
Tomlin, Margaret, UD, LA ... Seattle
Toner, Martin, LA, LA ... Seattle
Topping, Willard F, UD, LA ... Seattle
Torland, Paul, Unc, Sci ... Seattle
Town, Pearl Ada, Grad ... Seattle
Towell, Edith Mary, Unc, Ed ... Seattle
Town, Frances Allen, Unc, LA ... Seattle
Towne, Arthur H, LD, LA ... Carroll Wash
Townes, Eleanor Minnie, Grad ... Seattle
Townes, Myrtle, UD, Ed ... Darrington, Wash
Townsend, Arthur C. Spec, Bus ... Seattle
Townswod, Helen L, RD, LD, Bus ... Renton, Wash
Trandum, Theodore Albert, Eng ... Seattle
Travis, Mrs Shal H. UD, FA.Arcadia, Mich
Travick, Margaret F, UD, LA. Opelika, Ala
Trempe, Louis A, Grad ... Seattle
Trotter, Dennis C, Grad ... Seattle
Trotter, George, Spec ... Marysville, Wash
Trout, Alcorn, Grad ... Tacoma, Wash
Troy, Harold Preston, LD, Bus.Olympia, Wa
Troy, Helen, LD, LA ... Juneau Alaska
Tubbs, Ray W. UD, Sci ... Lolo, Mont
Tuck, Joseph, UD, Bus ... China
Tufts, Annabel, Unc, Ed ... Yakima, Wash
Turnau, Angelina, Unc, LA ... Seattle
Turnbull, Mary Lucille, UD, LA
Turnbull, Magnus Harold, LD, LA ... Seattle
Turnbull, Fred A, UD, Ed., Skykomish, Wash
Turner, Herbert Clair, UD, Bus., Seattle
Turner, Lloyd Edwin, Grad., Spokane, Wash
Turner, Theodore Sheldon, Grad., Seattle
Turner, G V, B, Mrs. Marjorie, Wash
Turpin, Harold Lester, UD, Bus., Seattle
Turkle, Hazel Jane, LD, FA.., Seattle
Tweed, Ida E, Grad., Walla Walla, Wash
Twoby, Marguerite, Unc, Sci.

Ulrick, Mrs. Helen Ball, Unc, LA., Seattle
Umbaugh, Harriet Pearl, Grad., Bend, Or
Underhill, Walter Morton, Spec, Butte, Mont
Underwood, Carl S, Grad., McLeansboro, Ill
Underwood, Hugh Coleman, Jr, EB, Seattle
Uns, John Waldemar, Grad., Seattle
Upton, Marliette, LD, Jour., Seattle
Upton, Thomas George, LD, LA., Seattle
Uyeda, Tsuchi, Fr, EB, Seattle

Van, Thie-Chong, UD, Bus., China
Van Brumt, Ella I., Cheney, Wash
Vande B Guy H, Grad., Opportunity, Wash
Van Deventer, B D, Unc., Jour., Seattle
Van Duzee, J B, UD, LA., Seattle
Van Eaton, Harold D, Olympia, Wash
Van Houten, Richard, Kansas City, Mo
VanNoy, Louise Hynes, UD, ED, Seattle
Van Orsmond, Miss Otie P, Unc., LA., Seattle
Van Winkle, M L, Unc., LA, Spokane, Wash
Van Zaand, Ruth, Unc., LA, Bellingham, Wash
Vernon, Elinor Eugenia, Grad., Seattle
Vernon, Wm, Jr, Reg., Jour, Wapato, Wash
Vogel, Catherine, UD, LA., Tacoma, Wash
Van Bho, Max Arthur, Fr, EE, Seattle
Von Erickson, Lyle, Hillyard, Wash
Voscheu, Lou Stits, LD, LA., Buckley, Kan

Wafery, Mary Barbara, Unc, Ed., Seattle
Waite, Netta Marguerite, Grad., Seattle
Walawright, Mary Z, Grad., Tacoma, Wash
Wakefield, Carol, UD, LA., Anacortes, Wash
Walker, Ernest Kenneth, LD, Sci., Seattle
Walker, Maudie E, Unc, Ed., Seattle
Walker, Ruth Coleta L, Unc, LA., Seattle
Walker, William Burwell, LD, LA., Seattle
Wall, Mrs. Loula Ashbury, Spec., Seattle
Wallace, Cecil, Spec., Olympia, Wash
Wallace, Mildred, Unc, Bus., Spokane, Wash
Walsh, William Bay, Spec., Seattle
Walker, Harold John, Unc, LA., Pocah, Col
Wang, Chiu-Han, Spec, Bus., China
War, Victor, LD, Bus., Sank Wash
Warren, Frank Furness, Unc, LA., Seattle
Warren, Paul Christopher, Grad., Seattle
Waseberg, Clarence, Edw, Grad., Seattle
Watkins, Inez, UD, Bus., Hockom, Wash
Watson, Anna Elizabeth, Grad., Seattle
Watson, Mrs. Edith Cocres, Spec., Seattle
Watson, Elizabeth Davis, LD, Sci., Seattle
Wheat, George, Spec, Bus., Seattle
Wheat, William Harris, Jr, EB, Seattle
Wheat, Willis, LD, Bus., Seattle
Wedge, Averi Dudley, Grad., Seattle
Weber, Betty, Grad., Los Angeles, Calif
Weber, Leona E, Grad., Dear, Cal
Weide, Ella Anna, Twain Harte, Calif
Weingarten, Harry, Spec., Seattle
Weinert, Adolph, LD, Sci., Seattle
Weiner, Erwin Arthur, Spec., Mrs.
Wenig, Edward, Grad., Creston, Wash
Wentworth, Mrs. Mildred E, Spec., Seattle
Werner, Oscar B, LD, Bus., Seattle
West, Alice, Spec., Fruitland, Ida
Wester, Lucile, Spec., Fresno, Cal
Westerberg, Inmar S, Grad., Tacoma, Wash
Westfall, Mrs. Marjorie, Wash
Wheaton, Nellie Charlotte, Livingston, Mont
Wheaton, M E, UD, LA., Bellingham, Wash
Wheel, Elate May, Spec., Seattle
Wheel, Martin Earl, Spec, Bus., Seattle
Wheel, Ope Irene, Unc, FA, Superior, Wis
Wheelock, Ernest Eugene, Spec., Seattle
Wheelan, Burton Jones, 1st Law, PII, Seattle
Whitnore, Paul, LD, Bus., Seattle
Whitecomb, Alice E, UD, Ed., Seattle
White, Alice C, Unc, LA., Kalspell, Mont
White, Clara Anna, Yakima, Wash
White, Eva May, LD, LA., Seattle
White, Frances Carol, Spec., Seattle
White, Frances E, Unc, FA, Yakima, Wash
White, Gladys M, UD, LA., Bellingham, Wash
White, Mrs. Luella Arnold, UD, LA, Palouse, Wash
White, Miss Carolyn, Unc, Ed., Seattle
Whitmore, Mrs. Frances Virgil, UD, LA., Seattle
Whitneakc, Hosea A, Grad., Panama, Wash
Whitmore, Helen, Grad, Spokane, Wash
Whitmore, Ireland, Grad., Seattle
Whitney, Jessie Loeyp, Spec.
Whittier, Lyman Kenyon, Unc, BA., Seattle
Widger, Ida, Grad., Seattle
Wells, Ira, Jr, Und, LA., Seattle
Went, Ireland, Grad., Seattle
Wenzy, Elise Louise, Spec., Victoria, B C
Wilby, Ethel Louise, Spec., Seattle
Wilby, William John, Grad., Victoria, B C
Wiley, Stew, UD, LA., Seattle
Williams, Clarence, Grad., Seattle
Williams, Grace Myrtle, Spec., Portland, Or
Williams, Mrs. Mary L, LD, Ed., Seattle
Williams, Rupert J, LA., Seattle
Wills, Avis McCallen, Grad., Naches, Wash
Wills, Cecil Durand, LD, LA., Seattle
Wilson, Emma, Spec, Ed., Seattle
Wilson, Frank T, Spec., LA., Seattle
Wilson, Grace, LD, LA., Seattle
Wilson, Lena Eveline, Grad., Seattle
Wilson, Maxie, LD, LA., Seattle
Wissen, Jesse H, Grad., Yakima, Wash
Windusens, A B, UD, Ed. Medical Lake, Wash
Winninghoff, F L, LD, Sci., Philippine Wash
Winston, Mrs. Bertha, Unc, Bus., Seattle
Winwood, Ralph Parrel, LD, Bus., Seattle
Wise, Robert S, LD, LA., Seattle
Wiser, F L, UD, LA., Seattle
Wolberg, Harry John, Sr, Mines, Seattle
Wolle, Luc Marjory, LD, Sci., Seattle
Wolse, Iona, Grad., Seattle
Wolfe, Martha Brown, LD, Bus., Tacoma Wash
Wollum, B A, LD, LA., New Richmond, Wis
Wong, Frank Carriag, LD, Bus., Seattle
Wood, Arthur Grade, UD, Bus., Payette, Ida
Wood, Harold S, LD, Bus., Davenport, Wash
Wood, Frances, Unc, Bus., Seattle
Woodward, Wm, Grad., Vancouver, B C
Woodward, Harriet, Grd., Seattle
Woodward, S A, Unc, LA., Granite Wash
Worsam, Joseph, LA., Seattle
Worthen, Clifton Boyd, Grad., Lynden, Wash
Worthley, Chauncey Bond, Jr, Unc Tacoma, WA
Ward, John, UC, LA., Seattle
Wright, Jack Willis, LD, LA., Tacoma, Wash
Wright, Jasper C, UD, Ed., Seattle
Wright, Lyman, LD, ED., Edmonds, Wash
Wright, Wm M, Unc, FA, Eatonville, Wash
Wright, Nancy Grace, Unc, Ed., Montrose, Ia
Wright, Parke A, UD, Ed., Prossser, Wash
Wrighter, Helen T, LD, Ed., Yakima, Wash

Yates, Dewey, LD, Bus., Seattle
Ybogos, Marcello, Unc, Bus., Philippines
### Summer Quarter Students—1921

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<td>Young, Dorothy</td>
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### Short Course in Fisheries—1922

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<td>Amsman, Joseph M.</td>
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<td>Burr, J B</td>
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<td>Casperson, Newt</td>
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<td>Dwybward, Peter F.</td>
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<td>Green, P. H.</td>
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<td>Hallerman, Martin F.</td>
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<td>Halverson, Louis K.</td>
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<td>Hansen, Karl A S.</td>
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<td>MacKonde, J A.</td>
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<td>Norman, George</td>
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<td>Rosenberg, Elmar</td>
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### Short Course in Forestry—1922

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<td>Brokenshire, Wesley J.</td>
<td>San Jose, Cal</td>
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<td>Melgs, Samuel G.</td>
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<td>Writt, George E.</td>
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### Winter Mining Session—1922

<table>
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<tr>
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<td>Anderson, Hjalmar A.</td>
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<td>Brown, Marshall W.</td>
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### UNIVERSITY OF WASHINGTON

#### SUMMARY OF ENROLLMENT 1921-1922

**By Schools and Colleges**

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**Total**                  | 1782           | 1613           | 1890           |                | 4586  |

**NOTE.** Columns 1, 2, 4, 5, and 6 represent census figures—i.e. the enrollment taken on a stated day within the first month of a term or quarter. Columns 8 and 7 show figures representing the number of individuals; column 8 the number registered during the summer quarter, column 7 the number registered during the regular academic year. For comparison with other institutions the figures in columns 8 and 7 should be used, as these are the customary catalogue figures.
### SUMMARY OF ENROLLMENT 1921-1922

**By Classes**

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<th>Classes</th>
<th>SUMMER QUARTER</th>
<th>AUTUMN QUARTER</th>
<th>WINTER QUARTER</th>
<th>SPRING QUARTER</th>
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<td>1518</td>
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**TOTAL STUDENTS IN RESIDENCE**

- During regular academic year ........................................ 5410
- During summer quarter .................................................. 1980
- Deduct summer quarter duplicates ................................... 709

**EXTENSION STUDENTS**

- Correspondence ......................................................... 553
- Men ........................................................................ 218
- Women ..................................................................... 335
- Extension Classes ........................................................ 1048
- Men ........................................................................ 319
- Women ..................................................................... 729
- Total Extension ............................................................ 1601

**Notes**

1. The Extension Service enrolls students at any time during the twelve months. The figures given indicate the number actually studying by correspondence, or in extension classes during some part of the year beginning July 1, 1921.

2. Columns 1, 2, 4, 5, and 6 represent census figures, i.e., the enrollment taken on a stated day within the first month of a term or quarter. Columns 3 and 7 show figures representing the number of individuals; column 3 the number registered during the summer quarter, column 7 the number registered during the regular academic year. For comparison with other institutions the figures in columns 3 and 7 should be used, as these are the customary catalogue figures.
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