

The University campus, comprising 605 acres, lies between Fifteenth Avenue North-east and Lake Washington, and East Forty-fifth Street and Lake Union. The 15th Ave. N.E.-East 65th St., Ravenna, and Montlake trolley coach lines run one block west of the campus; Ravenna trolley coach and Laurelhurst-Sand Point motor coach lines pass the campus on the north. 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.

BULLETIN
UNIVERSITY OF WASHINGTON



CATALOGUE
1940-1941

GENERAL SERIES

JULY 27, 1940

No. 618

Published weekly at Seattle, Washington, by the University of Washington from October to July, inclusive. No issues in August and September. Entered as second-class matter at Seattle, Washington, under the Act of August 24, 1912.

NOTICE

The University and its various colleges and schools reserve the right to change the rules regulating admission to, instruction in and graduation from the University and its various divisions and any other regulations affecting the student body. 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 or change fees at any time.

CONTENTS

	Page
MAP.....	2
CALENDAR.....	8
BOARD OF REGENTS.....	10
OFFICERS OF ADMINISTRATION.....	11
BOARDS AND COMMITTEES.....	15
UNIVERSITY SENATE.....	16
FACULTY.....	18
THE UNIVERSITY OF WASHINGTON.....	49
THE UNIVERSITY ORGANIZATION.....	50

Section I. General Information

GENERAL INFORMATION.....	51
Admission to the University.....	51
Admission Requirements.....	51
Registration.....	56
Expenses.....	57
Scholastic Regulations.....	61
Requirements for Degrees.....	61
Honor Awards, Fellowships, Scholarships, Prizes and Awards.....	67
Student Welfare.....	73
Associations and Clubs.....	75
Student Conduct and Activities.....	76

Section II. Announcement of Curricula

COLLEGE OF ARTS AND SCIENCES.....	79
Entrance Requirements.....	79
Curricula.....	80
Anatomy.....	81
Anthropology.....	81
Architecture.....	82
Art.....	83
Bacteriology.....	86
Biological Sciences.....	87
Botany.....	88
Chemistry.....	88
Classical Languages and Literature.....	90
Economics.....	91
English.....	91
Fisheries.....	94
Food Technology.....	95
General Literature.....	96
General Studies.....	96
Geography.....	97
Geology.....	97
Germanic Languages and Literature.....	98
History.....	99
Home Economics.....	100

CONTENTS—(Continued)

	Page
Journalism.....	103
Librarianship.....	107
Mathematics.....	108
Music.....	109
Nursing Education.....	113
Oriental Studies.....	116
Philosophy.....	117
Physical and Health Education.....	117
Physics.....	121
Political Science.....	122
Pre-education.....	122
Pre-law.....	122
Pre-library.....	123
Pre-medicine.....	124
Pre-dentistry.....	124
Psychology.....	125
Romanic Languages and Literature.....	125
Scandinavian Languages and Literature.....	126
Sociology.....	126
Zoology.....	127
 COLLEGE OF ECONOMICS AND BUSINESS.....	 127
Admission and Expenses.....	127
Requirements for Graduation.....	128
 COLLEGE OF EDUCATION.....	 131
General Requirements.....	131
Elective Departmental Curricula.....	131
Graduation.....	132
Certification.....	133
 COLLEGE OF ENGINEERING.....	 137
Entrance Requirements.....	138
Curricula.....	139
Military Science and Tactics.....	144
Naval Science and Tactics.....	146
 COLLEGE OF FORESTRY.....	 147
Entrance Requirements.....	147
Curricula.....	147
 GRADUATE SCHOOL.....	 150
Admission.....	150
Degrees.....	151
 COLLEGE OF MINES.....	 154
Admission Requirements.....	154
Degrees.....	154
Curricula.....	155
 COLLEGE OF PHARMACY.....	 157
Admission Requirements.....	157
Degrees.....	157
Curricula.....	157

CONTENTS—(Continued) Section III. Descriptions of Courses

	Page
DEPARTMENTS OF INSTRUCTION	
Aeronautical Engineering.....	161
Anatomy.....	162
Anthropology.....	162
Architecture.....	164
Art.....	166
Astronomy.....	169
Bacteriology and Pathology.....	169
Botany.....	170
Chemistry and Chemical Engineering.....	173
Civil Engineering.....	177
Classical Languages and Literature.....	180
Economics and Business.....	184
Education.....	190
Electrical Engineering.....	194
English.....	196
Fisheries.....	204
Forestry and Lumbering.....	205
General Engineering.....	208
General Literature.....	208
General Studies.....	208
Geography.....	209
Geology.....	211
Germanic Languages and Literature.....	213
History.....	216
Home Economics.....	219
Journalism.....	223
Law.....	224
Liberal Arts.....	227
Librarianship.....	227
Mathematics.....	228
Mechanical Engineering.....	231
Military Science and Tactics.....	232
Mining, Metallurgical and Ceramic Engineering.....	234
Music.....	237
Naval Science and Tactics.....	240
Naval Aviation Training.....	241
Nursing Education.....	242
Oceanographic Laboratories.....	245
Oriental Studies.....	246
Pharmacy, Pharmacognosy, Pharmaceutical Chemistry and Toxicology, and Pharmacology.....	248
Philosophy.....	250
Physical and Health Education.....	251
Physics.....	255
Political Science.....	257
Psychology.....	261
Romanic Languages and Literature.....	262
Scandinavian Languages and Literature.....	266
Sociology.....	267
Graduate School of Social Work.....	270
Zoology and Physiology.....	273
SUMMARY OF DEGREES, DIPLOMAS, AND CERTIFICATES GRANTED.....	276
SUMMARY OF ENROLLMENT.....	277

THE UNIVERSITY CALENDAR FOR 1940-1941

AUTUMN QUARTER

Preferred registration period for students advised in the spring.....Sept. 9 to Sept. 13, 4:30 p. m.
Fees must be paid in advance of registration
Registration dates for all students.....Sept. 16 to Sept. 28, 12 m.
Fees must be paid in advance of registration
Last registration day before beginning of instruction.....Saturday, Sept. 28, 12 m.
Special instruction for new freshmen.....Begins 9 a. m., Sept. 27; ends Sept. 28
College Aptitude Test (Room 233 Philosophy Hall).....Sept. 28, 8 a. m.
Instruction begins.....Monday, September 30, 8 a. m.
President's annual address.....Friday, October 4, 11 a. m.
Last day to register with late fee, and to add a course.....Saturday, October 5, 12 m.
President's reception to new members of the faculty.....Thursday, October 17, 8:30 p. m.
Last day to withdraw and receive a "W" without grade.....Saturday, November 9, 12 m.
Armistice and Admission Day (Holiday).....Monday, November 11
President's reception to parents of new freshmen.....Tuesday, November 19, 7:30 p.m.
Thanksgiving recess begins.....Wednesday, November 20, 6 p. m.
Thanksgiving recess ends.....Monday, November 25, 8 a. m.
Instruction ends.....Wednesday, December 18, 6 p. m.

WINTER QUARTER

Preferred registration period for students advised in the spring.....November 15 to November 20, 4:30 p. m.
Registration dates for all students.....November 25 to December 13, 4:30 p. m.
Section reservations cancelled if tuition is not paid by.....Wednesday, December 18, 4:30 p. m.
Registration dates for students not previously registered.....December 30 to January 3, 4:30 p. m.
During this period, fees must be paid in advance of registration
Students may not register December 16 to 28
Last registration day before the beginning of instruction.....Fri., Jan. 3, 4:30 p. m.
Instruction begins.....Monday, January 6, 8 a. m.
Last day to register with late fee, and to add a course.....Saturday, January 11, 12 m.
College Aptitude Test (233 Phil. Hall).....Mon., Jan. 13, 12 m. or Tues., Jan. 14, 8 a. m.
Last day to withdraw and receive a "W" without grade.....Sat., February 15, 12 m.
Washington's Birthday (Founder's Day and Legal Holiday).....Saturday, February 22
Instruction ends.....Friday, March 21, 6 p. m.

SPRING QUARTER

Preferred registration period for students advised in the spring....Feb. 24 to Feb. 27, 4:30 p. m.
Registration dates for all students.....March 3 to March 14, 4:30 p. m.
Section reservations cancelled if tuition is not paid byFriday, March 21, 4:30 p. m.
Registration dates for students not previously registered.....March 26 to March 29, 12 m.
During this period, fees must be paid in advance of registration
Students may not register March 15 to 25
Last registration day before beginning of instruction.....Saturday, March 29, 12 m.
Instruction begins.....Monday, March 31, 8 a. m.
Last day to register with late fee, and to add a course.....Saturday, April 5, 12 m.
College Aptitude Test (233 Phil. Hall)Mon. April 7, 12 m., or Tues., April 8, 8 a. m.
Last day to withdraw and receive a "W" without grade.....Saturday, May 10, 12 m.
Honors Convocation.....Wednesday, May 14, 10 a. m.
Governor's Day.....Thursday, May 22
Memorial Day (Holiday).....Friday, May 30
Baccalaureate Sunday.....Sunday, June 8
Instruction ends.....Friday, June 13, 6 p. m.
Class Day and Alumni Day.....Saturday, June 14
Commencement.....Saturday, June 14

SUMMER QUARTER

Mail registration closes.....May 25, 12 m.
 Registration begins.....May 20, 8 a. m.
 Registration ends.....June 18, 4:30 p. m.
 Instruction begins.....Wednesday, June 19, 7:30 a. m.
 College Aptitude Test (233 Philosophy Hall).....Monday, June 24, 12 m.
 Independence Day (Holiday)Thursday, July 4
 Last day to withdraw and receive "W" without grade (1st term).....Wednesday, July 3,
 4:30 p. m.
 Last day to withdraw and receive "W" without grade (full quarter).....Wednesday, July 17,
 4:30 p. m.
 First term ends.....Wednesday, July 17, 6:00 p. m.

Second Term

Mail registration closes.....June 29, 12 m.
 Registration begins.....May 20, 8 a. m.
 Registration ends.....July 17, 4:30 p. m.
 Instruction begins.....Thursday, July 18, 7:30 a. m.
 College Aptitude Test (233 Philosophy Hall).....Monday, July 29, 12 m.
 Last day to withdraw and receive "W" without grade (2nd term).Thursday, August 1, 4:30 p. m.
 Second term ends.....Friday, August 16, 6:00 p. m.

Law School

Mail registration closes.....May 18, 12 m.
 Registration dates.....May 20 to June 11
 Instruction begins.....Wednesday, June 12, 8:00 a. m.
 Last day to add a course.....Tuesday, June 18, 4:30 p. m.
 Independence Day (Holiday).....Thursday, July 4
 Last day to withdraw and receive "W" without grade.....Friday, July 19, 4:30 p. m.
 Instruction ends.....Thursday, August 22, 6:00 p. m.
 Instruction begins.....Monday, June 10, 8 a. m.
 Instruction ends.....Friday, August 23, 6 p. m.

BOARD OF REGENTS

WERNER A. RUPP, President.....	Aberdeen
Term ends March, 1945	
WINLOCK W. MILLER, Vice President.....	Seattle
Term ends March, 1941	
THOMAS BALMER.....	Seattle
Term ends March, 1941	
PHILIP D. MACBRIDE.....	Seattle
Term ends March, 1944	
EDWARD P. RYAN.....	Spokane
Term ends March, 1940	
ALFRED SHEMANSKI.....	Seattle
Term ends March, 1944	
(VACANCY NOT FILLED).....	_____

HERBERT T. CONDON, Secretary

Committees of the Board of Regents

Buildings and Grounds.....	Miller, Rupp, Shemanski
Executive.....	Balmer, Macbride, Miller, Shemanski
Finance.....	Macbride, Shemanski, Ryan
University Lands.....	Rupp, Miller, Ryan
University Welfare.....	Ryan, Macbride, Rupp

University of Washington Alumni Association

President.....	Merville McInnis, '21
Vice President	Herbert Gardner, '29
Vice President	Alice Frein Johnson, '22
Treasurer.....	Martin Nelson, '33
Secretary.....	R. Bronsdon Harris, '31

OFFICERS OF ADMINISTRATION

LEE PAUL SIEG, Ph.D., LL.D.....President of the University

The College of Arts and Sciences

EDWARD HENRY LAUER, Ph.D.....Dean of the College of Arts and Sciences
 DAVID THOMSON, B.A., LL.D.....Vice President Emeritus; Vice Dean of
 the College of Arts and Sciences
 HARVEY BRUCE DENSMORE, B.A.....Chairman, General Studies
 RAY L. ECKMANN, B.B.A.....Administrative Director of the School of Physical and
 Health Education
 WALTER F. ISAACS, B.S.(F.A.).....Director of the School of Art
 VERNON McKENZIE, M.A.....Director of the School of Journalism
 EFFIE I. RAITT, M.A.....Director of the School of Home Economics
 ELIZABETH S. SOULE, M.A.....Director of the School of Nursing Education
 HARLAN THOMAS, B.S.....Director Emeritus of the School of Architecture
 WILLIAM F. THOMPSON, Ph.D.....Director of the School of Fisheries
 CARL PAIGE WOOD, M.A.....Director of the School of Music
 RUTH WORDEN, B.A.....Director of the School of Librarianship

The Professional and Graduate Schools and Colleges

JUDSON F. FALKNOR, B.S., LL.B.....Dean of the School of Law
 FOREST JACKSON GOODRICH, Ph.C., Ph.D.....Dean of the College of Pharmacy
 EDGAR ALLAN LOEW, E.E.....Dean of the College of Engineering
 CARL EDWARD MAGNUSSON, E.E., Ph.D.....Dean Emeritus of the College of Engineering
 FREDERICK MORGAN PADELFORD, Ph.D., LL.D.....Dean of the Graduate School
 ERNEST F. WITTE, Ph.D.....Director of the Graduate School of Social Work
 FRANCIS FOUNTAIN POWERS, Ph.D.....Dean of the College of Education
 FREDERICK ELMER BOLTON, Ph.D.....Dean Emeritus of the College of Education
 HOWARD HALL PRESTON, Ph.D.....Dean of the College of Economics and Business
 MILNOR ROBERTS, B.A.....Dean of the College of Mines
 HUGO WINKENWERDER, M.F.....Dean of the College of Forestry

Other Administrative Officers

MARY IOLA BASH, B.A.....Associate Dean of Women
 WILLIAM BOTZER, LL.B.....Assistant Dean of Men
 HENRY ALFRED BURD, Ph.D.....Director of the Summer Quarter
 HERBERT THOMAS CONDON, LL.B.....Dean of Students
 RAYMOND C. DAVIS.....Comptroller
 RAY L. ECKMANN, B.B.A.....Director of Student Activities
 MAX HIPKOE.....Purchasing Agent
 IRVIN HOFF, B.A.....Registrar
 H. C. HUNTER.....Director, University News Service
 CHARLES CULBERTSON MAY, B.S.(C.E.).....Superintendent of Buildings and Grounds
 DEAN S. NEWHOUSE, B.A.....Dean of Men
 ROBERT W. O'BRIEN, A.B., M.A.....Assistant to the Dean of the College of
 Arts and Sciences
 EVERETT I. ROLFF, B.A.....Director of Publications
 CHARLES WESLEY SMITH, B.A., B.L.S.....Librarian
 HARRY EDWIN SMITH, Ph.D.....Director of the Extension Service
 NELSON A. WAHLSTROM, B.B.A.....Assistant Comptroller
 MAY DUNN WARD, M.A.....Acting Dean of Women
 C. KEN WEIDNER.....Assistant Superintendent of Buildings and Grounds
 LOIS J. WENTWORTH, B.A.....Assistant to the Dean of the Graduate School

LIBRARY STAFF

Smith, Charles Wesley, B.A., B.L.S. *Librarian*
 Richards, John Stewart, B.A. (L.S.), M.A. *Executive Assistant*
 Christoffers, Ethel Margaret, Ph.B., B.S. (L.S.) *Reference Librarian*
 Johns, Helen, B.A., Cert. (L.S.) *Circulation Librarian*
 Moseley, Maud, B.A., B.S. (L.S.) *Catalogue Librarian*
 Putnam, Marguerite Eleanor, B.A., B.S. (L.S.) *Acquisitions Librarian*
 Appleton, Marion Brymner, B.A., B.S. (L.S.) *Senior Assistant,*
 Circulation Division
 Arkley, Cecilia, B.A., B.S. (L.S.) *Senior Assistant, Circulation Division*
 Asheim, Lester Eugene, B.A., B.A. in Librarianship *Junior Librarian,*
 Reference Division
 Cavitt, Mary, B.A., B.S. (L.S.) *Senior Assistant, Circulation Division*
 Conklin, Roberta, B.A., B.A. in Librarianship *Junior Librarian,*
 Acquisitions Division
 Cooper, Dorothy Margaret, B.A., B.S. (L.S.) *Junior Librarian,*
 Circulation Division
 d'Urbal, Madeleine M., B.A., B.S. (L.S.) *Junior Librarian, Catalogue Division*
 Ferguson, Elizabeth Margaret, B.S., B.A. in Librarianship *Senior Assistant,*
 Reference Division
 Gilchrist, Madeline, B.A., B.S. (L.S.) *Parrington Branch Librarian*
 Grier, Mary Catharine, B.S., B.S. (L.S.) *Senior Librarian, Reference Division*
 Hale, Ruth Elinor, B.A., B.S. (L.S.) *Senior Librarian, Acquisitions Division*
 Heathcote, Lesley Muriel, B.S. (L.S.), M.A. *Senior Librarian,*
 Acquisitions Division
 Jones, Elinor Smiley, B.S., B.A. in Librarianship *Senior Assistant,*
 Reference Division
 Jones, Winnifred, B.S., B.S. (L.S.) *Senior Librarian, Reference Division*
 Keefer, Mary, B.A., B.A. in Librarianship *Junior Librarian,*
 Catalogue Division
 Kelly, Clara J., B.S., B.S. (L.S.) *Senior Librarian, Reference Division*
 Lyons, Hermiena Marion, B.A., B.S. (L.S.) *Senior Assistant!,*
 Circulation Division
 McCutchen, Lydia May, B.A., Cert. (L.S.) *Senior Librarian,*
 Acquisitions Division
 Mooney, Jeannette Pearl, B.A., B.S. (L.S.) *Senior Assistant, Parrington Branch*
 Norman, Elizabeth, B.A., B.S. (L.S.) *Senior Librarian, Circulation Division*
 Shorrock, Bernice F., B.A., B.A. in Librarianship *Junior Librarian,*
 Reference Division
 Smith, Marjorie D., B.A., B.S. (L.S.) *Junior Librarian, Catalogue Division*
 Swain, Olive, B.S., B.S. (L.S.) *Senior Librarian, Catalogue Division*
 Todd, Ronald, B.A., B.S. (L.S.) *Senior Librarian, Reference Division*
 Tucker, Lena Lucile, B.S. (L.S.), M.A. *Senior Librarian, Catalogue Division*
 Wright, Joyce, B.A., B.A. in Librarianship *Junior Librarian,*
 Reference Division

Law Library

Beardsley, Arthur Sydney, LL.B., B.S. (L.S.), M.A., Ph.D. *Law Librarian*
 Gould, Marian, B.A., LL.B., BA. (L.S.) *Assistant Law Librarian*
 Hoard, Mary, B.A., LL.B., LL.M., B.S. (L.S.) *Catalogue Librarian*

UNITED STATES ARMY RESERVE OFFICERS' TRAINING CORPS

Richards, Willard K., B.S.....	<i>Lieutenant Colonel, retired</i>
Quesenberry, Marshall H., B.S.....	<i>Lieutenant Colonel, Infantry</i>
Pierce, Harry R., B.S.....	<i>Lieutenant-Colonel, C.A.C.</i>
Parker, Thomas R.....	<i>Major, C.A.C.</i>
Owens, Charles H., LL.B.....	<i>Major, Infantry</i>
Ames, George W., B.A.....	<i>Major, C.A.C.</i>
Spoerry, Gottfried W., B.Pd., M.Pd.....	<i>Major, Infantry</i>
Wilson, Auston M., Jr., B.S.....	<i>Major, C.A.C.</i>
Ramsey, John W.....	<i>Captain, retired</i>
Hogwood, Joseph L.....	<i>Staff Sergeant</i>
Collins, Floyd.....	<i>Staff Sergeant</i>
Hoffman, Franklin A.....	<i>Staff Sergeant</i>
Moore, Maurice L.....	<i>Sergeant</i>
Chandler, Charles H.....	<i>Sergeant</i>
Kimbrough, Harold F.....	<i>Sergeant</i>
Whitchurch, Roy B.....	<i>Sergeant</i>
Roberts, John O.....	<i>Sergeant</i>
Gage, Hazen T.....	<i>Sergeant</i>
Freeman, Charles E.....	<i>Sergeant</i>
Dragneff, Nicholas W.....	<i>Sergeant</i>
Harrison, Thomas L.....	<i>Sergeant</i>

UNITED STATES NAVAL RESERVE OFFICERS' TRAINING CORPS

Barr, Eric L., B.S., Ph.D.....	<i>Captain, U.S. Navy, retired</i>
Wood, Ralph F.....	<i>Captain, U.S. Navy</i>
Garrison, Harry A., A.B., M.D.....	<i>Captain (M.C.), U.S. Navy</i>
Kelly, Laurence E., B.S.....	<i>Commander, U.S. Navy</i>
Menocal, George L., B.S.....	<i>Lieutenant-Commander, U.S. Navy</i>
Nelson, Frederick J., B.S., M.S.....	<i>Lieutenant-Commander, U.S. Navy</i>
Birtwell, Daniel T., Jr., B.S.....	<i>Lieutenant, U.S. Navy</i>
Weigle, Claude L., B.S.....	<i>Lieutenant, U.S. Navy</i>
Campbell, Redden	<i>Chief Yeoman, U.S.F.R.</i>
Sincere, W. F. A.....	<i>Chief Turret Captain, U.S.F.R.</i>
Hoffman, Jesse L.....	<i>Chief Turret Captain, U.S.F.R.</i>
Stevenson, Frank W.....	<i>Chief Radioman, U.S.F.R.</i>

OFFICE OF THE REGISTRAR

Hoff, Irvin, B.A.....	<i>Registrar</i>
Toner, Ethelyn, B.A.....	<i>Assistant to the Registrar</i>
Higgins, Wilma R., B.B.A.....	<i>Secretary</i>
Willard, Frances, B.A.....	<i>Credentials</i>
Brugger, Minnie Kraus, B.A.....	<i>Graduation</i>
Saunders, Virginia, B.A.....	<i>Recording</i>
Pape, Eva Gene.....	<i>Registration</i>
Burnett, Helen Carlisle, B.S.....	<i>Room Assignments</i>
Tate, Frances E.....	<i>Transcripts</i>

THE MUSEUM

Gunther, Erna, Ph.D.....*Director*
Rathbun, Samuel F.....*Honorary Curator of Birds*
Flahaut, Martha Reekie, B.A., B.S.(L.S.).....*Museum Assistant*
Ray, Verne F., Ph.D.....*Instructor in Anthropology*
Ernesti, Roger, B.A.....*Docent*

THE HENRY ART GALLERY

Isaacs, Walter F., B.S.(F.A.).....*Director*
Savery, Halley*Curator*

ENGINEERING EXPERIMENT STATION

Magnusson, Carl Edward, Ph.D., E.E.....*Director*
Kirsten, Frederick Kurt, B.S., E.E.....*Aeronautical Engineering*
Benson, Henry Kreitzer, Ph.D.....*Chemical Engineering*
Harris, Charles William, B.S., C.E.....*Civil Engineering*
Loew, Edgar Allan, B.S., E.E.....*Electrical Engineering*
Grondal, Bror Leonard, B.A., M.S.F.....*Forest Products*
Goodspeed, George Edward, B.S. (Min.E.).....*Geology*
Wilson, George Samuel, B.S.....*Mechanical Engineering*
Roberts, Milnor, B.A.....*Mining and Metallurgy*
Osborn, Frederick Arthur, Ph.D.....*Physics Standards and Tests*

OCEANOGRAPHIC LABORATORIES

Thompson, Thomas Gordon, Ph.D.....*Director*

OFFICE OF STATE CHEMIST

Johnson, Charles Willis, Ph.C., Ph.D.....*Director*
Ellegood, John A., M.S.....*Assistant State Chemist*

NORTHWEST EXPERIMENT STATION, UNITED STATES BUREAU OF MINES

Yancey, Harry Fagan, Ph.D.....*Supervising Engineer*
Johnson, Kenneth Alexander, B.S.....*Assistant Chemist*
Westfield, James, Jr.....*Assistant Mining Engineer*
Geer, M. R., M.S. in Min.E.....*Junior Mining Engineer*
Skinner, Kenneth G., M.S. in Cer.E.....*Junior Chemical Engineer*
Zane, R. E., M.S. in Met.E.....*Junior Chemical Engineer*
Keating, Henry T.....*Principal Clerk*
Towle, Harriett E.....*Clerk*
Lance, William E.....*Mill Mechanic*

UNIVERSITY HEALTH SERVICE

Hall, David Connolly, M.D.....*University Health Officer*
Neumayr, George H., M.D.....*Assistant Health Officer*
Rice, Myrtle Alley, M.D.....*Assistant Health Officer*
Lester, Charles N., M.D.....*Assistant Health Officer*

BOARDS AND COMMITTEES*

1939-1940

Administrative

Admissions—Dean of the College or School concerned, and Registrar.

Board of Deans—Lauer, Condon, Falknor, Goodrich, Lcew, Newhouse, Padelford,

Powers, Preston, Roberts, Thomson, Ward, Winkenwerder, and Registrar.

Director of Graduate Publications—Padelford.

Traffic Judge—Richards.

Executive Committee of University Senate

Densmore, Eastwood, Guthrie, Harrison, Mander, Tartar; Registrar, secretary.

Committees of the Faculty

Athletics—Chairman, Nottelmann; Barksdale, Griffith, Lauer, D. H. Mackenzie, May, Quainton, Savage.

Budget—Chairman, Tartar; W. E. Cox, Steiner, Tymstra, Winger; Comptroller, ex officio.

Campus Planning—Chairman, Eastwood; Fuller, Harrison, Kirsten, Loew, H. H. Martin, Olschewsky, Raitt; Superintendent of Buildings and Grounds, ex officio.

Curriculum—Chairman, Dakan; and the chairman of the college curriculum committees, together with a representative from each college or school having no curriculum committee.

Graduation—Chairman, Grondal; Coombs, Cornu, Cramlet, A. V. Eastman, Lutey, Skinner; Registrar, ex officio.

Honors—Chairman, Densmore; Bixby, Daniels, Demmery, Gundlach, H. C. Meyer.

Library—Chairman, C. W. Smith; Beardsley, Benham, Carpenter, K. C. Cole, Padelford, Skinner, Thomson, Weaver, Winslow.

Public Exercises—Chairman, Daniels; Corbally, David Hall, Jerbert, Lindblom, A. L. Miller, Powell, Welke.

Public Relations—Chairman, Burd; Christian, Farquharson, J. K. Hall, C. E. Martin; Comptroller, ex officio; Director, University News Service, ex officio.

Radio—Chairman, Loew; Denny, Hughes, Lauer, H. E. Smith, Stevenson Smith, Utterback, Wood; Director, University News Service, ex officio.

Relations with Secondary Schools and Colleges—Chairman, E. B. Stevens; Bolton, T. R. Cole, Gates, Hutchinson, Powers, Sperlin, Utterback, Vail, Warner; Registrar, ex officio.

Rhodes Scholarships—Chairman, Harrison; K. C. Cole, Costigan, Densmore, Quainton.

Rules—Chairman, O'Bryan; Goodrich, Lawson, Thomson, G. S. Wilson; Registrar, ex officio.

Schedule and Registration—Chairman, Griffith; Dakan, Nostrand, Powell, Rowntree, Van Horn; ex officio: Registrar, Assistant to the Dean of the College of Arts and Sciences.

Student Affairs and Student Welfare—Chairman, Butterbaugh; Condon, E. M. Draper, Dresslar, McMinn, Newhouse, Soule, Ward.

Student Campus Organizations—Chairman, Farwell; Bash, Blankenship, Butterbaugh, M. Fish, A. L. Miller, Read, Seeman, Zillman.

Student Discipline—Chairman, Sholley; M. E. Benson, Soule, E. R. Wilcox, W. R. Wilson.

Tenure and Academic Freedom—Chairman, Steiner; Cornu, Falknor, Grondal, Gubernet, Loughridge, Mund, Rowntree, Tartar, G. S. Wilson.

Graduate School Committees

Graduate Publications—Padelford, Carpenter, Church, K. C. Cole, Goodspeed, Griffith, Gundlach, Gunther, Rigg, C. W. Smith; Director of Publications, ex officio.

University Research—Magnusson, Carpenter, Lauer, Padelford, Preston, Weaver.

*The President is ex officio member of all University boards and committees.

UNIVERSITY SENATE FOR 1940-1941

A. Humanities

I. LETTERS

Terms expire Spring, 1943:

Christian (Journ.)
Lawson (English)
D. Thomson (Classics)
W.C.E. Wilson (Rom. Langs.)

Terms expire Spring, 1942:

M. E. Benson (Journ.)
Garcia-Prada (Rom. Langs.)
Read (Classics)
Zillman (English)

Terms expire Spring, 1941:

Densmore (Classics)
Griffith (English)
Harrison (English)
Stirling (English)

II. ART

Terms expire Spring, 1943:

McKay (Music)
Penington (Art)

Terms expire Spring, 1942:

E. G. Benson (Art)
Munro (Music)

Terms expire Spring, 1941:

Isaacs (Art)
Wood (Music)

B. Science

III. GENERAL

Terms expire Spring, 1943:

Carpenter (Math.)
Robinson (Chem.)

Terms expire Spring, 1942:

Henry (Bact.)
Osborn (Physics)

Terms expire Spring, 1941:

Goodspeed (Geol.)
Tartar (Chem.)

IV. TECHNOLOGY

Terms expire Spring, 1943:

H. K. Benson (Chem. Engr.)
Jensen (Gen. Engr.)
McMinn (Mech. Engr.)
Pearce (Forestry)

Terms expire Spring, 1942:

Barr (Nav. Sci.)
Eastman (Elec. Engr.)
Kirsten (Aero. Engr.)
Smith (Civil Engr.)

Terms expire Spring, 1941:

Eastwood (A.&M. Engr.)
Magnusson (Elec. Engr.)
Van Horn (Civil Engr.)
Wilcox (Gen. Engr.)

C. Social Studies

V. GENERAL

Terms expire Spring, 1943:

Nelson (Phil.)
W. R. Wilson (Psych.)

Terms expire Spring, 1942:

Mander (Pol. Sci.)
Rader (Phil.)

Terms expire Spring, 1941:

Guthrie (Psych.)
Quainton (Hist.)

VI. APPLIED

Terms expire Spring, 1943:

Farwell (E.&B.)
Foster (P.E. for Men)
Lorig (E.&B.)
Nottelmann (Law)

Terms expire Spring, 1942:

Corbally (Educ.)
Denny (Home Econ.)
Hall (E.&B.)
Rowntree (Home Econ.)

Terms expire Spring, 1941:

Ayer (Law)
Burd (E.&B.)
Raitt (Home Econ.)
Soule (Nurs.)

ALPHABETICAL LIST OF THE UNIVERSITY FACULTY

1940-1941

- Lee Paul Sieg, 1934.....President of the University
B.S., 1900, M.S., 1901, Ph.D., 1910, Iowa; LL.D., 1934, Pittsburgh
- Adams, Edwin Hubbard, 1939.....Associate in English
B.A., 1927, M.A., 1931, Washington State
- Adams, Henrietta M., 1929 (1937).....Associate Professor of Nursing Education;
Director of Nursing Education, Hospital Divisions
R.N., 1920, Seattle General Hospital; B.S., 1926, M.S., 1934, Washington
- Alden, Charles H., 1928.....Lecturer in Architecture
B.S., 1890, Massachusetts Institute of Technology
- Alderman, Bissell, 1939.....Instructor in Architecture
B.Arch., 1935, M.Arch., 1937, Massachusetts Institute of Technology
- Alfonso, Marie, 1920 (1936).....Associate Professor of Librarianship
B.A., 1913, Nebraska; B.S.(L.S.), 1921, Washington
- Ames, George W., Major, C.A.C., 1937.....Assistant Professor of Military
Science and Tactics
B.A., 1902, Washington; Coast Artillery School, 1929
- Anderson, Elam D., 1940.....Lecturer in Nursing Education
A.B., Utah; M.D., Northwestern
- Anderson, Sylvia Finlay, 1920.....Associate in English
B.A., 1919, M.A., 1923, Washington
- Anderson, Victoria, 1937.....Associate in English
B.A., 1914, M.A., 1917, Washington
- Andrews, Siri, 1929 (1937).....Assistant Professor of Librarianship
B.S.(L.S.), 1930, Washington
- Ankele, Felice Charlotte, 1926 (1936).....Instructor in German
B.A., 1925, M.A., 1926, Ph.D., 1936, Washington
- Arestad, Sverre, 1937 (1940).....Instructor in Scandinavian Languages
and Literature
B.A., 1929, Ph.D., 1938, Washington
- Auernheimer, August A., 1928 (1937).....Assistant Professor of
Physical Education
B.P.E., Normal College; M.A., 1932, Columbia
- Ayer, Leslie James, 1916.....Professor of Law
B.S., 1899, Upper Iowa; J.D., 1906, Chicago
- Ayres, Clarence Edwin, 1940.....Professor of Economics
B.A., 1912, M.A., 1914, Brown; Ph.D., 1917, Chicago
- Bailey, Alan James, 1939.....Assistant Professor and Acting Director of
Lignin and Cellulose Research
B.S.F., 1933, M.S.F., 1934, Ph.D., 1936, Washington

A single date following a name indicates the beginning of service in the University. When two dates are given, the first indicates the beginning of service in the University; the second, in parentheses, is the date of appointment to present rank. Dates of appointment of deans are not shown.

- Baisler, Perry E., Jr., 1937.....Associate in English
B.A., 1932, Washington
- Baker, William Y., 1940.....Lecturer in Nursing Education
B.S., 1931, M.D., 1933, Nebraska
- Ballantine, John Perry, 1926 (1937).....Professor of Mathematics
A.B., 1918, Harvard; Ph.D., 1923, Chicago
- Ballard, Arthur C., 1929.....Research Associate in Anthropology
B.A., 1899, Washington
- Barksdale, Julian D., 1936.....Assistant Professor of Geology
B.A., 1930, Stanford; Ph.D., 1936, Yale
- Barnaby, Joseph Thomas, 1934.....Lecturer in Fisheries
B.S., 1929, Washington; M.S., 1932, Stanford
- Barr, Eric L., Captain, U.S.N., retired, 1936 (1938).....Professor of Naval Science
and Tactics; Executive Officer, Department of Naval Science and Tactics
Graduate, 1911, U.S. Naval Academy; Ph.D., 1938, Washington
- Bartels, Robert D. W., 1938.....Instructor in Marketing
B.S., 1935, Ohio State; M.B.A., 1936, Northwestern
- Bash, Mary Iola, 1925.....Associate Dean of Women
B.A., 1914, Washington
- Beal, Maude L., 1933.....Associate in English
B.A., 1926, M.A., 1929, Washington
- Beardsley, Arthur Sydney, 1922 (1937).....Law Librarian; Professor of Law
LL.B., 1918, B.S.(L.S.), 1924, M.A., 1925, Ph.D., 1928, Washington
- Beaumont, Ross A., 1940.....Instructor in Mathematics
A.B., 1936, M.S., 1937, Michigan; Ph.D., 1940, Illinois
- Beck, Eleanor N., 1932.....Associate in Music
Pupil of Marcel Grancjany, Harpist, American School at Fontainebleau, Paris
- Bell, F. Heward, 1931.....Lecturer in Fisheries
B.A., 1924, British Columbia
- Bell, Milo C., 1940.....Lecturer in Fisheries
B.S. in M.E., 1930, Washington
- Belshaw, Roland E., 1930 (1937).....Associate Professor of Physical Education
B.A., 1927, Oregon; M.A., 1930, Columbia
- Benham, Allen Rogers, 1905 (1916).....Professor of English
A.B., 1900, A.M., 1901, Minnesota; Ph.D., 1905, Yale
- Benson, Edna G., 1927 (1936).....Associate Professor of Design
A.B., 1909, Iowa; M.A., 1923, Columbia
- Benson, Henry Kreitzer, 1904 (1912).....Professor of Chemical Engineering;
Executive Officer, Departments of Chemistry and Chemical Engineering
A.B., 1899, A.M., 1902, Franklin and Marshall; Ph.D., 1907, Columbia; D.Sc., 1926, Frank-
lin and Marshall
- Benson, Merritt E., 1931 (1937).....Associate Professor of Journalism
LL.B., 1930, Minnesota

- Bergh, Willard A., 1940.....Associate in Journalism
B.A., 1931, Washington
- Berry, James Alexander, 1938.....Lecturer in Bacteriology
M.S., 1917, Michigan State
- Beuschlein, Warren Lord, 1922 (1937).....Professor of Chemical Engineering
B.S., 1920, California Institute of Technology; M.S., 1925, Ch.E., 1930, Washington
- Bird, Winfred W., 1928 (1940).....Assistant Professor of English
A.B., 1926, Lawrence College; M.A., 1928, Washington; Ph.D., 1938, Iowa
- Birnbaum, William Zygmunt, 1939.....Acting Assistant Professor of Mathematics
LL.M., 1925, Ph.D., 1929, University of Lwow
- Birtwell, Daniel Thomas, Jr., Lieutenant, U.S.N., 1939.....Assistant Professor of
Naval Science and Tactics
B.S., 1926, U.S. Naval Academy
- Bixby, Mary, 1937.....Associate in English
B.A., 1931, M.A., 1936, Washington
- Blankenship, Russell, 1932 (1937).....Associate Professor of English
A.B., 1914, Missouri; M.A., 1929, Ph.D., 1935, Washington
- Bliss, A. Jeannette, 1922 (1937).....Associate Professor of Home Economics
B.A., 1906, Washington; M.A., 1917, Columbia
- Boehmer, Herbert, 1937.....Instructor in General Engineering
Dipl. Ing. Braunschweig, 1928, Germany; M.S., 1934, Washington
- Bolton, Frederick Elmer, 1912.....Professor of Education; Dean
Emeritus of the College of Education
B.S., 1893, M.S., 1896, Wisconsin; Ph.D., 1898, Clark
- Bostwick, Irene Neilson, 1930.....Instructor in Music
B.M., 1922, Washington
- Botzer, William H., 1938.....Assistant Dean of Men
B.A., 1935, LL.B., 1938, Washington
- Bradshaw, Harriet, 1938.....Instructor in Nursing Education
B.S., 1930, Washington; B.N., 1933, Yale
- Brandt, Edna J., 1939.....Instructor in Nursing Education
R.N., 1931, Seattle General Hospital; B.S., 1939, Washington
- Brakel, Henry Louis, 1905 (1936).....Professor of Engineering Physics;
Executive Officer of the Department of Physics
B.S., 1902, Olivet College; M.A., 1905, Washington; Ph.D., 1912, Cornell
- Brokaw, Bettie, 1939.....Instructor in Pharmacy
B.S., 1936, Washington
- Brookbank, Earl Bruce, 1938.....Lecturer in Nursing Education
A.B., 1907, Indiana; M.D., 1912, Oregon
- Brown, Lois Eula, 1925 (1940).....Instructor in English
B.A., 1920, M.A., 1925, Washington
- Brown, Robert Quixote, 1919 (1932).....Assistant Professor of General Engineering
B.S. in E.E., 1916, Washington

- Brown, Stephen Darden, 1930 (1937).....Associate Professor of Business Law
LL.B., 1925, B.A., 1932, Washington; LL.M., 1938, Stanford
- Bruenner, Bertram F., 1935.....Lecturer in Nursing Education
B.S., 1925, M.D., 1929, Minnesota
- Burd, Henry Alfred, 1924 (1927).....Professor of Marketing
Director of the Summer Quarter
B.S., 1910, Illinois Wesleyan; M.A., 1911, Ph.D., 1915, Illinois
- Burgess, Janna P., 1937.....Associate in English
B.A., 1918, Iowa; M.A., 1928, Washington
- Burnett, Bonnie May Heath, 1937.....Associate in English
B.A., 1935, Washington
- Burns, Harry, 1934 (1936).....Instructor in English
B.A., 1928, Ph.D., 1935, Washington
- Butterbaugh, Grant I., 1922 (1937).....Associate Professor of Statistics
A.B., 1916, Wisconsin; M.B.A., 1923, Washington
- Butterworth, Joseph M., Jr., 1929.....Associate in English
B.A., 1919, M.A., 1921, Brown
- Byers, Jean, 1939.....Instructor in Nursing Education
R.N., 1930, Evanston Hospital; B.S., 1930, Northwestern; M.A., 1939, Columbia
- Cady, George H., 1938.....Assistant Professor of Chemistry
A.B., 1927, A.M., 1928, Kansas; Ph.D., 1931, California
- Campbell, Alex D., 1940.....Lecturer in Nursing Education
B.A., 1930, Whitman; M.D., 1938, Johns Hopkins
- Carpenter, Allen Fuller, 1909 (1926).....Professor of Mathematics;
Executive Officer of the Department of Mathematics
A.B., 1901, Hastings College; A.M., 1909, Nebraska; Ph.D., 1915, Chicago; D.Sc., 1937,
Hastings College
- Carrell, James Aubrey, 1939.....Assistant Professor of English
A.B., 1927, Nebraska Wesleyan; M.A., 1929, Ph.D., 1936, Northwestern
- Chapman, Wilbert M., 1938.....Lecturer in Fisheries
B.S., 1932, M.S., 1933, Ph.D., 1937, Washington
- Chertkov, Morris, 1934 (1937).....Assistant Professor of Business Law
Ph.B., 1931, J.D., 1933, Chicago
- Chessex, Jean Charles William, 1928 (1934).....Associate Professor of
Romanic Languages
B.A., 1920, B.D., 1922, M.A., 1925, Lausanne (Switzerland)
- Chittenden, Hiram Martin, 1923 (1936)....Assistant Professor of Civil Engineering
B.S. in C.E., 1920, C.E., 1935, Washington
- Christian, Byron Hunter, 1926 (1936).....Associate Professor of Journalism
B.A., 1921, M.A., 1929, Washington
- Church, Phil E., 1935 (1937).....Assistant Professor of Geography
and Meteorology
B.S., 1923, Chicago; Ph.D., 1937, Clark

- Clark, Earl F., 1935.....Associate in Physical Education
- Clark, Lois, 1940.....Research Associate in Botany
B.A., 1907, M.A., 1910, Washington; Ph.D., 1919, Minnesota
- Cochran, Lyall Baker, 1934 (1937)....Assistant Professor of Electrical Engineering
B.S. in E.E., 1923, E.E., 1936, Washington
- Coffman, Grace, 1939.....Instructor in Nursing Education
B.A., 1920, Washington; R.N., 1925, Presbyterian Hospital (Chicago)
- Cohen, Joseph, 1932 (1936).....Instructor in Sociology
B.A., 1925, M.A., 1927, Washington; Ph.D., 1935, Michigan
- Cole, Kenneth C., 1924 (1936).....Professor of Political Science
B.Lit., 1924, Oxford; Ph.D., 1930, Harvard
- Cole, Thomas Raymond, 1930.....Professor of Education
M.A., 1902, Upper Iowa; Ph.B., 1904, DePauw; LL.D., 1931, Upper Iowa
- Collier, Ira Leonard, 1919.....Assistant Professor of Civil Engineering
B.S. in C.E., 1913, C.E., 1917, Washington
- Condon, Herbert T., 1903.....Dean of Students
B.A., 1892, Oregon; LL.B., 1894, Michigan
- Conway, John Ashby, 1927 (1930).....Assistant Professor of English
B.A., 1927, Carnegie Institute of Technology
- Cook, Thomas I., 1939.....Associate Professor of Political Science
B.S., 1928, London University; Ph.D., 1938, Columbia
- Coombs, Howard A., 1935 (1937).....Assistant Professor of Geology
B.S., 1929, M.S., 1931, Ph.D., 1935, Washington
- Cooper, Lemuel Browning, 1939.....Instructor in General Engineering
B.S. in M.E., 1931, Washington
- Corbally, John E., 1927 (1936).....Associate Professor of Education
B.A., 1918, Whitworth; M.A., 1925, Ph.D., 1929, Washington
- Corey, Clarence Raymond, 1907 (1929).....Associate Professor of Mining
Engineering and Metallurgy
E.M., Montana State School of Mines; M.A., 1915, Columbia
- Cornu, Donald, 1928 (1932).....Assistant Professor of English
LL.B., 1922, M.A., 1926, Ph.D., 1928, Washington
- Cory, Herbert Ellsworth, 1923.....Professor of Liberal Arts; Executive
Officer of the Department of Liberal Arts
A.B., 1906, Brown; Ph.D., 1910, Harvard
- Costigan, Giovanni, 1934.....Assistant Professor of History
A.B., 1926, Oxford; M.A., 1928, Wisconsin; M.A., 1930, Oxford; Ph.D., 1930, Wisconsin
- Cox, Edward Godfrey, 1911 (1926).....Professor of English
B.A., 1899, Wabash College; M.A., 1901, Ph.D., 1906, Cornell

- Cox, William Edward, 1919 (1923).....Professor of Economics and Accounting
B.A., 1909, M.A., 1910, Texas
- Craig, Joseph A., 1931.....Lecturer in Fisheries
B.A., 1923, M.A., 1931, Stanford
- Crain, Richard W., 1936.....Instructor in Mechanical Engineering
B.S. in E.E., 1930, B.S. in M.E., 1931, Colorado State College
- Cramlet, Clyde Myron, 1920 (1934).....Associate Professor of Mathematics
A.B., 1916, Walla Walla; M.S., 1920, Ph.D., 1926, Washington
- Creore, Alvin Emerson, 1940.....Acting Instructor in Romanic Languages
A.B., 1934, M.A., 1936, Rochester; Ph.D., 1939, Johns Hopkins
- Crescitelli, Frederick, 1940.....Instructor in Physiology
Ph.B., 1930, M.S., 1932, Ph.D., 1934, Brown
- Cross, Harriet, 1932.....Instructor in Nursing Education
R.N., 1921, Columbia Hospital, Wisconsin; B.S., 1925, Minnesota
- Crounse, Dorothy, 1937.....Assistant Professor of Social Work; Supervisor
of Field Work, Graduate School of Social Work
B.S., 1921, Teachers' College, Columbia; M.S.S., 1933, Smith College of Social Work
- Crumb, Vera Baugh, 1938.....Instructor in Nursing Education
R.N., 1929, Seattle General Hospital; B.S., 1936, Washington
- Curtis, Elizabeth, 1930.....Associate in Art
B.F.A., 1929, M.F.A., 1933, Washington
- Dahlgren, Edwin Harold, 1934.....Lecturer in Fisheries
B.S., 1931, Washington
- Dakan, Carl Spencer, 1919 (1923).....Professor of Corporation Finance
and Investments
B.S., 1909, Missouri
- Daniels, Joseph, 1911 (1923).....Professor of Mining Engineering and Metallurgy
S.B., 1905, Massachusetts Institute of Technology; M.S., 1908, E.M., 1933, Lehigh
- David, Jean Ferdinand, 1936.....Assistant Professor of Romanic Languages
B.A., 1927, M.A., 1931, Saskatchewan; Ph.D., 1936, Johns Hopkins
- Davidson, Frederick A., 1931.....Lecturer in Fisheries
Ph.D., 1927, Chicago
- Davis, Erma Nelson, 1928.....Associate in History
B.A., 1918, Denver; M.A., 1924, Utah
- Dehn, William Maurice, 1907 (1919).....Professor of Organic Chemistry
A.B., 1893, A.M., 1896, Hope; Ph.D., 1903, Illinois
- Demmery, Joseph, 1928 (1934).....Professor of Business Fluctuations and
Real Estate
Ph.B., 1920, M.A., 1924, Chicago
- Denny, Grace Goldena, 1913 (1934).....Professor of Home Economics
A.B., 1907, Nebraska; M.A., 1919, Columbia

- Densmore, Harvey Bruce, 1907 (1933).....Professor of Greek; Chairman,
General Studies
A.B., 1903, Oregon; A.B., 1907, Oxford
- deVries, Mary Aid, 1921 (1939).....Associate Professor of Physical Education
B.A., 1920, Wisconsin
- Diehl, Helmut Charles, 1938.....Lecturer in Chemistry
B.S., 1918, Michigan State
- Dille, James M., 1936.....Associate Professor of Pharmacology
B.S., 1930, M.S., 1933, Nebraska; Ph.D., 1935, Georgetown
- Dobie, Edith, 1925 (1937).....Associate Professor of History
B.A., 1914, Syracuse; A.M., 1922, Chicago; Ph.D., 1925, Stanford
- Doltz, Henrietta J., 1938.....Instructor in Nursing Education
A.B., 1928, Park College; R.N., 1931, Presbyterian, New York; M.N., 1938, Washington
- Donaldson, Lauren R., 1935 (1939).....Assistant Professor of Fisheries
B.S., 1926, Intermountain Union College; M.S., 1931, Ph.D., 1939, Washington
- Dorman, Helen Thompson, 1933 (1936).....Instructor in Social Work
and Supervisor of Field Work, Graduate School of Social Work
B.A., 1928, Washington; A.M., 1939, Chicago
- Dorrance, Margaret, 1936.....Instructor in Home Economics
B.S., 1931, M.S., 1935, Washington
- *Dougherty, George M., Jr., 1940.....Acting Instructor in Transportation
A.B., 1936, Harvard; M.B.A., 1939, Pennsylvania
- Douglass, Clarence Eader, 1939.....Instructor in General Engineering
B.S. in C.E., 1927, Washington State
- Douglass, Frank H., 1940.....Lecturer in Nursing Education
P.H.G., 1919, Washington State; M.D., 1925, Oregon
- Draper, Edgar Marion, 1925 (1936).....Professor of Education
B.A., 1916, M.A., 1925, Ph.D., 1927, Washington
- Draper, Oscar Eldridge, 1920 (1923).....Lecturer in Accounting
M.Acct., 1902, Vories Business College
- Dresslar, Martha Estella, 1918 (1937).....Associate Professor of Home Economics
A.B., 1913, Southern California; B.S., 1917, Washington; M.S., 1918, Columbia
- Duchow, Esther, 1940.....Associate in Bacteriology
B.S., 1934, Washington
- Dunlop, Harry A., 1931.....Lecturer in Fisheries
B.A., 1919, M.A., 1922, British Columbia
- Dutton, Harry H., 1938.....Lecturer in Nursing Education
M.D., 1914, Vermont
- Dvorak, August, 1922 (1937).....Professor of Education
A.B., 1920, Ph.D., 1923, Minnesota

*Not on 1940-1941.

- Earle, Frances M., 1931.....Assistant Professor of Geography
B.A., 1918, Winthrop; M.S., 1926, Columbia; Ph.D., 1929, George Washington
- Eastman, Austin Vitruvius, 1924 (1937).....Associate Professor of Electrical Engineering
B.S. in E.E., 1922, M.S., 1929, Washington
- Eastman, Fred S., 1927 (1939).....Associate Professor of Aeronautical Engineering
B.S. in E.E., 1925, Washington; M.S., 1929, Massachusetts Institute of Technology
- Eastwood, Everett Owen, 1905.....Professor of Mechanical Engineering; Executive Officer of the Departments of Aeronautical and Mechanical Engineering; Director of Guggenheim Laboratories
C.E., 1896, A.B., 1897, A.M., 1899, Virginia; B.S., 1902, Massachusetts Institute of Technology
- Eby, Edwin Harold, 1927 (1930).....Assistant Professor of English
Ph.B., 1923, Chicago; Ph.D., 1927, Washington
- Eckelman, Ernest Otto, 1911 (1934).....Professor of Germanic Literature
B.A., 1897, Northwestern; B.L., 1898, Wisconsin; Ph.D., 1906, Heidelberg (Germany)
- Eckmann, Ray L., 1936.....Director of Student Activities; Administrative Director of the School of Physical and Health Education
B.B.A., 1922, Washington
- Eckrem, Dagrūn, 1936.....Associate in Art
B.F.A., 1926, Washington
- Edmonds, Robert Harold Gray, 1920 (1933).....Associate Professor of Mechanical Engineering
B.S., 1915, Whitman; B.S. in M.E., 1922, M.S. in M.E., 1926, M.E., 1931, Washington
- Edmundson, Clarence S., 1920.....Associate in Physical Education
B.S., 1910, Idaho
- Egtvet, Percy, 1939.....Associate in Physical Education
B.A., 1926, Washington
- Eichinger, Walter A., 1936 (1939).....Instructor in Music
M.M., 1933, Northwestern
- Emery, Donald William, 1934.....Associate in English
B.A., 1927, M.A., 1928, Iowa
- Engel, Ernest Dirck, 1934.....Instructor in General Engineering
B.S. in E.E., 1930, Washington
- Epstein, Jesse, 1940.....Lecturer in Social Work
B.A., 1931, LL.B., 1935, Washington
- Esper, Erwin Allen, 1927 (1934).....Professor of Psychology
B.A., 1917, M.A., 1920, Ph.D., 1923, Ohio State
- Ethel, Garland, 1927.....Instructor in English
B.A., 1923, M.A., 1927, Ph.D., 1928, Washington
- Everest, Harold P., 1940.....Assistant Professor of Journalism
B.A., 1939, Washington

- Falknor, Judson F., 1936.....Professor of Law; Dean of the School of Law
B.S., 1917, LL.B., 1919, Washington
- Farquharson, Frederick Burt, 1925 (1937).....Associate Professor of Civil Engineering
B.S. in M.E., 1923, M.E., 1927, Washington
- Farwell, Raymond Forrest, 1921 (1940).....Professor of Transportation
A.B., 1920, California; M.A., 1926, Washington
- Ferrall, Michael, 1938.....Associate in English
B.D.A., 1935, Goodman Theatre Art Institute, Chicago
- Fischer, Louis, 1935 (1937).....Assistant Professor of Pharmaceutical Chemistry
B.S., Ph.C., 1926, M.S., 1928, Ph.D., 1933, Washington
- Fish, Frederic F., 1934.....Lecturer in Fisheries
B.S., 1928, Cornell; Sc.D., 1931, Johns Hopkins
- Fish, Marion, 1937 (1940).....Professor of Home Economics
B.S., 1923, Ph.D., 1932, Cornell
- Fitton, Charlotte, 1940.....Acting Associate in English
B.A., 1937, Washington
- Flothow, Paul G., 1940.....Lecturer in Nursing Education
M.D., 1923, Pennsylvania; M.S., 1927, Minnesota
- Foote, Hope Lucille, 1923 (1937).....Associate Professor of Interior Design
A.B., 1920, Iowa State; M.A., 1923, Columbia
- Fordon, John Vivian, 1935 (1936).....Instructor in Accounting
B.B.A., 1931, M.B.A., 1934, Washington
- Forman, Marie L., 1935.....Instructor in Nursing Education
R.N., Methodist State Hospital, South Dakota; B.S., 1935, Washington
- Forrest, Jack, 1937.....Associate in English
LL.B., 1928, Washington
- Foster, Frederic John, 1935.....Lecturer in Fisheries
- Foster, Henry Melville, 1927 (1936).....Professor of Physical Education;
Executive Officer, Department of Physical Education for Men
B.S., 1924, Oregon; M.A., 1926, Columbia
- Francis, Byron F., 1940.....Lecturer in Nursing Education
B.A., 1922, Washington; M.D., 1926, Washington Univ., St. Louis
- Franzke, Albert L., 1936 (1939).....Associate Professor of English
B.A., 1916, M.A., 1933, Lawrence
- Frein, Pierre Joseph, 1903.....Professor of Romanic Languages
A.B., 1892, Williams College; Ph.D., 1899, Johns Hopkins
- Frye, Theodore Christian, 1903.....Professor of Botany
B.S., 1894, Illinois; Ph.D., 1902, Chicago
- Fuller, Richard E., 1930 (1940).....Research Professor of Geology
B.S., 1924, M.S., 1925, Ph.D., 1930, Washington

- Garcia-Prada, Carlos, 1925 (1939).....Professor of Spanish
A.B., 1918, Colombia (South America); A.M., 1924, Michigan; Ph.D., 1929, Bogota (South America)
- Garfield, Viola, 1937.....Associate in Anthropology
B.A., 1928, M.A., 1931, Washington; Ph.D., 1939, Columbia
- Garrison, Harry A., Captain, U.S.N., 1940.....Lecturer in Naval Science
A.B., 1901, West Virginia; M.D., 1906, Pennsylvania
- Gates, Charles M., 1936 (1939).....Assistant Professor of History
B.A., 1926, Yale; M.A., 1928, Harvard; Ph.D., 1934, Minnesota
- Gavett, George Irving, 1907 (1937).....Professor of Mathematics
B.S.(C.E.), 1893, Michigan
- George, Frances Lucille, 1939.....Instructor in Nursing Education
R.N., 1935, Ohio State School of Nursing; B.S., 1935, M.A., 1937, Ohio State
- Gillette, Alletta Maria, 1912.....Instructor in English
B.S., 1907, Smith; M.A., 1911, Washington
- Goggio, Charles, 1920 (1936).....Professor of Romanic Languages
A.B., 1910, Harvard; A.M., 1914, Ph.D., 1919, Wisconsin
- Goodrich, Forest Jackson, 1914 (1934).....Professor of Pharmacognosy;
Dean of the College of Pharmacy
Ph.C., 1913, B.S., 1914, M.S., 1917, Ph.D., 1926, Washington
- Goodsell, Julia, 1928 (1937).....Instructor in Physiology
B.S., 1926, M.S., 1928, Ph.D., 1937, Washington
- Goodspeed, George Edward, 1919 (1934).....Professor of Geology; Executive
Officer of the Department of Geology
B.S.(Min.E.), 1910, Massachusetts Institute of Technology
- Gowen, Herbert Henry, 1909 (1914).....Professor of Oriental Studies
St. Augustine's College (Canterbury); D.D., 1912, Whitman College
- Gowen, Lancelot E., 1924 (1937).....Professor of Architecture
B.A., 1916, M.A.(Arch.), 1921, California
- Graf, Hubert Arthur, 1936.....Associate in Music
Theoretical work with H. J. Williams, London, England; Enrico Tramonti, Chicago; Graduate, Holy Names Academy
- Graves, Dorsett V., 1922.....Associate in Physical Education
- Gray, Robert Simpson, 1939.....Associate in English
B.A., 1936, M.A., 1938, Washington
- Gregory, Homer Ewart, 1919 (1933).....Professor of Management and Accounting
A.B., 1914, Washington State; M.A., 1917, Chicago
- Griffith, Dudley David, 1924 (1927).....Professor of English; Executive
Officer of the Department of English
B.A., 1903, Simpson College; Ph.D., 1916, Chicago
- Grondal, Bror Leonard, 1913 (1929).....Professor of Forestry
B.A., 1910, Bethany; M.S.F., 1913, Washington
- Groth, Miriam Terry, 1930 (1937).....Assistant Professor of Music
B.M., 1926, Washington

- Grytbak, Margit H., 1940.....Lecturer in Nursing Education
B.S., 1931, M.D., 1933, Minnesota
- Guberlet, John Earl, 1923 (1930).....Professor of Zoology
A.B., 1909, Bethany College; A.M., 1911, Ph.D., 1914, Illinois
- Gundlach, Ralph H., 1927 (1937).....Associate Professor of Psychology
B.A., 1924, M.A., 1925, Washington; Ph.D., 1927, Illinois
- Gunther, Erna, 1923 (1937).....Associate Professor of Anthropology;
Director of the Museum; Executive Officer, Department of Anthropology
A.B., 1919, Barnard; A.M., 1920, Ph.D., 1928, Columbia
- Guthrie, Edwin Ray, 1914 (1928).....Professor of Psychology
A.B., 1907, A.M., 1910, Nebraska; Ph.D., 1912, Pennsylvania
- Guthrie, Elton F., 1929 (1932).....Instructor in Sociology
B.A., 1926, Ph.D., 1933, Washington
- Haendler, Helmut Max, 1939 (1940).....Instructor in Chemistry
B.S., 1935, Northeastern
- Hall, Amy Violet, 1924 (1940).....Assistant Professor of English
B.A., 1920, M.A., 1923, Washington
- Hall, David Connolly, 1908.....Professor of Hygiene; University Health Officer
Ph.B., 1901, Brown; Sc.M., 1903, Chicago; M.D., 1907, Rush Medical College; Fellow,
American College of Physicians
- Hall, Helen, 1931 (1934).....Assistant Professor of Music
B.M., 1925, Washington
- Hall, James Kendall, 1930 (1934)...Professor of Public Utilities and Public Finance
B.A., 1925, M.A., 1926, Oregon; Ph.D., 1929, Stanford
- Hall, John F., 1931.....Lecturer in Social Work
M.A., 1915, Yale
- Haller, Mary E., 1931 (1935).....Instructor in Mathematics
B.A., 1924, M.S., 1931, Ph.D., 1934, Washington
- Halvorsen, Clifford, 1936.....Lecturer in Nursing Education
B.A., Utah; M.D., 1932, Colorado
- Hamack, Frank Hartmond, 1921.....Associate in Accounting
LL.B., 1916, Georgetown
- Hamilton, Rachel Elizabeth, 1921 (1937).....Instructor in French
B.L., 1910, Whitman; M.A., 1924, Washington
- Hanley, John H., 1939.....Assistant Professor of Botany and Forestry;
Director of the Arboretum
B.S.F., 1927, Michigan; M.S., 1933, Ph.D., 1937, Illinois
- *Hardy, Francis H., 1940.....Lecturer in Oceanography
B.S., 1904, Dartmouth

*On winter and spring quarters, 1940.

- Harrington, Donal Francis, 1938.....Instructor in English
B.A., 1928, Montana; M.A., 1933, Columbia
- Harris, Charles William, 1906 (1924).....Professor of Hydraulic Engineering
B.S. in C.E., 1903, Washington; C.E., 1905, Cornell
- Harrison, Joseph Barlow, 1913 (1933).....Professor of English
B.A., 1910, Washington; A.B., 1913, Oxford
- Harrison, Roger W., 1933.....Lecturer in Fisheries
B.S.(C.E.), 1925, Washington State; M.S., 1928, George Washington
- Harsch, Alfred E., 1930 (1940).....Professor of Law
B.A., 1926, LL.B., 1928, Washington
- Hatch, Melville H., 1927 (1934).....Associate Professor of Zoology
B.A., 1919, M.A., 1921, Ph.D., 1925, Michigan
- Hauan, Merlin James, 1928.....Lecturer in Civil Engineering
B.S. in E.E., 1925, Washington
- Hawthorn, George Edward, 1924 (1937)....Associate Professor of Civil Engineering
B.S. in C.E., 1915, C.E., 1926, Washington
- Hayner, Norman Sylvester, 1925 (1937).....Professor of Sociology
B.A., 1920, Washington; A.M., 1921, Ph.D., 1923, Chicago
- Heffner, Ray L., 1938 (1939).....Professor of English
A.B., 1921, M.A., 1925, North Carolina; Ph.D., 1928, Johns Hopkins
- Helmlingé, Charles Louis, 1911 (1940).....Professor of Romanic Languages
B.Ph., 1911, Berea; M.A., 1915, Washington
- Henderson, Joseph E., 1929 (1936).....Associate Professor of Physics
B.S., 1922, Wooster; Ph.D., 1928, Yale
- Hennes, Robert G., 1934 (1937).....Assistant Professor of Civil Engineering
B.S., 1927, Notre Dame; M.S.(C.E.), 1928, Massachusetts Institute of Technology
- Henry, Bernard S., 1931 (1937).....Associate Professor of Bacteriology
Executive Officer of the Department of Bacteriology
B.S., 1925, M.A., 1926, Ph.D., 1931, California
- Henry, Dora Priaulx, 1932.....Research Associate in Oceanography and Zoology
Ph.D., 1931, California
- Hensley, Merdeces H., 1939.....Acting Associate in Art
B.F.A., 1930, M.F.A., 1938, Washington
- Hermans, Thomas G., 1929 (1940).....Assistant Professor of Psychology
B.S., 1923, M.A., 1927, Washington
- Herrman, Arthur Philip, 1921 (1937).....Professor of Architecture,
Executive Officer of the School of Architecture
B.A.(Arch.), 1920, Carnegie Institute of Technology
- Hicken, James, 1936.....Associate in English
B.S., 1933, Washington
- Higgs, Paul McClellan, 1919 (1939).....Assistant Professor of Physics
B.S., 1919, Washington

- Hill, Naomi H., 1937.....Associate in English
B.A., 1928, M.A., 1934, Washington
- Hill, Raymond L., 1927 (1934).....Associate Professor of Painting
Rhode Island School of Design, 1913
- Hiltner, Walter Frederick, 1939.....Associate in General Engineering
B.S. in C.E., 1934, Washington; M.S. in C.E., 1935, Massachusetts Institute of Technology
- Hitchcock, C. Leo, 1937.....Assistant Professor of Botany
A.B., 1927, A.M., 1929, Pomona; Ph.D., 1931, Washington University (Missouri)
- Hoard, George Lisle, 1920 (1933).....Associate Professor of Electrical Engineering
B.S. in E.E., 1917, M.S. in E.E., 1926, Washington
- Hoedemaker, Edward D., 1935.....Lecturer in Psychiatry; Lecturer in
Nursing Education
B.S., 1927, M.D., 1929, Michigan
- Hoffstadt, Rachel Emilie, 1923 (1939).....Professor of Bacteriology
B.S., 1908, Hanover; M.S., 1913, Chicago; Ph.D., 1915, D.Sc., 1921, Johns Hopkins
- Holmes, Harlan B., 1931.....Lecturer in Fisheries
B.A., 1922, M.A., 1931, Stanford
- Holt, William Stull, 1940.....Professor of American History; Executive
Officer of the Department of History
A.B., 1920, Cornell; Ph.D., 1926, Johns Hopkins
- Horsfall, Frank, 1935.....Associate in Music
- Horton, George P., 1934 (1939).....Assistant Professor of Psychology
B.S., 1926, M.A., 1930, Ph.D., 1932, Princeton
- Hotson, John William, 1911 (1936).....Professor of Botany
A.B., 1901, A.M., 1902, McMaster; Ph.D., 1913, Harvard
- Houtchens, H. Max, 1940.....Lecturer in Social Work
B.S., 1932, Idaho; B.A., 1935, Ph.D., 1937, Iowa
- Huber, John Richard, 1939.....Assistant Professor of Economics
B.A., 1931, Wooster; M.A., 1933, Ph.D., 1937, Princeton
- Hudson, Alfred Emmons, 1940.....Associate in Anthropology
Ph.B., 1927, Ph.D., 1937, Yale
- Hughes, Glenn, 1919 (1930).....Professor of English
B.A., 1916, Stanford; M.A., 1921, Washington
- Hunt, Wallace, 1939.....Lecturer in Nursing Education
M.D., 1927, Northwestern Medical School; M.P.H., 1939, Harvard School of Public Health
- Hutchinson, Mary Gross, 1919 (1936).....Professor of Physical Education;
Executive Officer, Department of Physical Education for Women
A.B., 1912, Goucher College; M.A., 1915, Columbia
- Iglehart, Robert L., 1938.....Associate in Art
Graduate Maryland Institute of Art, Baltimore, 1934
- Ingalls, Ida, 1936.....Assistant Professor of Home Economics
B.A., 1920, Iowa; M.A., 1924, Columbia

- Irvine, Demar B., 1937 (1938).....Assistant Professor of Music
B.A., 1929, M.A., 1931, California; Ph.D., 1937, Harvard
- Isaacs, Walter F., 1922 (1929).....Professor of Fine Arts; Director of the
School of Art
B.S.(F.A.), 1909, James Millikin
- Jacobs, Melville, 1928 (1937).....Assistant Professor of Anthropology
A.B., 1922, New York; A.M., Ph.D., 1931, Columbia
- Jacobsen, Philip A., 1927 (1939).....Assistant Professor of General Engineering
B.S., 1926, Washington
- Jacobsen, Theodore Siegmundt, 1928.....Assistant Professor of Astronomy
and Mathematics; Executive Officer of the Department of Astronomy
B.A., 1922, Stanford; Ph.D., 1926, California
- Jacobson, Berthe P., 1937 (1939).....Associate Professor of Music
Graduate, Conservatory of Geneva; Diploma Schola Cantorum, Paris; Diploma Dalcroze
Institute of Geneva
- Jensen, Alfred, 1930 (1939).....Assistant Professor of General Engineering
B.S. in C.E., 1925, M.S. in C.E., 1937, Washington
- Jensen, Merrill Monroe, 1935 (1937).....Assistant Professor of History
B.A., 1929, M.A., 1931, Washington; Ph.D., 1934, Wisconsin
- Jerbert, Arthur Rudolph, 1921 (1937).....Associate Professor of Mathematics
B.S., 1916, M.S., 1923, Ph.D., 1928, Washington
- Jessup, John H., 1926 (1927).....Associate Professor of Education
A.B., 1920, Earlham College; M.A., 1924, Iowa
- Johnson, Charles Willis, 1903 (1904).....Professor of Pharmaceutical
Chemistry; State Chemist; Dean Emeritus of the College of Pharmacy
Ph.C., 1896, B.S., 1900, Ph.D., 1903, Michigan
- Johnson, Richard, 1938.....Associate in Physical Education
B.A., 1937, Washington
- Johnson, Sylvia G., 1939.....Instructor in Nursing Education
R.N., 1936, City Hospital, New York; B.S., 1939, Washington
- Jones, George R., 1939.....Instructor in Pharmacy
Ph.G., 1933, B.S., 1934, M.S., 1936, Ph.D., 1938, Florida
- Jones, Robert William, 1920 (1934).....Professor of Journalism
B.A., 1906, LL.B., 1913, Missouri; M.A., 1918, South Dakota
- Jonquet, Eugene Maurice, 1940.....Supervisor of Field Work, Graduate School
of Social Work
B.A., 1932, James Millikin; M.A., 1933, M.S., 1938, Washington University (St. Louis)
- Kahin, Helen, 1930 (1936).....Instructor in English
B.A., 1909, Wilson College; M.A., 1911, Indiana; Ph.D., 1934, Washington
- Katz, Solomon, 1936 (1939).....Assistant Professor of History
A.B., 1930, Ph.D., 1933, Cornell

- Keith, Wendell Paisley, 1939.....Instructor in Ceramic Engineering
B.S. in Ceramics, 1934, Illinois
- Kelez, George Bothwell, 1934.....Lecturer in Fisheries
B.S., 1930, Washington; M.A., 1932, Stanford
- Kelly, Edgar Andrew, 1937.....Assistant Professor of Pharmaceutical Chemistry
Ph.C., 1928, B.S., 1929, M.S., 1930, Ph.D., 1933, Washington
- Kelly, Laurence E., Commander, U.S.N., 1939.....Associate Professor of Naval
Science and Tactics
B.S., 1917, U.S. Naval Academy
- Kennedy, Fred Washington, 1909 (1938).....Associate Professor of Journalism;
Director of Journalism Laboratories
- Kent, Marian G., 1939.....Instructor in Nursing Education
R.N., 1921, Staten Island Hospital; B.S., 1939, Washington
- Kenworthy, Ray W., 1929 (1939).....Assistant Professor of Physics
B.A., 1924, M.S., 1925, Iowa; Ph.D., 1938, Washington
- Kerr, Clark, 1940.....Assistant Professor of Labor
A.B., 1932, Swarthmore; A.M., 1933, Stanford; Ph.D., 1939, California
- Kidwell, Kathro, 1939.....Instructor in Physical Education
B.S., 1927, Nebraska; M.A., 1928, Wisconsin
- Kimmel, Edward, 1932 (1939).....Lecturer in History
B.S., 1897, M.A., 1907, Washington State College
- Kincaid, Trevor, 1899 (1901).....Professor of Zoology; Executive Officer
of the Department of Zoology and Physiology
B.S., 1899, M.A., 1901, Washington; D.Sc., College of Puget Sound
- Kingston, Maurice J., 1940.....Associate in Mathematics
B.A., 1935, Western Ontario; M.A., 1936, Ph.D., 1939, Ontario
- Kirchner, George, 1919 (1939).....Assistant Professor of Music
Leipzig
- Kirsten, Frederick Kurt, 1915 (1923).....Professor of Aeronautical Engineering
B.S. in E.E., 1909, E.E., 1914, Washington
- Kobe, Kenneth Albert, 1931 (1939).....Associate Professor of Chemical Engineering
B.S., 1926, M.S., 1928, Ph.D., 1930, Minnesota
- Kocher, Paul, 1938.....Instructor in English
A.B., 1926, Columbia; J.D., 1929, Ph.D., 1936, Stanford
- Kunde, Norman Frederich, 1930 (1937).....Assistant Professor of Physical
Education
B.S., 1928, M.A., 1932, Washington
- Lauer, Edward Henry, 1934.....Professor of Germanic Languages and
Literature; Dean of the College of Arts and Sciences
A.B., 1906, A.M., 1909, Ph.D., 1916, Michigan
- Lawrence, Charles Wilson, 1926 (1934).....Associate Professor of Music
B.M., 1918, Oberlin; M.A.(Music), 1930, Washington

- Lawson, Jane Sorrie, 1922 (1939).....Associate Professor of English
M.A., 1906, St. Andrews (Scotland)
- Leahy, Kathleen M., 1935.....Assistant Professor of Nursing Education;
Director of Public Health Nursing Field Work
R.N., Stanford Hospital; A.B., 1926, Oregon; M.S., 1932, Washington
- Levy, Ernst, 1936.....Professor of History, Law and Political Science
LL.D., 1906, Berlin
- Lindblom, Roy Eric, 1924 (1937).....Associate Professor of Electrical
Engineering
B.S. in E.E., 1922, M.S. in E.E., 1929, Washington
- Lingafelter, Edward Clay, 1939.....Associate in Physical Chemistry
B.S., 1935, Ph.D., 1939, California
- Lockling, William Bruce, 1939.....Assistant Professor of Economics
A.B., 1927, A.M., 1929, California; Ph.D., 1933, Illinois
- Loew, Edgar Allan, 1909 (1923).....Professor of Electrical Engineering;
Dean of the College of Engineering
B.S.(E.E.), 1906, E.E., 1922, Wisconsin
- Lorig, Arthur N., 1934 (1936).....Assistant Professor of Accounting
B.A., 1922, Wisconsin; C.P.A., 1927; M.A., 1932, Stanford; Ph.D., 1936, Chicago
- Loucks, Roger B., 1936 (1939).....Assistant Professor of Psychology
B.S., 1927, Ph.D., 1930, Minnesota
- Loughridge, Donald H., 1931 (1936).....Associate Professor of Physics
B.S., 1923, Ph.D., 1927, California Institute of Technology
- Lucas, Henry Stephen, 1921 (1934).....Professor of History
A.B., 1913, Olivet; A.M., 1915, Indiana; Ph.D., 1921, Michigan
- Luccock, Eugene C., 1937 (1939).....Professor of Law
A.B., 1912, Washington and Jefferson; LL.B., 1915, Pittsburgh; LL.M., 1937, Stanford
- Lutey, William Glen, 1934 (1940).....Instructor in Liberal Arts
B.A., 1930, M.A., 1931, Washington
- Lynch, James E., 1931.....Associate Professor of Fisheries
B.A., 1917, M.A., 1921, Nebraska; Ph.D., 1929, California
- McAllister, Breck P., 1934 (1939).....Professor of Law
B.A., 1923, California; LL.B., 1926, Harvard; Ph.D., 1929, Brookings
- McConahey, James M., 1921.....Lecturer in Accounting
B.S., 1896, M.S., 1899, Washington and Jefferson; LL.B., 1899, Northwestern; C.P.A., 1916
- McCreery, Ruth Allen, 1924 (1927).....Associate in Music
B.M., 1924, Washington
- McFarlan, Lee Horace, 1927 (1934).....Associate Professor of Mathematics
B.S., 1917, Kansas State Teachers' College; A.M., 1921, Ph.D., 1924, Missouri
- McGownd, Jane, 1923 (1928).....Assistant Professor of Physical Education
B.S., 1915, M.A., 1923, Columbia

- McIntyre, Harry John, 1919 (1930).....Associate Professor of Mechanical Engineering
B.S. in M.E., 1915, M.B.A., 1923, Washington
- McKay, George F., 1927 (1934).....Associate Professor of Music
B.Mus., 1923, Rochester
- McKenzie, Vernon, 1928.....Professor of Journalism; Director of the School of Journalism
B.A., 1909, Toronto; M.A., 1914, Harvard
- McKinlay, Florence, 1937.....Associate in English
B.A., 1908, Lombard College; M.A., 1931, Washington
- McLellan, Helen, 1937.....Instructor in Physical Education
B.S., 1930, Wisconsin; M.A., 1931, Columbia
- McMahon, Edward, 1908 (1927).....Professor Emeritus of American History
Ph.B., 1898, Washington; M.A., 1907, Wisconsin
- McMahon, Theresa Schmid, 1911 (1929).....Professor Emeritus of Economics and Labor
B.A., 1899, M.A., 1901, Washington; Ph.D., 1909, Wisconsin
- McMinn, Bryan Towne, 1920 (1939).....Professor of Mechanical Engineering
B.S. in M.E., 1918, Oregon State; M.S. in M.E., 1926, M.E., 1931, Washington
- Mackenzie, Christine, 1937.....Instructor in Nursing Education
R.N., 1930, Stanford School of Nursing; B.S., P.H.C., 1937, Washington
- Mackenzie, Donald H., 1929 (1940).....Associate Professor of Management and Accounting
B.B.A., M.B.A., 1925, Washington; C.P.A.
- Mackin, J. Hoover, 1934 (1940).....Associate Professor of Geology
B.S., 1930, New York; M.A., 1932, Ph.D., 1937, Columbia
- MacLean, Dorothy, 1936 (1939).....Instructor in Physical Education
B.S., 1933, Oregon
- Magnusson, Carl Edward, 1904 (1906).....Professor of Electrical Engineering; Executive Officer, Department of Electrical Engineering; Dean Emeritus, College of Engineering; Director, Engineering Experiment Station
B.E.E., 1896, M.S., 1897, Ph.D., 1900, E.E., 1905, Wisconsin
- Maki, John McGilvrey, 1939.....Associate in Oriental Studies
B.A., 1932, M.A., 1936, Washington
- Mander, Linden A., 1928 (1937).....Professor of Political Science
M.A., 1921, Adelaide (Australia)
- Mansfield, Robert S., 1932 (1937).....Assistant Professor of Journalism
B.A., 1926, M.A., 1931, Michigan
- Marckworth, Gordon Dotter, 1939.....Professor of Forest Management
B.S.F., 1916, Ohio; M.F., 1917, Yale
- Mark, Sara N., 1937.....Associate in English
B.A., B.S., 1911, M.A., 1929, Washington
- Martin, Arthur W., 1937 (1938).....Assistant Professor of Physiology
B.S., 1931, College of Puget Sound; Ph.D., 1936, Stanford

- Martin, Charles Emanuel, 1924.....Professor of Political Science;
Executive Officer of the Department of Political Science
B.L., 1914, A.M., 1915, California; Ph.D., 1917, Columbia
- Martin, Howard Hanna, 1930 (1940).....Professor of Geography; Executive
Officer of the Department of Geography
B.S., 1922, Pennsylvania; M.A., 1923, Ph.D., 1929, George Washington; Sc.D., 1937, Mon-
mouth
- Martin, Victor J., 1937 (1939).....Assistant Professor of Aeronautical Engineering
B.S., 1934, California; M.S. in M.E., 1935, M.S. in A.E., 1936, California Institute of
Technology
- May, Charles Culbertson, 1912 (1929).....Professor of Civil Engineering and
Architecture; Superintendent of Buildings and Grounds
B.S. in C.E., 1910, Washington
- Meisnest, Frederick William, 1906.....Professor of Germanic Literature
B.S., 1893, Ph.D., 1904, Wisconsin
- Menocal, George Lawrence, Lieutenant Commander, U.S.N., 1939.....Assistant
Professor of Naval Science and Tactics
B.S., 1922, U.S. Naval Academy
- Metheny, David, 1940.....Lecturer in Nursing Education
A.B., 1920, Pennsylvania; M.D., 1923, Jefferson Medical College
- Meyer, Herman Carl H., 1934 (1937).....Assistant Professor of Germanic
Languages
B.A., 1924, Capital University (Ohio); Ph.D., 1936, Chicago
- Mikesell, Raymond, 1937.....Instructor in Economics and Business
B.A., M.A., 1935, Ph.D., 1939, Ohio State
- Miller, Alfred Lawrence, 1923 (1937).....Professor of Mechanics and Structures
B.S. in C.E., 1920, C.E., 1926, Washington
- Miller, Charles John, 1927 (1936).....Associate Professor of Marketing
B.B.A., 1922, M.B.A., 1927, Washington
- Molzahn, Johannes (1938).....Acting Assistant Professor of Design
Breslau (Germany)
- More, Charles Church, 1900 (1912).....Professor of Structural Engineering
C.E., 1898, Lafayette; M.C.E., 1899, Cornell; M.S., 1901, Lafayette
- Moritz, Harold Kennedy, 1928 (1939).....Associate Professor of Civil Engineering
B.S.(M.E.), 1921, Massachusetts Institute of Technology
- Moritz, Robert Edouard, 1904.....Professor of Mathematics
B.S., 1892, Hastings; Ph.M., 1896, Chicago; Ph.D., 1901, Nebraska; Ph.n.d., 1902, Strass-
burg
- Mullemeister, Hermance, 1918 (1928).....Assistant Professor of Mathematics
Ph.D., 1913, Royal University of Utrecht (Holland)
- *Mund, Vernon A., 1932 (1937).....Professor of Economics
B.B.A., 1928, M.B.A., 1929, Washington; Ph.D., 1932, Princeton
- Munro, Kathleen, 1929 (1936).....Associate Professor of Music
B.M., 1924, Washington; M.A., 1929, Columbia; Ph.D., 1937, Washington

*On leave 1940-1941.

- *Murray, Ray M., Jr., 1939**.....Associate in General Engineering
B.S., 1938, Washington
- Neikirk, Lewis Irving, 1911 (1914)**.....Assistant Professor of Mathematics
B.S., 1898, M.S., 1901, Colorado; Ph.D., 1903, Pennsylvania
- Nelson, Everett J., 1930 (1934)**.....Associate Professor of Philosophy
B.A., 1923, M.A., 1925, Washington; M.A., 1928, Ph.D., 1929, Harvard
- Nelson, Frederick Jens, Lieutenant Commander, U.S.N., 1939**.....Assistant
Professor of Naval Science and Tactics
B.S., 1923, U.S. Naval Academy; M.S., 1928, Harvard
- Newhouse, Dean Scholfield, 1934**.....Dean of Men
B.A., 1930, Washington
- Newsom, Bryan, 1936**.....Lecturer in Nursing Education
M.D., 1930, Northwestern; C.P.H., 1934, Johns Hopkins
- Nicholson, Donald A., 1935**.....Lecturer in Nursing Education
M.D., 1897, Minnesota
- Nix, Martha J., 1928**.....Associate in English
B.A., 1922, M.A., 1925, Washington
- Norlin, Agnes, 1934**.....Associate in English
B.A., 1927, Colorado; M.A., 1931, Washington
- Normann, Theodore F., 1940**.....Associate Professor of Music
B.A., 1925, Macalester College; M.A., 1928, Columbia
- Norrie, Kenneth Peter, 1939**.....Acting Instructor in General Engineering
B.S. in C.E., 1937, Washington State; M.S. in C.E., 1939, Wisconsin
- Norris, Anna Church, 1938**.....Research Associate in Oceanography
B.S., 1924, M.S., 1927, Ph.D., 1931, Washington
- Norris, Earl R., 1927 (1940)**.....Professor of Chemistry
B.A., 1919, Montana State; Ph.D., 1924, Columbia
- Northrup, Mary W., 1931**.....Instructor in Nursing Education
A.B., 1920, Vassar; M.S., 1923, Columbia
- Nostrand, Howard Lee, 1939**.....Professor of Romanic Languages; Executive
Officer of the Department of Romanic Languages
B.A., 1932, Amherst; A.M., 1933, Harvard; Dr. of Univ. of Paris, 1934
- Nottelmann, Rudolph H., 1927**.....Professor of Law
A.B., 1912, Monmouth; M.A., 1913, Illinois; LL.B., 1922, Yale
- O'Bryan, Joseph Grattan, 1914 (1927)**.....Professor of Law
B.A., Jesuit College (Denver); LL.D., 1928, Regis College
- Olcott, Virginia, 1931 (1939)**.....Assistant Professor of Nursing Education
R.N., Peter Bent Brigham Hospital; B.S., 1927, M.S., 1931, Washington
- Oliver, Louise Benton, 1920 (1929)**.....Associate in Music
B.M., 1919, Washington
- Olschewsky, Henry, 1931 (1939)**.....Assistant Professor of Architecture
B.Arch., 1931, Washington

*Not on 1940-1941.

- Ordal, Erling J., 1937 (1938).....Assistant Professor of Bacteriology
A.B., 1927, Luther; Ph.D., 1936, Minnesota
- Orr, Frederick Wesley, 1925 (1928).....Professor of English
B.L., 1901, Drury; G.C.D., 1905, Boston School of Expression; M.A., 1925, Lawrence College
- Osborn, Frederick Arthur, 1902.....Professor of Physics
Ph.B., 1896, Ph.D., 1907, Michigan
- Osburn, Worth J., 1936.....Professor of Education
A.B., 1903, Central College; A.M., 1904, Vanderbilt; B.S.(Educ.), 1908, Missouri; Ph.D., 1921, Columbia
- Owens, Charles H., Major, Infantry, 1938.....Assistant Professor of Military Science and Tactics
LL.B., 1917, Idaho; Infantry School, 1924, 1930, 1933; Command and General Staff School, 1938
- Padelford, Frederick Morgan, 1901.....Professor of English; Dean of the Graduate School
B.A., 1896, Colby; A.M., Ph.D., 1899, Yale; LL.D., 1934, Colby
- Parker, Thomas R., Major, C.A.C., 1938.....Assistant Professor of Military Science and Tactics
Coast Artillery School, 1928; Command and General Staff School, 1933
- Patterson, Ambrose, 1919 (1939).....Professor of Painting
Melbourne National Gallery, Victoria, Australia; Julien, Colorossi and Delocluse Academies, Europe
- Pauly, Gene, 1935.....Associate in Music
Brussels Conservatory of Music
- Pautzke, Clarence, 1937.....Lecturer in Fisheries
B.S., 1932, Washington
- Payne, Blanche, 1927 (1936).....Associate Professor of Home Economics
B.S., 1916, Kansas State Teachers College; M.A., 1924, Columbia
- Peacock, Alexander H., 1935.....Lecturer in Nursing Education
M.D., 1903, Pennsylvania
- Pearce, John Kenneth, 1934.....Associate Professor of Forestry
B.S.F., 1921, Washington
- Peek, Clifford, 1938.....Assistant Professor of Physical Education
B.S., 1929, Washington; M.A., 1931, Columbia
- Pellegrini, Angelo, 1930 (1940).....Instructor in English
B.A., 1927, Washington
- Penington, Ruth, 1928 (1937).....Assistant Professor of Design
B.F.A., 1927, M.F.A., 1929, Washington
- Person, Henry, 1937.....Associate in English
B.A., 1927, Washington
- Petersen, Evald, 1939.....Associate in Accounting and Statistics
B.S., 1937, Denver

- Peterson, Dean F., Jr., 1939.....Instructor in General Engineering
B.A., 1934, Utah State Agricultural College; M.S.(C.E.), 1939, Rensselaar Polytechnic Institute
- Phelan, James, 1930.....Associate in Physical Education
B.A., 1917, Notre Dame
- Phifer, Lyman D., 1928 (1939).....Associate Professor of Oceanography;
Assistant Director of Oceanographic Laboratories
B.S., 1928, M.S., 1929, Ph.D., 1932, Washington
- Phillips, Herbert Joseph, 1920 (1934).....Assistant Professor of Philosophy
B.A., 1920, Ph.D., 1933, Washington
- Phillips, Ralph S., 1940.....Acting Instructor in Mathematics
A.B., 1935, California; Ph.D., 1939, Michigan
- Phillips, Ronald, 1935.....Associate in Music
- Pierce, Harry R., Lieutenant Colonel, C.A.C., 1937.. Assistant Professor of Military Science and Tactics
B.S., 1917, U.S. Military Academy; Coast Artillery School, 1921, 1932
- Pierson, William H., 1937 (1938).....Instructor in Geography
B.A., 1925, Texas; M.S., 1934, Washington
- Placek, E. Wayne, 1939.....Associate in General Engineering
B.S. in M.E., 1937, Washington
- Plein, Elmer M., 1938.....Instructor in Pharmacy
Ph.C., B.S., 1929, M.S., 1931, Ph.D., 1936, Colorado
- Posell, Edward A., 1936.....Lecturer in Nursing Education
B.S., 1923, City of New York; M.D., 1927, Boston
- Powell, Sargent, 1919 (1934).....Associate Professor of Chemistry
B.S., 1913, M.S., 1916, Washington; Ph.D., 1919, Illinois
- Powers, Francis Fountain, 1928 (1939).....Professor of Education; Dean of the College of Education
B.A., 1924, Washington; M.A., 1927, Oregon; Ph.D., 1928, Washington
- Pratt, Dudley, 1925.....Assistant Professor of Sculpture
B.A., 1919, Yale
- Preston, Howard Hall, 1920 (1922).....Professor of Money and Banking;
Dean of the College of Economics and Business
B.S., 1911, Coe College (Iowa); M.A., 1914, Ph.D., 1920, Iowa; LL.D., 1938, Coe College
- Pries, Lionel Henry, 1928 (1938).....Associate Professor of Architecture
A.B., 1920, California; M.Arch., 1921, Pennsylvania
- Quainton, Cecil Eden, 1924 (1936).....Associate Professor of History
A.B., 1918, Manitoba; B.A., 1924, Cambridge
- Quesenberry, Marshall H., Lieutenant Colonel, Infantry, 1939.....Assistant Professor of Military Science and Tactics
B.S., 1915, U.S. Military Academy; Infantry School, 1927, 1931; Command and General Staff School, 1928
- Rader, Melvin Miller, 1930.....Assistant Professor of Philosophy
B.A., 1925, M.A., 1927, Ph.D., 1929, Washington

- Radford, Ethel Sanderson, 1919.....Associate in Chemistry
B.A., 1895, McGill
- Rahskopf, Horace G., 1928 (1936).....Associate Professor of English
B.A., 1920, Willamette; M.A., 1927, Ph.D., 1935, Iowa
- Raitt, Effie Isabel, 1912 (1914).....Professor of Home Economics; Director
of the School of Home Economics
B.S., 1912, M.A., 1919, Columbia
- Ramsey, John W., Captain, retired, 1940.....Assistant Professor of Military
Science and Tactics
Infantry School, 1925 and 1930
- Ray, Verne F., 1933 (1937).....Instructor in Anthropology
B.A., 1931, M.A., 1933, Washington; Ph.D., 1937, Yale
- Read, William Merritt, 1927 (1936).....Associate Professor of Classical
Languages
A.B., 1923, A.M., 1924, DePauw; Ph.D., 1926, Michigan
- Reeves, George Spencer, 1935 (1939).....Assistant Professor of Physical
Education
B.S., 1933, M.S., 1938, Oregon
- Rhodes, Fred H., Jr., 1927 (1936).....Assistant Professor of Civil Engineering
B.S.(C.E. and M.E.), 1926, C.E., 1935, Washington
- Richards, John Stewart, 1934 (1939).....Lecturer in Librarianship;
Executive Assistant, Library
B.A., 1916, Washington; M.A., 1932, California
- Richards, John W., 1931 (1937).....Professor of Law
B.A., 1923, Wisconsin; LL.B., 1926, LL.M., 1930, S.J.D., 1931, Harvard
- Richards, Willard K., Lieutenant Colonel, retired.....Associate Professor of
Military Science and Tactics
B.S., 1910, U.S. Military Academy; Coast Artillery School, 1916, 1928; Command and
General Staff School, 1929
- Rigg, George Burton, 1909 (1928).....Professor of Botany; Executive
Officer of the Department of Botany
B.S., 1896, Iowa; A.M., 1909, Washington; Ph.D., 1914, Chicago
- Riley, Herbert P., 1938.....Assistant Professor of Botany
A.B., 1925, Princeton; A.M., 1929, Columbia; Ph.D., 1931, Harvard
- Rising, Louis Wait, 1934 (1936).....Professor of Pharmacy
Ph.G., B.S., 1924, Oregon State; M.S., 1926, Ph.C., Ph.D., 1929, Washington
- Roberts, Milnor, 1901.....Professor of Mining and Metallurgy; Dean
of the College of Mines
B.A., 1899, Stanford
- Robinson, Rex J., 1929 (1937).....Associate Professor of Chemistry
B.A., 1925, DePauw; M.A., 1927, Ph.D., 1929, Wisconsin
- Rollins, Paul R., 1940.....Lecturer in Nursing Education
B.S., 1924, Washington; M.D., 1928, Washington Univ., St. Louis

- Rosen, Moritz, 1909 (1928).....Professor of Music
Graduate, Warsaw Conservatory, Russia
- Rowlands, Thomas McKie, 1928 (1934).....Assistant Professor of General
Engineering
B.S.(Nav. Arch. and Marine Engr.), 1926, Massachusetts Institute of Technology
- Rowntree, Jennie Irene, 1925 (1932).....Professor of Home Economics
B.S., 1918, Wisconsin; M.S., 1924, Chicago; Ph.D., 1929, Iowa
- Rulifson, Leone Helmich, 1923 (1937).....Assistant Professor of Physical
Education
B.S., 1922, M.A., 1935, Washington
- St. Clair, Laura P., 1937.....Associate in English
A.B., 1915, West Lafayette; M.A., 1917, Adrian College, Michigan
- Samson, Victor J., 1937.....Lecturer in Fisheries
B.S., 1930, Washington
- Sanderman, Llewellyn Arthur, 1928 (1936).....Instructor in Physics
B.S., 1923, Linfield; M.S., 1931, Washington
- Savage, George Milton, Jr., 1935 (1936).....Instructor in English
B.A., 1928, M.A., 1928, Ph.D., 1935, Washington
- Savery, William, 1902.....Professor of Philosophy; Executive Officer
of the Department of Philosophy
A.B., 1896, Brown; A.M., 1897, Ph.D., 1899, Harvard
- Sawyer, Ruth Freida, 1940.....Instructor in Home Economics
B.S., 1933, Minnesota; M.S., 1940, Iowa State
- Schaefer, Milner B., 1937.....Lecturer in Fisheries
B.S., 1935, Washington
- Schaller, Gilbert Simon, 1922 (1937).....Professor of Mechanical Engineering
B.S., 1916, Illinois; M.B.A., 1925, Washington
- Scheffer, Victor B., 1938.....Lecturer in Forestry
B.S., 1930, M.S., 1932, Ph.D., 1936, Washington
- Schertel, Max, 1931 (1938).....Instructor in German
B.A., 1923, M.A., 1928, Ph.D., 1938, Washington
- Schmid, Calvin F., 1937.....Associate Professor of Sociology
B.A., 1925, Washington; Ph.D., 1930, Pittsburgh
- Schmoe, Floyd, 1935.....Instructor in Forestry
B.S., 1922, New York State College of Forestry; M.S. in Forestry, 1937, Washington
- Schrader, O. H., Jr., 1936 (1937).....Instructor in Forestry
B.S.F., 1931, Washington; M.S., 1932, Wisconsin
- Schram, Lloyd W., 1940.....Research Associate in the Bureau of
Governmental Research
B.A., 1934, LL.B., 1937, Washington; LL.M., 1938, Harvard
- Schultheis, Frederick, 1938 (1939).....Assistant Professor of Oriental Studies
B.A., 1929, Washington; M.A., 1931, Columbia

- Scott, Lucile, 1936.....Instructor in Nursing Education
R.N., 1931, Providence Hospital; B.S., 1933, Washington
- Seeman, Albert L., 1928 (1939).....Associate Professor of Geography
A.B., 1921, Morningside (Iowa); M.B.A., 1924, Northwestern; Ph.D., 1930, Washington
- Sergev, Sergius, 1923 (1939).....Associate Professor of Civil Engineering
B.S. in M.E., 1923, M.E., 1931, Washington
- Shattuck, Warren L., 1935 (1939).....Associate Professor of Law
B.A., LL.B., 1934, Washington; J.S.D., 1936, Yale
- Shefelman, S. Harold, 1930.....Lecturer in Law
Ph.B., 1920, Brown; LL.B., 1925, Yale
- Sheldon, Charles S., II, 1940.....Instructor in Transportation
B.A., 1936, M.A., 1938, Washington; A.M., 1939, Harvard
- Sherwood, K. K., 1935.....Lecturer in Nursing Education
B.S., 1923, B.M., 1925, M.D., 1928, Minnesota
- Sholley, John Burrill, 1932 (1939).....Professor of Law
LL.B., 1932, Washington; J.S.D., 1937, Chicago
- Shuck, Gordon Russell, 1918 (1937).....Professor of Electrical Engineering
E.E., 1906, Minnesota
- Sidey, Thomas Kay, 1903 (1927).....Professor of Latin and Greek
A.B., 1891, Toronto; Ph.D., 1900, Chicago
- Simpson, Lurline Violet, 1924 (1934).....Assistant Professor of French
B.A., 1920, M.A., 1923, Ph.D., 1928, Washington
- Sivertz, Victorian, 1926 (1936).....Assistant Professor of Chemistry
B.S., 1922, Washington; M.S., 1924, West Virginia; Ph.D., 1926, McGill
- Skinner, Macy Millmore, 1916 (1928).....Professor of Foreign Trade
A.B., A.M., Ph.D., 1897, Harvard
- Smart, Agnes Mabel, 1939.....Assistant Professor of Social Work;
Supervisor of Field Work
B.S., 1933, New York
- Smith, Charles Wesley, 1905 (1926).....Librarian; Professor of Librarianship
B.A., 1903, B.L.S., 1905, Illinois
- Smith, Frederick Charnley, 1926 (1933).....Assistant Professor of Civil Engineering
B.S. in C.E., 1926, C.E., 1929, Washington
- Smith, George McPhail, 1919.....Professor of Inorganic Chemistry
B.S., 1900, Vanderbilt; Ph.D., 1903, Freiburg (Germany)
- Smith, George Sherman, 1921 (1933).....Associate Professor of Electrical
Engineering
B.S. in E.E., 1916, E.E., 1924, Washington
- Smith, Harriet H., 1931.....Assistant Professor of Nursing Education;
Director of Nursing Service, King County Hospital
R.N., Seattle General Hospital; B.A., 1918, Mount Holyoke

- Smith, Harry Edwin, 1914 (1929).....Professor of Insurance; Director of Extension Service
A.B., 1906, DePauw; Ph.D., 1912, Cornell
- Smith, Iris Canfield, 1931.....Associate in Music
B.M., 1922, Washington
- Smith, Stevenson, 1911 (1916).....Professor of Psychology; Executive Officer, Department of Psychology; Director of the Gatzert Foundation
A.B., 1904, Ph.D., 1909, Pennsylvania
- Snyder, William Arthur, 1940.....Associate in Mechanical Engineering
B.S. in M.E., 1939, Minnesota
- Somers, Raymond H., 1935.....Lecturer in Nursing Education
B.S., 1921, M.D., 1921, Northwestern
- Soule, Elizabeth, 1920 (1934).....Professor of Nursing Education; Director of the School of Nursing Education
R.N., Malden Hospital, Massachusetts; B.A., 1926, M.A., 1930, Washington
- Spector, Ivar, 1931 (1936).....Assistant Professor of Oriental Studies
B.A., 1915, Tuchpazua (Russia); M.A., 1919, Teachers Seminar (Russia); M.A., 1926, Northwestern; Ph.D., 1928, Chicago
- Spellacy, Edmond F., 1935 (1936).....Associate Professor of Political Science
A.B., 1927, A.M., 1931, Stanford; Ph.D., 1935, Harvard
- Spence, Louise Child, 1940.....Lecturer in Social Work
B.S., 1930, Kansas State; M.S., 1933, Western Reserve
- Sperlin, Ottis Bedney, 1921 (1923).....Lecturer in English
A.B., 1903, Indiana; Ph.M., 1908, Chicago
- Spoerry, Gottfried W., Major, Infantry, 1939.....Assistant Professor of Military Science and Tactics
B.Pd., 1902, M.Pd., 1903, Idaho State Normal; Infantry School, 1927
- Stansby, Maurice E., 1938.....Lecturer in Fisheries
B.S., 1930, M.S., 1933, Minnesota
- Starr, Mary Elizabeth, 1935.....Instructor in Home Economics
B.S., 1929, M.A., 1935, Washington
- Steiner, Jesse Frederick, 1931.....Professor of Sociology and Social Work; Executive Officer of the Department of Sociology
B.A., 1901, Heidelberg College; M.A., 1913, Harvard; Ph.D., 1915, Chicago; Litt.D., 1937, Heidelberg College
- Stevens, Belle, 1932.....Research Associate in Oceanography and Zoology
Ph.D., 1931, Washington
- Stevens, Edwin B., 1910 (1936).....Professor of Education
A.B., 1896, Tufts College; A.M. (Educ.), 1899, Harvard
- Stevens, Leonard W., 1937.....Associate in Physical Education
B.S., 1933, Washington
- Stirling, Brents, 1932 (1937).....Assistant Professor of English
B.A., LL.B., 1926, Ph.D., 1934, Washington

- Stone, Edward Noble, 1910 (1940).....Professor of Classical Languages
A.B., 1891, M.A., 1893, Olivet
- Stuntz, Daniel Elliot, 1940.....Instructor in Botany
B.S., 1935, Washington
- Sullivan, C. L., 1918 (1935).....Instructor in Mechanical Engineering
- Suomela, Arnie J., 1935.....Lecturer in Fisheries
B.S., 1924, M.S., 1931, Washington
- Sutermester, Robert Arnold, 1940.....Associate in Economics and Business
A.B., 1934, Harvard
- Svihla, Arthur, 1938.....Associate Professor of Zoology
A.B., 1925, Illinois; Ph.D., 1931, Michigan
- Svihla, Ruth Dowell, 1940.....Research Associate in Zoology and Botany
A.B., 1920, Smith; M.S., 1923, Illinois; Ph.D., 1930, Michigan
- Takayoshi, Masako, 1940.....Instructor in Nursing Education
B.S., 1934, Washington
- Tartar, Herman Vance, 1917 (1927).....Professor of Chemistry
B.S., 1902, Oregon State; Ph.D., 1920, Chicago
- Tatsumi, Henry S., 1935 (1939).....Assistant Professor of Oriental Studies
B.A., 1933, M.A., 1935, Washington
- †Taub, Abraham H., 1936 (1939).....Assistant Professor of Mathematics
B.S., 1931, Chicago; Ph.D., 1935, Princeton
- Taylor, Edward Ayres, 1929.....Professor of English
B.A., 1909, Denver; M.A., 1918, Ph.D., 1925, Chicago
- Taylor, George Edward, 1939.....Assistant Professor of Oriental Studies;
Executive Officer of the Department of Oriental Studies
A.B., 1927, A.M., 1928, Birmingham, England
- Terrell, Margaret Elma, 1928 (1936).....Assistant Professor of Home Economics;
Director of Commons; Business Director of Dining Halls and Residences
B.A., 1923, Penn College; M.A., 1927, Chicago
- Thomas, Harlan, 1926.....Professor of Architecture; Director Emeritus of the
School of Architecture
B.S., 1894, Colorado State College
- Thompson, Thomas Gordon, 1919 (1929).....Professor of Chemistry; Director
of Oceanographic Laboratories
A.B., 1914, Clark; M.S., 1915, Ph.D., 1918, Washington
- Thompson, William F., 1930.....Professor of Fisheries; Director of the
School of Fisheries
B.A., 1911, Ph.D., 1931, Stanford
- Thomson, David, 1902.....Professor of Latin; Vice Dean of College of Arts
and Sciences; Vice President Emeritus; Executive Officer of the Department
of Classical Languages and Literature
B.A., 1892, Toronto; LL.D., 1936, British Columbia

†On leave, 1940-1941.

- Thorgrimson, O. B., 1937.....Lecturer in Law
LL.B., 1901, Nebraska
- Thorne, Thelma, 1937.....Instructor in Home Economics
B.S., 1927, Washington
- Tilden, Dorothy May, 1936 (1937).....Assistant Professor of Home Economics
A.B., 1922, California; M.A., 1934, Cornell
- Torney, John A., Jr., 1930 (1937).....Assistant Professor of Physical Education
B.S., 1928, Washington; M.A., 1930, Columbia
- Truax, Arthur, 1924.....Lecturer in Finance
- *Trumbull, Wendell Piggott, 1940.....Acting Instructor in Management
and Accounting
B.S. in Accountancy, 1937, Illinois
- Tustin, Whitney, 1935.....Associate in Music
- Tyler, Richard G., 1929.....Professor of Sanitary Engineering
C.E., 1908, Texas; B.S. in C.E., 1910, Massachusetts Institute of Technology
- Tymstra, Sybren Ruurd, 1929 (1939).....Associate Professor of Mechanical
Engineering
M.E., 1906, Zwickau (Germany)
- Uehling, Edwin A., 1936.....Assistant Professor of Physics
A.B., 1925, Wisconsin; M.A., 1930, Ph.D., 1932, Michigan
- Ulbrickson, Alvin M., 1927.....Associate in Physical Education
B.B.A., 1927, Washington
- Umphrey, George Wallace, 1911 (1922).....Professor of Romanic Languages
A.B., 1899, Toronto; A.M., 1901, Ph.D., 1905, Harvard; Litt.D., 1920, San Marios (Lima)
- Utterback, Clinton Louis, 1918 (1934).....Professor of Physics
B.S., 1908, Purdue; M.S., 1918, Washington; Ph.D., 1926, Wisconsin
- Vail, Curtis C. D., 1939.....Professor of Germanic Languages and Literature;
Executive Officer of the Department of Germanic Languages and Literature
A.B., 1924, Hamilton; M.A., 1929, Ph.D., 1936, Columbia
- Van Cleve, Richard, 1932.....Lecturer in Fisheries
B.S., 1927, Washington
- Vandraegen, Daniel R. E., 1935.....Associate in English
B.A., 1932, Washington
- Van Horn, Robert B., 1925 (1938).....Professor of Hydraulic Engineering;
Executive Officer of the Department of Civil Engineering
B.S. in C.E., 1916, C.E., 1926, Washington
- Van Norman, Karl H., 1932.....Director of Medical Instruction, King
County Hospital
M.D., 1904, Toronto
- Van Ogle, Louise, 1915 (1932).....Associate Professor of Music
Theoretical work with Dr. Bridge, Chester, England; Richter, Leipzig; Piano, Godowsky,
Lhevinne, Berlin; Harold Bauer, Paris

*On winter and spring quarters, 1940.

- Venino, Albert Franz, 1913 (1928).....Professor of Music
Stuttgart Conservatory, Germany; Pupil of Leschetizky
- Vickner, Bertha Almen, 1920.....Associate in English
B.A., 1910, Gustavus Adolphus; M.A., 1917, Washington
- Vickner, Edwin John, 1912.....Professor of Scandinavian Languages;
Executive Officer of the Department of Scandinavian Languages
A.B., 1901, A.M., 1902, Ph.D., 1905, Minnesota
- von Brevern, Maxim, 1934 (1937).....Assistant Professor of Political Science;
Executive Secretary of the Bureau of International Relations
Graduate, Imperial and Royal Maria Theresian Military Academy, Wienerneustadt, Austria,
1907; Ph.D., 1936, Washington
- Wade, Arthur E., 1928.....Lecturer in Home Economics
B.S., Cornell College; M.D., 1905, Sioux City College of Medicine
- Wagenknecht, Edward Charles, 1925 (1940).....Associate Professor of English
B.T., 1921, Union Theological College; Ph.B., 1923, M.A., 1924, Chicago; Ph.D., 1932,
Washington
- Walters, Margaret C., 1929 (1940).....Instructor in English
B.A., 1917, Mills; M.A., 1919, Yale
- Wangaard, Frederick, 1936 (1939).....Assistant Professor of Forestry
B.S., 1933, Minnesota; Ph.D., 1939, New York State College of Forestry
- Ward, May Dunn, 1918.....Acting Dean of Women
B.S., 1917, Washington; M.A., 1921, Columbia
- Warner, Frank Melville, 1925 (1937).....Professor of Engineering Drawing
B.S.(M.E.), 1907, Wisconsin
- Watts, Charles E., 1933.....Lecturer in Nursing Education
B.S., 1913, Idaho; M.D., 1918, Rush Medical
- Weaver, Charles Edwin, 1907 (1921).....Professor of Paleontology
B.S., 1904, Ph.D., 1907, California
- Weber, Julius A., 1938.....Lecturer in Nursing Education
B.A., M.D., 1925, Nebraska
- Webster, Donald H., 1939.....Associate Professor of Political Science;
Executive Secretary, Bureau of Governmental Research
B.A., 1929, LL.B., 1931, Ph.D., 1933, Washington
- Weigle, Claude L., Lieutenant, U.S.N., 1939....Assistant Professor of Naval Science
B.S., 1927, U.S. Naval Academy
- Weiser, Russell S., 1935 (1938).....Assistant Professor of Bacteriology
B.S., 1930, M.S., 1931, North Dakota State; Ph.D., 1934, Washington
- Welke, Walter, 1929 (1936).....Assistant Professor of Music
B.M., 1927, Michigan
- Werner, August, 1931.....Professor of Music
B.S., 1913, College of Agriculture, Stend, Norway
- Wesner, Elenora, 1924.....Associate in German
A.B., 1915, Chicago; M.A., 1923, Northwestern

- West, Frank Beach, 1939.....Instructor in Chemical Engineering
B.S., 1936, Ph.D., 1939, Minnesota
- Westerman, Beulah Dorothea, 1939.....Assistant Professor of Home Economics
B.S., 1919, Montana; M.S., 1923, Chicago; Ph.D., 1928, Illinois
- Westfall, Marjorie Elgar, 1940.....Associate in Chemistry
B.S., 1930, Washington
- Whittlesey, Walter Bell, 1909 (1929).....Assistant Professor of French
B.A., 1907, M.A. 1909, Washington
- Wick, Oswald Justin, 1937.....Associate in Mining, Metallurgical and
Ceramic Engineering
B.S., 1936, M.S. 1937, Montana School of Mines
- Wilcox, Chester, 1930.....Associate in Physical Education
B.S., 1928, Purdue
- Wilcox, Elgin Roscoe, 1920 (1936).....Professor of General Engineering;
Executive Officer of the Department of General Engineering
B.S., 1915, Met.E., 1919, Washington
- Wilkie, Richard Francis, 1937.....Associate in German
B.A., 1934, M.A., 1936, Washington
- Williams, Curtis Talmadge, 1920 (1936).....Professor of Education
A.B., 1913, Kansas State Normal; A.M., 1914, Ph.D., 1917, Clark
- Wilson, Auston M., Jr., Major, C.A.C., 1938.....Assistant Professor of
Military Science and Tactics
B.S., 1918, U.S. Military Academy; Field Artillery School, 1927; Coast Artillery School
1930; Command and General Staff School, 1938
- Wilson, Clotilde, 1929 (1937).....Assistant Professor of Romanic Languages
B.A., 1926, M.A., 1927, Ph.D., 1931, Washington
- Wilson, Florence Bergh, 1919 (1930).....Assistant Professor of Music
B.M., 1917, B.A., 1924, Washington; M.A., 1925, Columbia
- Wilson, George Samuel, 1906 (1924).....Professor of Mechanical Engineering;
Consulting Engineer
B.S., 1906, Nebraska
- Wilson, Ruth, 1936.....Instructor in Physical Education
B.S., 1931, Utah; M.S., 1936, Wisconsin
- Wilson, William Charles Eade, 1926 (1940).....Associate Professor of Spanish
A.B., 1922, Montana; M.A., 1925, Ph.D., 1928, Washington
- Wilson, William R., 1919 (1929).....Professor of Psychology
B.A., 1917, M.S., 1921, Ph.D., 1925, Washington

- Winger, Roy Martin, 1918 (1925).....Professor of Mathematics
A.B., 1906, Baker; Ph.D., 1912, Johns Hopkins
- Winkenwerder, Hugo, 1909 (1912).....Professor of Forestry; Dean of the
College of Forestry
B.S., 1902, Wisconsin; M.F., 1907, Yale
- Winslow, Arthur Melvin, 1918 (1927).....Professor of Mechanical Engineering
Ph.B., 1903, Brown; B.S., 1906, Massachusetts Institute of Technology
- Winther, Sophus Keith, 1925 (1940).....Professor of English
B.A., 1918, M.A., 1919, Oregon; Ph.D., 1926, Washington
- Witte, Ernest F., 1939.....Professor of Social Work; Director of the
Graduate School of Social Work
B.Sc. in B.A., 1925, A.M., 1926, Nebraska; Ph.D., 1932, Chicago
- Wolfe, Charles Morgan, 1937.....Instructor in Electrical Engineering
B.S. in E.E., 1925, West Virginia; M.S., 1929, Ph.D., 1932, California Institute of
Technology
- Wood, Carl Paige, 1918 (1928).....Professor of Music; Director of the
School of Music
B.A., 1906, M.A., 1907, Harvard
- Wood Ralph F., Captain, U.S.N., 1940.....Lecturer in Naval Science
B.S., 1911, United States Naval Academy
- Woodcock, Edith, 1930 (1933).....Assistant Professor of Music
B.M., 1925, Rochester
- Woolston, Howard B., 1919.....Professor of Sociology
A.B., 1898, Yale; S.T.B., 1901, Chicago; M.A., 1902; Harvard; Ph.D., 1909, Columbia
- Worcester, John Locke, 1917 (1922).....Professor of Anatomy; Executive
Officer of the Department of Anatomy
M.D., 1900, Birmingham School of Medicine
- Worden, Ruth, 1926 (1937).....Professor of Librarianship; Director of the
School of Librarianship
B.A., 1911, Wellesley
- Worman, Eugenie H., 1919.....Associate in Design
B.A.(Educ.), 1928, Washington
- Wyckoff, Hewlett J., 1938.....Lecturer in Nursing Education
M.D., 1916, Northwestern
- Zillman, Lawrence J., 1930 (1937).....Assistant Professor of English
B.A., 1928, Ph.D., 1936, Washington
- Zeusler, Frederick A., Commander, 1937.....Lecturer in Oceanography
Graduate, Coast Guard School
- Zuckerman, Herbert Samuel, 1939.....Instructor in Mathematics
B.S., 1932, California Institute of Technology; M.S., 1934, Chicago; Ph.D., 1936, California

- Zumwalt, Eugene V., 1936 (1940).....Assistant Professor of Forestry
B.S.F., 1934, California; M.S.F., 1938, Washington
- Zwermann, Carl Henry, 1939.....Assistant Professor of Ceramics
B.S., 1929, M.S., 1937, Ph.D., 1939, Illinois

Walker-Ames Lecturers and Professors

- Bjerknes, J., 1940 (winter).....Lecturer in Meteorology
Geofysiske Institut of Bergen, Norway
- Burchard, John E., 1940 (autumn).....Lecturer in Architecture
Albert Farwell Bemis Foundation, Massachusetts Institute of Technology
- Compton, Arthur, 1940 (spring).....Professor of Physics
University of Chicago
- Henrici, Arthur T., 1941 (spring and summer).....Professor of Bacteriology
University of Minnesota Medical School
- Lancaster, H. Carrington, 1941 (winter).....Professor of French Literature
The Johns Hopkins University
- Von Neumann, John, 1940 (summer).....Professor of Mathematics
Institute for Advanced Study

THE UNIVERSITY OF WASHINGTON

The University was established at Seattle by the territorial legislature in January, 1861, and classes were opened on November 4 of that year in a building erected on a ten-acre tract which now lies in the heart of Seattle's metropolitan district. The University was moved to its present location on the shores of Lakes Washington and Union in 1895. Under the constitution and laws of the State, 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. The University derives its support from legislative appropriation, student fees, endowments, and the income from real estate owned by the University. The campus contains 605 acres within the city limits of Seattle between Lakes Washington and Union, with a shore line of more than one mile on Lake Washington and about a quarter mile on Lake Union.

The University Library contains 354,919 (February, 1940) bound volumes and receives currently about 7,148 serial publications. The Henry Suzzallo Library building houses the basic collection of books and provides facilities for students and faculty. Specialization is provided in the fields of science, the social studies and Pacific Northwest Americana. A branch in Parrington Hall gives reference service in the field of English language and literature. There are several departmental collections on the campus.

Two libraries are separately administered: the Law School Library, with 86,127 volumes, and the Drama Library, with 13,225 volumes. The libraries of the University, together with the Seattle Public Library and other Seattle library agencies, provide more than a million volumes for the use of students and research workers.

The service offered by the University Library staff includes instruction in the use of the Library and of its more specialized materials. Orientation tours are conducted for freshmen each fall and a printed guide to the Library is supplied to new students.

The museum of the University of Washington was created the State Museum by law in 1899. Its collections are representative of the history, ethnology, geology and natural history of the state and adjacent regions, and of those countries with which the state has special relations.

The Horace C. Henry Gallery, with its collection representing the work of some 200 representative nineteenth century painters, was the gift of the late Horace C. Henry of Seattle. To supplement the permanent collections, traveling exhibitions are shown during the college year.

The Department of Commerce maintains at the College of Mines its Northwest Experiment Station, which serves the Pacific Northwest and the coast regions of Alaska. The Mine Safety Station of the United States Bureau of Mines is also located on the campus.

The Engineering Experiment Station was organized in 1917 to co-ordinate the engineering investigations in progress and to facilitate development of industrial research in the University.

The Gatzert foundation for Child Development was established in 1910 by means of a gift from Sigmund Schwabacher and the executor of the will of Abraham Schwabacher and is under the administrative control of the Department of Child Welfare.

The Alice McDermott Memorial foundation was established in 1924 through the will of the late Mrs. Josephine McDermott, for research and study in the fields of tuberculosis and cancer.

THE UNIVERSITY ORGANIZATION

The University of Washington is one of five institutions of higher education which compose the state's system of public education, the others being the state college and the three state colleges of education. To the University is given exclusive authority to instruct in the following major lines: aeronautical engineering, architecture, commerce, fisheries, forestry, journalism, law, librarianship, 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.

The Colleges and Schools. The University includes the following colleges and schools:

- A. *The College of Arts and Sciences*, composed of the departments in liberal arts and pure science and the following semi-professional schools:

The School of Architecture	The School of Librarianship
The School of Art	The School of Music
The School of Fisheries	The School of Nursing Education
The School of Home Economics	The School of Physical Education
The School of Journalism	General Studies—for students with no major.

- B. *The College of Economics and Business.*

- C. *The College of Education.*

- D. *The College of Engineering.*

- E. *The College of Forestry.*

- F. *The Graduate School*, including the Graduate School of Social Work.

- G. *The School of Law.*

- H. *The College of Mines.*

- I. *The College of Pharmacy.*

Definitions and Explanations. 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 followed 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 freshman year, or, in the College of Education, with the sophomore year, and covering 12 quarters. The work of a *school* is preceded by two or more years of college work.

The four-year program of the college is divided into the *lower division* (freshman and sophomore) and *upper division* (junior and senior).

The term *unit* is applied to work taken in high school; a *credit* to work taken in college. A university credit is given for one hour of recitation a week throughout one quarter. Thus a quarter course in which there are five recitations a week is a five-credit course.

The term *major* is applied to the department or subject in which a student elects to specialize.

Special Curricula within the Schools. Certain semi-professional curricula are given for which no special school or college is provided. Such is the curriculum in chemistry in the College of Arts and Sciences.

The University does not give a medical course, but 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 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 can be done without interference with the student's regular academic work. Likewise, students completing the course in naval science may receive commissions in the Naval Reserve.

The Four-Quarter System. The University is operated on the four-quarter system, each quarter having approximately 12 working weeks. (For dates, see University Calendar, page 8.)

GENERAL INFORMATION

ADMISSION TO THE UNIVERSITY

How to Obtain Information

Correspondence regarding admission to any college or school of the University, and requirements for graduation, should be addressed to the Registrar.

Admission Procedure

Before a student may register for University classes, he must place on file with the Registrar complete credentials of all his previous secondary and college education. Credentials accepted toward admission to the University are kept on permanent file. For admission to the autumn quarter, the required credentials should be forwarded after high school graduation and before July 15. Prompt answer cannot be guaranteed to correspondence and credentials received less than thirty days before the opening of the session for which admission is sought.

Admission Requirements

Any prospective student will find that one of the eight following classifications fits his case. He should examine them carefully to determine which one refers to him, and then study the requirements listed thereunder to ascertain how he may be admitted to the University.

1. Beginning freshmen who have been graduated from an accredited* high school or secondary school in the State of Washington or in Alaska must:
 - a. Submit an official application for admission blank. (May be obtained from any high school principal or from the Registrar.)
 - b. Have completed at least 16 acceptable† units** (or 15 units exclusive of activity credit in physical education, debate, etc.) including: 3 units of English, and 6 additional units in academic fields (mathematics, foreign language, social science, natural science). The other seven units may consist of further academic study or may be selected from the subjects ordinarily known as non-academic or vocational (agriculture, art, music, shop, domestic science, commercial courses, etc.). Less than a unit will not be counted in a foreign language.
 - c. Have completed the subject requirements of the college to which he seeks admission. (See chart, page 52.)
 - d. *Probation Rule.* Students entering with a grade point average of 2.0 or above earned during the last three years of high school enter as regular students. All other graduates of high schools satisfying the subject requirements of the University and its respective colleges will be admitted on probation. If, at the end of the first quarter, the work of any entering student is not satisfactory, he shall be subject to the action of the Admissions and Scholarship Board.
2. Beginning freshmen who have been graduated from an unaccredited high school in the State of Washington or in Alaska must:
 - Satisfy 1a, b, c, above, and
 - d. Have a scholastic standing which ranks them in the highest 25 per cent of their graduating class. (Students of lower rank see section 4, below.)

*Accredited high schools in Washington are those accredited by the State Department of Education; in Alaska, by the Northwest Accrediting Association; in other states, by the state university or the state accrediting association.

†The University will not accept any student who has applied toward his diploma from high school grades which are of lower value than the minimum passing (or college certification) grades of that high school. Such grades will be considered failures for purposes of admission to the University.

**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 high school year of thirty-six weeks. In satisfying entrance requirements, with college courses, a minimum of ten quarter credits is counted as the equivalent of the entrance unit.

MINIMUM UNIT¹ REQUIREMENTS OF COLLEGES ACCEPTING FRESHMEN

(In effect autumn quarter of 1940. In 1940 and 1941, however, any student eligible under the senior high school statement in the 1939-1940 catalogue will be granted admission.)

For other recommendations see statement of college concerned.

College	En- glish	Mathematics	For. Lang.	Lab. Sci. ²	Soc. Sci.	Other Academ. Subj. ³	Free Elec- tive
1. Arts and Sciences ⁴	3	2 (Elem. Alg. & Pl. Geom. or 2nd yr. Alg.)	2 of one*	1*	1	0	7
2. Economics & Business	3	2 (Elem. Alg. & Pl. Geom. or 2nd yr. Alg.)	0	0	1 (U. S. Hist. & Civics)	Mini- mum of 3	7
3. Engineering	3	3 (Elem. & Adv. Alg., Pl. & Sol. Geom.)	0	1 (Chem.) ⁵ 1 (Phys.)	0	1	7
4. Forestry	3	2½ (Elem. & Adv. Alg. & Pl. Geom.)	0	**	0	Mini- mum of 3½	7
5. Mines	3	3 (Elem. & Adv. Alg., Pl. & Sol. Geom.)	0	1 (Chem.) ⁵ 1 (Phys.)	0	1	7
6. Pharmacy	3	2 (Elem. Alg. & Pl. Geom. or 2nd yr. Alg.)	0	**	0	Mini- mum of 4	7
7. Comprehen- sive (Admit to any college)	3	3 (Elem. & Adv. Alg., Pl. & Sol. Geometry)	2 of one*	1 (Chem.) ⁵ 1 (Phys.)	1	0	5

¹ A unit equals 2 high school semester credits.

² Approved Laboratory sciences: Biology, Botany, Chemistry, Geology, Physics, Zoology.

³ Typical academic subjects are: English, foreign language, mathematics, science, history, economics. Some non-academic subjects are: commercial courses, manual training, home economics, band.

⁴ Includes also School of Art, Architecture, Fisheries, Home Economics, Journalism, Librarianship, Music, and Nursing Education.

⁵ In Engineering and Mines, a student who is deficient in chemistry will be expected to earn 15 hours of chemistry credit in his freshman year instead of the usual twelve.

*Foreign language and laboratory science deficiencies are the only ones which may be made up in college with college credit.

**Pharmacy recommends one unit of a laboratory science. Forestry recommends one unit of physics.

3. Beginning freshmen who have been graduated from an accredited high school or secondary school not located in the State of Washington or Alaska must:
Satisfy 1a, b, c, above, and
 - d. Have earned a grade point average of 2.0 (straight "C").
 - e. Be eligible for admission to the university of their own state.
4. Beginning freshmen who have not been graduated from any secondary school in the United States must meet requirements without deficiency by passing College Entrance Board Examinations. (Foreign students see Section 8.)
 - a. Complete information concerning the examinations may be obtained by writing to the College Entrance Examination Board, 431 West 117th Street, New York City, N. Y.
5. Advanced undergraduate students who have attended some other college or university must:
 - a. Submit complete official credentials covering both preparatory and college credits, together with a statement of honorable dismissal from the institution last attended. If the applicant has attended college for less than one year he shall be required to submit a credential from his high school in addition to his college transcript. If his high school record is unsatisfactory, he shall not be admitted until at least one year of college work has been completed with satisfactory grades.
 - b. Have earned over his total college record, and also in the last term, a grade average of 2.0 (straight "C").
 - c. Be in no scholastic difficulty at the institution last attended.

Allowance of Advanced Credit:

- (1) Students who have done college work before being admitted to the University (entering under classifications 5, 6, 7, or 8) will be allowed whatever credit is acceptable† to the University. In no case will more than three years' credit (135 quarter credits) be accepted toward a bachelor's degree requiring four years of college study. In other words, the entire last year's work (45 quarter credits) must be done at the University of Washington.
- (2) Transfer of credit from normal schools, junior colleges, and other institutions accredited for less than four years will not be accepted in excess of the accreditation of the individual school concerned. For example, no student will be permitted credit earned in a junior college accredited for two years, after he has earned a total of 90 quarter hours (60 semester hours) of college credit.
- (3) Credits earned in unaccredited schools or by private teachers are accepted only after certification by the departmental examiner, the executive officer of the department, the dean of the college concerned, and the Registrar. The fee for such certification is \$5.00. Students seeking such certification must secure the proper forms in the Registrar's office.
- (4) For work done at institutions whose standing is unknown, advanced credit will be granted only upon examination. (See page 55 for regulations.)
- (5) For information concerning admission to the School of Law or the School of Librarianship, see the bulletins of those schools.

† The University will not accept any student who has applied toward his diploma from high school grades which are of lower value than the minimum passing (or college certification) grades of that high school. Such grades will be considered failures for purposes of admission to the University.

6. *College of Education.* Requirements for admission to the College of Education are: (1) completion of the first year of work of any college of the University, or 45 quarter credits of college work in courses approved by the faculty of the College of Education and the faculty of the college concerned plus the required credits in military or naval science and physical education; (2) a 2.50 grade point average or better.
7. *Graduate Students.* A certificate of graduation with a bachelor's or higher degree from a college or university of recognized rank is required for admission to the Graduate School. Prospective candidates for graduate degrees should see that complete official transcripts of their graduate and undergraduate records are permanently filed in the Registrar's office. As these may not be withdrawn, the student should request of his alma mater a duplicate record for his own use when interviewing his major and minor departments and the Dean of the Graduate School. (See announcement of the Graduate School.)
8. *Foreign Students:*
 - a. Must satisfy the same general requirements as those from American schools.
 - b. Must demonstrate sufficient working knowledge of English and acquaintance with American methods of instruction to enable them to carry regular college work successfully. Students from foreign schools whose standing is not known to be the equivalent of accredited American schools may be required to pass College Entrance Board examinations in representative subjects. A student graduating from a school system which provides for less than twelve years of instruction may be held for additional high school work.
9. *Special Students*—mature individuals (21 years of age or over) who are not eligible for admission as regular students. To be accepted as special students they must:
 - a. Submit all available credentials and records of previous work in secondary schools and colleges, together with the Application for Special Admission secured from the Registrar.
 - b. Secure the consent of the Board of Admissions of the University.
 - c. Be classified as residents of the State of Washington.
- A Special Student may:
 - (1) Take such regular courses as the dean of his college may approve.
 - (2) Become a regular student by fulfilling the admission requirements of the college and department in which he is enrolled.
- A Special Student may not:
 - (1) Earn a degree.
 - (2) Participate in student activities.

Admission as an Auditor

A student eligible for regular or for special standing may enroll as an auditor, after securing the consent of his college dean and the instructor of the course, and paying the auditor's fee of \$12.* An auditor may listen to lectures without doing the required work of the course. He may not participate in class discussion, or in laboratory work, and under no circumstances will he be allowed credit in the course. He may, in a subsequent quarter, take the course as a regular student and receive

*During the summer quarter, tuition is the same as for regular students.

credit by fulfilling all the requirements of the course. No person may attend any course in which he has not been registered as a student or enrolled as an auditor.

Freshman Days

Freshman Days is an introductory period for new students. Attendance is expected of all freshmen. The purpose is to give pleasant first impressions of the University from the faculty and from student representatives. The period is designed to give new students vocational, scholastic, and personal advice, to promote friendships, and to introduce campus activities.

The period opens September 27, 1940, at 9:00 a.m., with the "Welcome Assembly" in Meany Auditorium, at which time the President of the University will deliver his Address of Welcome to the class of 1944.

Advanced Credit by Examination

Advanced Credit by Examination is governed by the following regulations:

1. The work of preparation for the examination must have been done by private study or in class work for which no credit has been granted toward graduation by any institution.
2. A student may not take an advanced credit examination in a course which he has audited, or for which he has been registered in an accredited institution.
3. Only a student enrolled for the current quarter in the University of Washington may apply for advanced credit examination.
4. A student may not apply for advanced credit examination in more hours of credit than he would be permitted to take in regular courses.
5. A student may not earn by advanced credit examination more than one-half the number of credits required for graduation. At least one-half the number of credits required for graduation must be residence credit (not home study, extension classes, or by examination).
6. A student must follow exactly this procedure in applying for and taking an Advanced Credit Examination:
 - a. Obtain an application form at the Information Window, fill it in completely, and secure the approval of the clerk at the Information Window.
 - b. Secure the approving signatures of the examiner, the executive officer of the department, and the dean of the college concerned.
 - c. Return the application to the Information Window for assessment of fee.
 - d. Pay to the Comptroller a fee of \$2.00 per credit.
 - e. Present his receipt for fee to the Information Window and obtain a card authorizing the department to give the examination.
 - f. Present the authorization card to the examiner when he takes his examination.
7. The examiner will fill in the back of the authorization card and mail it to the Registrar's Office, where the grade will be recorded.
8. If the examination for advanced credit is not a comprehensive written one, the dean of the college shall require that a statement of the procedure by which the student was tested be submitted for filing.

The Extension Service

The Extension Service provides means for persons to earn college credit by attending Saturday or evening classes in Seattle and other cities in the State, or by home study. Such credit may be applied toward a degree only when all other requirements for the degree have been met and after the student has satisfactorily completed one year in residence at the University of Washington. (For additional information, see Extension Bulletins.)

Credits earned in Extension, like credits earned by Advanced Credit Examination, are not resident credits. A maximum of ninety non-resident credits may be counted toward the requirements for a bachelor's degree. Of the forty-five credits required in the senior year, not more than ten may be non-resident credits.

The Extension Service offers Saturday classes which meet on the campus and carry resident credit, but may not be used for an advanced degree.

No resident student may take an extension course without the consent of his dean, the Registrar, and the Director of the Extension Service, properly indicated on the forms provided by the Extension Service for the purpose.

Registration

At the beginning of each quarter, the student arranges his schedule of studies with the advice and assistance of his college registration officer or adviser. A regular course consists of 15 or 16 credits of recitation per week.

Autumn Quarter. Students who followed the Spring Advisory Program may take advantage of a preferred registration period designed to assure them of the courses they have selected. This period extends from September 9 to 4:30 p.m. September 13. Students who do not take advantage of the preferred registration period may register from September 16 to 12 m. September 28, along with students who did not secure advice in the spring and with new students. In all cases, fees must be paid in advance. During the preferred period, registration must be in person, total fees must be paid in advance, and any change on the Yearly Program of Studies must be approved by the adviser.

Winter and Spring Quarters. See calendar, page 8, for dates.

Registration is complete when fees are paid, when the election blank has been signed by all required officers, and when approved by Sections.

Mail Registration. Because of its obvious disadvantages, the University does not encourage mail registration. All new students and the greater majority of old students need to consult their advisers in arranging a course of study. It is impossible to secure such advice when registering by mail.

Information regarding mail registration for the Summer Quarter may be obtained from the Summer Quarter Bulletin.

EXPENSES

Notice: The right is reserved to change any or all fees without notice to present or future students. Consult University Calendar for fee payment dates. See page 59 regarding late registration fines.

RESIDENT STUDENTS¹

Examples of Autumn, Winter, and Spring Quarter Fees for Various Types of Registration

Types of Registration	Tuition Fee	Incidental Fee	Law Lib. Fee	A.S.U.W. FEE			TOTAL FEES		
				Aut. Qtr.	Win. Qtr.	Spr. Qtr.	Aut. Qtr.	Win. Qtr.	Spr. Qtr.
Undergraduate.....	\$15	\$12.50		\$5	\$2.50	\$2.50	\$32.50	\$30.00	\$30.00
Graduate.....	15	12.50		*	*	*	27.50	27.50	27.50
Law School.....	15	12.50	\$10	5	2.50	2.50	42.50	40.00	40.00
Auditors.....	12			*	*	*	12.00	12.00	12.00
Ex-service men or women.....		12.50		5	2.50	2.50	17.50	15.00	15.00
†Undergrad. nurses in apprvd. hosp...	5			**	**	**	5.00	5.00	5.00
†Grad. nurses in approved hosp...	10			**	**	**	10.00	10.00	10.00
Part time.....	15	2.50		*	*	*	17.50	17.50	17.50
†Persons registered for thesis only....		12.50		*	*	*	12.50	12.50	12.50

¹ A resident student is one who has been domiciled in this state or the territory of Alaska for a period of one year prior to registration. Children of persons engaged in military, naval, lighthouse, or national park service of the United States within the State of Washington are considered as domiciled in this state. The domicile of a minor is that of his parents.

A prospective student is advised that he is classified as a non-resident when credentials are presented from institutions not located in the State of Washington. If the student believes himself domiciled within the state, he should file a petition with the non-resident office (203 Condon Hall) for change of classification to resident status.

*Optional. If a membership in A.S.U.W. is desired, the A.S.U.W. fee should be added to the total fee as shown for this type of registration.

† Individuals in these classifications must be certified by the School of Nursing Education or the Graduate School.

** Privilege of A.S.U.W. membership not extended to off-campus students.

NOTE: The following courses require the payment of a fee in addition to tuition: *Nursing field work*, \$5.00 per course; *cadet teaching*, \$1.00 per credit hour; *botany field trip*, \$5.00.

Music, riding, golf, and locker fees (see Descriptions of Courses) should be added to the above when applicable.

NON-RESIDENT STUDENTS¹

Examples of Autumn, Winter, and Spring Quarter Fees for Various Types of Registration

Types of Registration	Tuition Fee	Incidental Fee	Law Lib. Fee	A.S.U.W. FEE			TOTAL FEES		
				Aut. Qtr.	Win. Qtr.	Spr. Qtr.	Aut. Qtr.	Win. Qtr.	Spr. Qtr.
Undergraduate.....	\$50	\$12.50		\$5	\$2.50	\$2.50	\$67.50	\$65.00	\$65.00
Graduate.....	50	12.50		*	*	*	62.50	62.50	62.50
Law School.....	50	12.50	\$10	5	2.50	2.50	77.50	75.00	75.00
Auditors.....	12			*	*	*	12.00	12.00	12.00
Ex-service men or women.....	25	12.50		5	2.50	2.50	42.50	40.00	40.00
†Undergrad. nurses in apprvd. hosp...	5			**	**	**	5.00	5.00	5.00
†Grad. nurses in approved hosp....	10			**	**	**	10.00	10.00	10.00
Part time.....	50	2.50		*	*	*	52.50	52.50	52.50
†Persons registered for thesis only....		12.50		*	*	*	12.50	12.50	12.50

¹ A non-resident student is one who has *NOT* been domiciled in this state or the territory of Alaska for a period of one year prior to registration.

The following rules govern the determination of the legal domicile of a student:

- The legal words *domicile* and *residence* are not equivalent terms; domicile requires more than mere residence.
- No one can acquire domicile by residence in the State of Washington when such residence is merely for the purpose of attending the University.
- The domicile of a minor is that of his father; in the event of death of his father, that of his mother; in the event of the death of both parents, that of the last deceased parent. Letters of guardianship are not conclusive but will be recognized when consistent with other facts showing a bona fide domicile.

*Optional. If membership in A.S.U.W. is desired, the A.S.U.W. fee should be added to the total fee as shown for this type of registration.

† Individuals in these classifications must be certified by the School of Nursing Education or the Graduate School.

**Privilege of A.S.U.W. membership not extended to off-campus students.

NOTE: The following courses require the payment of a fee in addition to tuition: *Nursing field work*, \$5.00 per course; *cadet teaching*, \$1.00 per credit hour; *botany field trip*, \$5.00.

Music, riding, golf, and locker fees (see Descriptions of Courses) should be added to the above when applicable.

Exemptions

Members of the teaching staff of the University are exempt from the tuition and incidental fees.

Persons to whom "cadet teaching" exemption certificates have been issued are exempt from the tuition fee only.

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, and who are classified as residents, are exempt from the payment of the tuition fee. Ex-service men and women who are classified as non-residents, are exempt from the payment of one-half of the non-resident tuition fee. (This exemption is not granted during the summer quarter.)

Payment of Fees

All fees are payable in advance of registration, except in the case of pre-registered students who may pay fees any time prior to the date set for cancellation of classes. If cancelled, fees must be paid before classes can be re-established.

Fees of pre-registered students may be paid by mail. The remittance should be mailed to the Comptroller of the University for the *exact* amount due, and show the fee statement number.

Refund of Fees

Autumn, Winter, and Spring Quarters

All fees (except those indicated as not subject to refund) will be refunded in full if complete withdrawal is made during the first three days; one-half of said fees will be refunded if withdrawal is made during the first thirty days. Ten days must elapse between the date application for refund is received by the Comptroller's office and issuance of refund check.

Students withdrawing under discipline forfeit all rights to the return of any portion of the fees.

Applications for refund may be refused unless requested during the quarter in which the fees apply.

Summer Quarter Fees

(Important. Consult Summer Quarter Bulletin for fees and fee payment dates.)

Miscellaneous Charges Applicable Only in Special Cases

The unused portion of breakage tickets will be refunded in full. The other charges noted are not subject to refund, except when payment is made in error.

Late Registration Fine. Unless delay in registering is occasioned by officials of the University, *undergraduate* students and *graduate students in the Law School* registering late will be charged a fine of two dollars (\$2) on the first day of instruction and a further cumulative fee of one dollar (\$1) for each day thereafter up to a total of four dollars (\$4). After the first week of instruction, no student shall be permitted to register except with the consent of his dean and payment of a late registration fee of five dollars (\$5). *Graduate students not in the Law School* may register without penalty during the first week of the quarter.

Change of Registration Fee. A fee of one dollar (\$1) is charged for each change of registration or number of changes which are made simultaneously, except that no charge is made when the change is made on the initiative of the University or for dropping a course.

Breakage Ticket Deposit. In certain laboratory courses a breakage ticket is required. This is used by the student to pay for laboratory supplies and breakage of equipment. The price ranges from three dollars (\$3) to five dollars (\$5). Tickets may be purchased at the comptroller's office.

Special Examination Fee. A fee of one dollar (\$1) will be charged for each examination outside the regular schedule, including the examination for foreign language reading. In the case of examination for *advanced credit*, a fee of two dollars (\$2) per credit hour is charged. (See page 55.)

A fee of two dollars and fifty cents (\$2.50), payable to the Extension Service, is charged for removal of incompletes in absentia.

Practice Rooms. Piano practice room,* one hour a day: \$3.00 each quarter; organ practice room,* one hour a day, \$12.50 each quarter; violin practice room,** one hour a day, no charge.

Locker Fee (Men). A fee of one dollar (\$1) per quarter during the regular academic year, and fifty cents (\$.50) per term during the summer quarter, is charged faculty members and students who are registered for physical education. Locker tickets may be secured at the office of the Associated Students. Faculty members and students who are not registered for physical education may also secure lockers upon payment of the same fee.

Grade Sheet Fee. One grade sheet is furnished each quarter without charge; a fee of twenty-five cents (\$.25) is charged for each additional sheet.

Graduation Fee. Each graduate receiving a baccalaureate or higher degree is required to pay a graduation fee of five dollars (\$5). The fee for a three-year normal or six-year standard diploma is two dollars and fifty cents (\$2.50). The fee for other professional certificates is one dollar (\$1). The three-year normal or six-year standard diploma fee does not include the legal registration fee of one dollar (\$1) which must be paid to the county school superintendent who first registers a teacher's diploma.

Printing and Thesis Binding Fees. Each recipient of a higher degree pays a fee of two dollars (\$2) for the binding of one copy of his thesis. In addition, each recipient of a master's degree contributes five dollars (\$5) and each recipient of a doctorate fifty dollars (\$50) to the publishing fund, which contribution is applied to the cost of printing an annual volume of digests of theses.

Transcript Fee. One transcript of a student's record is furnished without charge. Fifty cents (\$.50) is charged for each additional transcript.

Medical Examination Fee. A five dollar (\$5) fee must be paid by all students who fail to keep their appointment for medical examination.

X-Ray Plates. Applicants for a normal diploma may secure from the University Health Center an X-ray plate to accompany the health certificate upon the payment of a fee of five dollars (\$5).

Bureau of Appointments Fee. Candidates seeking teaching positions pay an initial registration fee of five dollars (\$5). A replacement or maintenance charge of two dollars and fifty cents (\$2.50) is charged each subsequent year for persons wishing to remain on the active list.

Certification of Credits from Unaccredited Schools. Credits based on credentials from unaccredited schools or private teachers are accepted only after certification by the departmental examiner, the executive officer of the department, the dean of the college or school concerned, and the Registrar. The fee for such certification shall be five dollars (\$5).

Military and Naval Uniforms. See pages 144, 146 for details.

*Available only to students registered in the School of Music or to other University students registered for applied music in the School of Music.

**Available only to University students registered for violin lessons in the School of Music.

Living Costs

Board and room expense varies according to the type of accommodation desired. The Students' Cooperative Association provides room and three meals a day for about \$80 per quarter. Membership is open to both men and women upon payment of an initial membership fee of \$15. Boarding houses will average from \$90 to \$100 per quarter for double room and two meals. Except in the summer quarter, cost in the women's residence halls is \$110 per quarter for room and three meals. All rooms are single. The charge for room and board (three meals a day) for the summer quarter is \$95, payable in advance. Living cost, exclusive of dues, in fraternity and sorority houses averages about the same as that of the residence halls. Single rooms in private homes rent from \$10 to \$20 per month. Both the Commons and the Coffee Shop, located on the campus, serve excellent meals at reasonable prices. (See section on Housing, page 73.)

Financial Delinquencies

The Comptroller and Registrar are instructed to attach credits of a student who, in their joint judgment, has been delinquent in meeting his financial obligations to the University.

SCHOLASTIC REGULATIONS

Degrees—Requirements

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

1. *Grade Points Required.* To be graduated from the University of Washington with the bachelor's degree, the candidate must have received twice as many grade points as the number of credits recorded for graduation, in no case less than 180 academic credits, plus the required credits in Military or Naval Science and in Physical Education activities.

Any college may make additional requirements for graduation.

See *Senior scholarship for the last quarter in residence* (12), under "Scholarship Rules," page 66.

For rule regarding repetition of courses in which grades of "D" or "E" were obtained, see "Repeating of Course," page 67.

2. *Senior Year Residence.* The work of the senior year (a minimum of 35 credits earned in three quarters) must be done in residence.

NOTE: Senior standing is attained when 135 credits and the required credits in Military or Naval Science and Physical Education have been earned.

3. *Applications for Degrees.* A student shall, during the first quarter of his senior year, file with the Registrar a written application for his degree. Each application shall be checked by the Graduation Committee 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 for each quarter shall be submitted at the regular meeting of the faculty for the quarter 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.)

NOTE: Applicants who are late in filing their applications cannot be assured of recommendations to the faculty, or of consideration of petitions for modification of requirements. Consideration of late applications is a privilege, which may be withheld at the discretion of the officials concerned.

4. *Degrees—Entrance and Graduation Requirements.* A student shall have the option of being held to the graduation requirements of the catalogue under which he enters, or those of the catalogue under which he expects to graduate. All responsibility for fulfilling the requirements for graduation is thrown upon the student concerned.

5. *Degrees—Two at Same Time.* A baccalaureate degree and a master's degree, or two different bachelor's degrees, may be granted at the same time, but a minimum of fifteen quarters must have been occupied in the work for the two degrees, and the total number of academic credits must have reached a minimum of 225.

6. *A Second Bachelor's Degree.* A second bachelor's degree may be granted, but a minimum of three additional quarters in residence must have been occupied in the work for this second degree, and the total number of additional credits must have reached a minimum of 45, and the number of additional grade points, a minimum of 90. Not more than ten extension credits and no credits gained by advanced credit examinations shall constitute any part of the added program.

7. *Degrees—Financial Obligations.* In determining the fitness of a candidate for a degree, his attitude toward his financial obligations to the University shall be taken into consideration.

8. *Degrees with Honors.* Degrees with honors may be conferred upon recommendation of the Honors Committee.

9. *Degrees—Theses.* If a thesis is required for the degree sought, the candidate must deposit two typewritten copies thereof in the Library at least two weeks before the end of the quarter in which he expects to take the degree. The thesis must meet the approval of the librarian as to form. Printed "Instructions for the Preparation of Theses" should be obtained at the thesis desk in the Library.

Commencement Exercises

1. Formal Commencement exercises shall be held only at the close of the spring quarter.

2. Diplomas shall be issued at the end of each quarter to such candidates as have completed requirements at that time.

Military Science Requirements

(See also page 144.)

1. Two years of military science are required of all male undergraduate students except the following:

- a. Men who are twenty-three years of age or over at the time of original entry into the University.
- b. Men entering as juniors or seniors.
- c. Special students.
- d. Men registered for six credits or less.
- e. Men registered in Naval R.O.T.C.
- f. Men who are not citizens of the United States.
- g. Men who are active members in the Army, Navy, or Marine Corps of the United States, or commissioned officers of the National Guard or Naval Militia, or reserve officers of the military or naval forces of the United States, or members of the Naval or Marine Corps Reserve.

- h. Entering students who present credits for military science received prior to matriculation. (Such students shall be allowed an exemption from military science up to the value of said credits, but shall be held for physical education.)
- i. Men who, because of physical condition, are exempted by the University Health Officer.
- j. Men whose petitions for exemption on other grounds than those listed above have been approved by the Department of Military Science and Tactics.
- 2. Students, other than those listed under a, b, c, d, e, or f above, must register for the proper course and must attend classes until their requests for exemption have been granted.
- 3. The Military Science requirement shall normally be satisfied in the first six quarters of residence.
- 4. Men who are not citizens of the United States and those exempted by petition are required to earn equivalent credits in other courses of the University. This must be done in accordance with the rules governing excess hours.
- 5. All male students who register for advanced military science in their freshman and/or sophomore years may substitute credits in excess of twelve hours for activity credits in physical education.

Naval Science Requirements

(See also page 146.)

- 1. Naval Science is a four-year course, and no students are accepted unless they contemplate completion of the course, are citizens of the United States, have passed a rigorous health examination, and have satisfied the following subject requirements:
 - a. High School: Plane geometry.
 - b. High School or College: Plane trigonometry, college algebra.
 - c. Recommended in High School: Advanced algebra, solid geometry, physics.
- 2. The first two years of naval science normally satisfy the requirement of military science and the requirement of physical education activity courses.

Physical Education Requirements

Men

- 1. Five quarters of physical education are required of all male students except men over 23 years of age at the time of original entrance, men entering with junior or senior standing, special students carrying not more than six credits, or men exempt by the University health officer.
 - (a) This requirement must normally be completed during the first six quarters of University residence.
 - (b) Students who pass the medical examination may elect any activity course with the provision that they participate in one group activity and two individual "carry over" activities during the five quarters of work.
- 2. A two-credit academic course in personal health (Physical Education 15) is required of all male students who have not satisfied this requirement in an accredited university or college.

- (a) This requirement should be completed during the first year of University residence.
- (b) A student may be exempt from the health education course by passing a health knowledge test given the first week of each quarter.

Women

1. Five quarters of physical education are required of all women students except women over 23 years of age at the time of original entrance, women entering with junior or senior standing, special students carrying not more than six credits, or women exempt by the University health officer.

- (a) This requirement must normally be completed during the first six quarters of University residence.
- (b) Students who pass the medical examination may elect activities with the following provisions: one activity from the individual groups (tennis, golf, riding, canoeing, archery, fencing, badminton), one from the rhythmic group (folk, clog or interpretative dancing), one from swimming (unless student passes test). The remaining credits may be selected from the above and from volley ball, basketball, hockey and baseball.

2. A five-credit academic course in health education (P.E. 10) is required of all women students who have not satisfied this requirement in an accredited university or college.

- (a) This requirement should be completed by the end of sophomore year.
- (b) A student may be exempt from the health education course by passing a health knowledge test given the first week of each quarter.

Final Examinations

1. All students in undergraduate courses are required to take final examinations, provided, however, that in a course for which an examination is not an appropriate test of the work covered, the instructor may, with the consent of the dean of the school or college concerned, dispense with the final examination.

2. The regular class exercises shall end at four o'clock on the fourth day before the end of each quarter. The remaining time of the quarter shall be set aside for two-hour examinations in the several courses as scheduled by the Committee on Schedule and Registration. Examinations in Law School courses will be scheduled by the dean of the school.

3. The scheduled examination period shall be the last meeting of the class. If, however, an instructor holds an examination at some time previous to that regularly scheduled, he nevertheless shall meet his class during the scheduled examination time and shall hold it for the full two-hour period.

4. A student absent from a scheduled final examination either by permission of his dean or through sickness or other unavoidable cause shall be given a grade of Incomplete and he may take another examination in the manner provided for removing Incomplete grades. (See rule governing Incompletes, page 67.) In all other cases of absence from examination, a student shall be given the appropriate grade of "E" or "UW."

5. Reports of all examinations of seniors and of all candidates for graduate degrees shall be in the Registrar's office by 12:00 noon of the Saturday preceding Commencement Day.

Honorable Dismissal and Withdrawal Regulations

Honorable Dismissal. To be entitled to honorable dismissal, a student must have satisfied all financial obligations to the University, and must have a satisfactory record of conduct.

Application for honorable dismissal shall be made at the Registrar's office. (See withdrawal regulations, below.)

Withdrawals. 1. Withdrawal from the University is voluntary severance by a student of his connection with the University. It must be approved by the Dean of Men or Dean of Women.

2. Withdrawal from a course is voluntary severance by a student of his connection with the course; it must be approved by the dean of his college.

3. In either case, withdrawal is indicated on the student's record as follows:

a. Official withdrawal within the first six weeks of the quarter—"W."

b. Official withdrawal after the sixth week:

(1) If the student's work in the course is satisfactory—"W."

(2) If the student's work in the course is unsatisfactory—"E."

4. Dropping a course without officially withdrawing, at any time in the quarter, is indicated on the student's record as follows:

a. If the student's work in the course is satisfactory—"UW."

b. If the student's work in the course is unsatisfactory—"E."

5. A grade of "UW" or "W" shall not be considered in computing grade point averages.

Leaves of Absence

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

1. Students absent on account of sickness shall not be readmitted to classes without written excuse from the University Health Officer.

2. Leaves of absence issued by the health officer for illness during the third week from the end of the quarter must be approved by the dean of the college concerned, if grades of Incomplete are desired.

3. Leaves of absence for recognized student activities are issued for women and men students respectively at the discretion of the Dean of Women and the Dean of Men.

System of Grades and Scholarship Rules

1. The following is the system of grades, and their value in grade points:

Grade Pts.		Grade Pts.	
A—Honor.....	4	E—Failed.....	0
B—Good.....	3	I—Incomplete.....	(not counted)
C—Medium.....	2	N—.....	Satisfactory without Grade
D—Poor (low pass).....	1	W—Withdrawn.....	(not counted)

UW..... Unofficial Withdrawal..... (not counted)

Passing grades for advanced degrees are "A" and "B."

2. Three times as many grade points as credits must be earned on the program for an advanced degree, the grade of "S" being used to indicate satisfactory work in a hyphenated course so far as the course has progressed, such work not to be counted toward a major or minor until the final examination.

3. The grade "E" is final and a student receiving a grade of "E" in a course can obtain credit for that course only by re-registering for and repeating it.

4. A grade of "N" is given in hyphenated courses in which the grade is dependent upon the work of a final quarter; it indicates that work has been completed to that point but gives no credit until the entire course is completed. (The use of this symbol is optional.)

5. A grade of "W" can be given only in case of regular withdrawal in good standing. (See withdrawal regulations, page 65.)

6. A student who, at any time in a quarter, is reported to the Registrar as doing work below passing grade in any subject shall be so advised.

7. At the end of any quarter in residence, a student who has not made satisfactory progress toward meeting graduation standards shall be reported to the dean of his college. The dean will take appropriate action, which may be to place him on probation or to require him to withdraw from the college. Satisfactory progress will normally be interpreted as a cumulative grade point average of 1.8 for the freshman year, and a 2.0 average thereafter.

Any student in the *Law School* whose grade point average at the end of an academic year is between 1.5 and 1.8 shall be permitted to continue in the Law School for three additional quarters on probation. A student who, at the end of his first year, is placed on probation shall be required to repeat all courses in which he received a grade lower than "C." A student placed on probation shall be required to attain at the end of his succeeding three quarters a cumulative average of 2.0, and in the event he does not do so, he shall be dropped.

8. *Reinstatement* of a student disqualified under the provisions of paragraph (7) above shall be allowed only by the Admissions and Scholarship Board. In general, a student who has been required to withdraw is not permitted to re-enter the same college until one or more quarters have elapsed during which time he shall have successfully engaged in work or study justifying the belief that he is now prepared to make a satisfactory showing in the University.

9. *Probation:* When a student, because of low scholarship, has been placed on probation, the college concerned, through office of the Dean, shall have complete authority over the student's academic and activity program.

The college concerned is to decide when a student on probation, because of continued low scholarship, shall be dropped from the college, or when, because of an improvement in his work, he shall be removed from probation.

10. In the administration of these rules, required military science and physical education activity courses shall be on the same basis as the academic subjects except as provided for in (11).

11. Colleges and schools may require higher standards of scholarship than those above stated. (See announcement of the college or school concerned, pages 79-159.)

12. *Senior Scholarship rule for the last quarter in residence.* Any senior who has completed the required number of credits for graduation but who has been dropped for low scholarship at the end of his last quarter of residence or who is on probation shall not receive his degree until restored to good standing. In general, he will not receive his degree until one or more quarters have elapsed.

Incompletes

1. An Incomplete is given only in case the student has been in attendance and has done satisfactory work to a time within two weeks of the close of the quarter. Except in the case of one-term summer courses, the two weeks' limit may be extended to three weeks upon the approval of the dean of the college.

2. A student who has received an Incomplete in a course must, to obtain credit, convert it into a passing grade within his next four quarters of residence; otherwise, he must re-register for the course. If the course is not offered in any one of the four quarters referred to, the Incomplete may be converted when the course is next offered, provided that if it is not again offered prior to the time at which the student expects to graduate, he shall have the right to convert it by taking a special examination.

Change of Grade

Except in cases of error, no instructor may change a grade which he has turned in to the Registrar.

Repeating of Course

Students who have received grades of "D" or "E" may repeat the courses in which these grades were obtained, or may with the approval of the dean of their college substitute other courses in their place, and in such cases the grade received the second time, either in the repeated or the substituted course, shall be the one counted in computing the average required for graduation. The provision for substitute courses does not apply to fixed curricula. For the purpose of determining University honors, only the grade received the first time shall be counted.

HONOR AWARDS, FELLOWSHIPS, SCHOLARSHIPS, PRIZES AND AWARDS

(Subject to sufficiency and availability of funds.)

Honor Awards

Presentation of honor awards is made as follows:

1. The President's Medal is presented at Commencement to the member of the graduating class who has the highest scholastic standing for his entire course.
2. The following are presented by the President in the name of the Faculty at the annual President's Assembly in the autumn quarter:
 - a. The Junior Medal, awarded to the Senior having the highest scholastic standing for the first three years of his course.
 - b. The Sophomore Medal, awarded to the Junior having the highest scholastic standing for the first two years of his course.
 - c. Certificates of High Scholarship, awarded to Seniors, Juniors, and Sophomores for excellence in scholarship in their Junior, Sophomore, and Freshman years respectively.

Fellowships and Scholarships for Graduates

Sarah Loretta Denny Fellowships. Three fellowships are open to graduate students in any department of the University. Not to be awarded for 1940-1941.

Arthur A. Denny Fellowships. Six fellowships 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 residents of the state of Washington who need financial assistance. Not to be awarded for 1940-1941.

University Honorary Fellowships. Three honorary fellowships have been established by the University. These, like the Sarah 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 Sarah 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. The College of Mines offers four fellowships for research in coal and other non-metallic mineral substances, in cooperation with the United States Bureau of Mines. The fellowships are open to graduates of universities and technical colleges who are properly qualified to undertake research investigations. The value of each fellowship is about \$720 to the holder, for the 12 months beginning July 1. Fellowship holders register as graduate students and become candidates for the degree of master of science in the proper subject in the College of Mines, unless an equivalent degree has previously been earned.

Each applicant should send a copy of his collegiate record from the Registrar of the college where he has graduated, or will graduate in June. He should also send a photograph and a detailed statement of his professional experience, if any, and give the names and addresses of at least three persons who are familiar with his character, training, and ability. Applications should be submitted by April 1, and should be addressed to the Dean, College of Mines, University of Washington, Seattle, Washington.

Appointees to the fellowship report for duty on July 1, and are required to be on duty for a full year, except that in case of reappointment for a second year, the fellowship holder is given a vacation from June 15 to July 1. For the year 1940-1941, problems of the following nature will be selected for investigation: 1. *Coal.* Problems in the treatment and utilization of coal and coke. 2. *Non-metallics.* Problems in kaolin, olivine, talc, soapstone, silica sand, diatomite, and other industrial minerals.

The Bon Marche Industrial Fellowship. The Bon Marche of Seattle offers an annual fellowship of \$500 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 11 months to the testing of textiles for the Bon Marche.

The Agnes Healy Anderson Research Fellowships in Forestry. The income from the Agnes Healy Anderson Research Fellowship Fund is available for graduate research fellowships to be awarded on a competitive basis. The terms of the fund allow some leeway in the number of fellowships and the amount of each.

University Fellowships. The various departments of the University grant fellowships each academic year which provide \$180 per quarter and exemption from tuition and incidental fees. 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.

University Graduate Scholarships. Each year the University grants a number of scholarships to graduate students engaged in activities closely related to teaching, such as reading, laboratory assistance, etc., in the various colleges. Remuneration is in proportion to services performed with a maximum compensation of \$45.00 per quarter in addition to exemption from tuition and incidental fees.

The E. C. Neufelder Scholarship. The E. C. Neufelder scholarship, established by the will of Lily C. Neufelder, is open to any graduate student who has already completed at least one quarter of graduate work in residence or who has finished his undergraduate work at the University of Washington. Award is made on the basis of excellent scholarship and financial need.

The Seattle Branch of the American Association of University Women Scholarship. This scholarship of \$100 is awarded annually to a deserving woman student enrolled in some department of the Graduate School, preferably in her second year of graduate enrollment. Award is made on the basis of scholastic ability, character, financial need, and promise.

The Alpha Chi Omega Alumnae Scholarship. Iota Iota Alumnae Chapter of Alpha Chi Omega offers annually, in the spring quarter of each year, a scholarship of \$100 to a woman student who has satisfied the University of Washington's requirements for graduation and is returning the following year for further work preparatory to taking a professional or Master's degree. She must be partially or wholly self-supporting, must have a fine character, personality and ability that shows promise.

Scholarships for Undergraduates

(Subject to sufficiency and availability of funds.)

The Iota Sigma Pi Scholarship. The Oxygen Chapter of Iota Sigma Pi has established a scholarship for \$100 a year to be given to a woman majoring in chemistry, with sophomore standing or above, who has a meritorious academic record and other qualifications.

The Phi Beta Kappa Scholarship. This scholarship of \$100 is awarded annually in the spring quarter to a student returning to the University the following year as a senior. Award is made on the basis of high scholarship, character and promise, and payment is made in two installments of \$50 each at the beginning of the autumn and winter quarters.

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

The Kappa Alpha Theta Alumnae Scholarship. The Seattle Alumnae of Kappa Alpha Theta offer an annual scholarship of \$100 to the woman student who has to complete one more year in college to receive the degree of Bachelor of Science in Home Economics. She must be a student of high scholastic attainments, must be wholly or partially self-supporting, and must have a character and personality which show unusual promise.

The Delta Delta Delta Alumnae Scholarship. The Alumnae of Delta Delta Delta offer an annual scholarship of \$50 to a sophomore, junior or senior woman of character and personality, on the basis of high scholarship, participation in activities and financial need.

The University of Washington Alumnae Association Scholarship. The Alumnae Association of the University of Washington offers an annual scholarship of \$100 to a woman student entering her senior year. She must be a student of promising character and personality, must have an outstanding record for high scholarship and participation in activities, and must be partially or wholly self-supporting.

The City Panhellenic Scholarship. The City Panhellenic Association offers an annual scholarship of \$100 to a fraternity woman registered in her senior or fifth year, who has been a student in the University of Washington since her freshman year and has merited the award on the basis of her character, scholastic attainment, activity in campus affairs, and financial need.

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.

Beecher Kiefer Memorial Scholarship. This scholarship is awarded annually to the most talented man student of violin. This award is subject to competition before a committee from the School of Music. Not offered in 1940-1941.

Mu Phi Epsilon Scholarship. Mu Phi Epsilon, national honorary musical sorority, offers to a woman student a scholarship of one lesson a week for a school year, in either voice, violin, cello or organ. Tryouts spring quarter.

Phi Mu Alpha Scholarship. Phi Mu Alpha, national music fraternity, awards to a man student a scholarship of one lesson a week in vocal or instrumental study for a period of one school year.

The William Mackay Scholarship in Mining. The income from a gift by the late William Mackay of Roslyn, Washington, is available for a scholarship of \$250 to be awarded to a junior or senior student in the College of Mines on the basis of character, scholarship, and need of assistance. Applications to the dean of the College of Mines are due in March.

The McKesson-Robbins Drug Company Scholarship. The McKesson-Robbins Drug Company of Portland, Seattle and Spokane has established a \$50 cash scholarship for a worthy senior of the College of Pharmacy. The award is based on the scholastic record of the student during his freshman, sophomore and junior years.

The Women's Auxiliary of the Washington State Pharmaceutical Association Scholarship. This organization gives a cash award of \$50 to a worthy student selected by the faculty of the College of Pharmacy. Selection is made on the basis of good scholarship and of financial need.

The Pio de Cano Scholarships. Four scholarships for \$25 each are open to a Filipino freshman, sophomore, junior, and senior student for excellence in scholarship combined with financial need.

The Advertising Club Scholarship. An annual scholarship of \$25 awarded to a student majoring in advertising either in journalism, economics and business or the College of Arts and Sciences, on the basis of high scholastic ability and financial need.

The Bob Doble Memorial Scholarship. A fund established by Mrs. James Marshall in memory of her son: \$150 awarded each year to an outstanding third-year journalism student.

The Helen Nielson Rhodes Memorial Scholarship. The Lambda Rho Alumnae offer an annual scholarship of \$50 to a junior or senior student in the School of Art who has shown unusual ability in creative work. Applications should be made to the School of Art in March.

Sigma Epsilon Sigma Scholarship. The Sigma Epsilon Sigma Scholarship of \$25 is awarded annually to a woman student who has completed one year of college work. She must be high in campus citizenship as well as scholarship, and must be partially self-supporting.

The Auxiliary to the Japan Society of Seattle Scholarship. An annual scholarship of \$75 is awarded to a student majoring in the Department of Oriental Studies or interested in specific Oriental problems. The recipient must be an American citizen of high scholastic achievement, preferably of junior or senior standing.

University Scholarships. A limited number of scholarships are available to upperclassmen enrolled at the University and information concerning them may be obtained from the deans of the various colleges.

Scholarships Open to Entering Freshmen

(Subject to sufficiency and availability of funds.)

The A.S.U.W. Annual Scholarship. A \$100 tuition-scholarship to be awarded annually by the Associated Students of the University of Washington to the graduate from any state high school outside the city of Seattle, voted the state's outstanding candidate for admission to the University of Washington. Candidates shall be judged on the basis of financial need, conduct while in high school, use of

leisure time for worthwhile high school activities, scholarship, and general personality. Applications should be submitted by April 14 to the Associated Students of the University of Washington.

The Paul Karshner Memorial Scholarships. Scholarships of \$100 each, given by W. M. Karshner, M. D., and Ella H. Karshner, awarded to a boy and to a girl who are graduates of the Puyallup high school.

Prizes and Awards

Philo Sherman Bennett Prize. The Philo Sherman Bennett prize of approximately \$25 is awarded every alternate year "for the best essay discussing the principles of free government." To be awarded in 1940-1941.

The Carkeek Prize. The Vivian M. Carkeek cash prize of \$50 is awarded annually "for the best student contribution to *The Washington Law Review* on a point of Washington law, or any point of peculiar interest to Washington attorneys."

The Western Printing Company Prize. An award made annually to that student rendering the most valuable service to *The Washington Law Review*.

The Frank W. Baker Award. This annual award of \$250 is to be made "to the student in the Law School who shall prepare and submit to the Dean of the Law School the best thesis on a topic which will foster and promote an understanding of the duty of an American citizen to uphold and preserve the Constitution of the United States and the supremacy of the Supreme Court, and to counteract the tendency of students to succumb to the specious arguments of advocates of subversive doctrines."

Nathan Burkan Memorial Competition. The American Society of Composers, Authors and Publishers awards annually in each of the approved law schools of the country a prize of \$100 for the best paper by a graduating student on a subject within the field of Copyright Law.

The Ruth Nettleton Award. In memory of Ruth Nettleton, who died while a senior at the University of Washington, a few of her friends have established the Ruth Nettleton Memorial Fund, the interest from which is offered each year as a prize in sculpturing.

The Charles Lathrop Pack Prize. The late Charles Lathrop Pack, for many years president of the American Tree Association, has provided an annual prize of \$25 for the best essay by a student majoring in forestry. The subject shall be chosen with reference to interesting the general public in forestry matters.

The Washington State D. A. R. Ada McCleary Prize. The Washington State Society, D. A. R., offers an annual prize of \$25 to a girl majoring in Home Economics at the end of her freshman year and intending to complete the course. The award is made on the basis of scholarship, financial need, personality and patriotic ideals.

The Frank Billings Kellogg Prizes. Earnings from the "International Goodwill Fund" will provide two cash prizes for students in Political Science, History, and kindred fields, who are interested in pacific means for settling disputes between nations. Awards are made for essays promoting friendliness and cooperation.

The Lehn and Fink Medal. The Lehn and Fink Drug Company of New York City awards each year a gold medal to a graduating senior in pharmacy, selected for this honor by the pharmacy faculty. The award is based on scholastic standing.

The Rho Chi Society Prize. Rho Chapter of Rho Chi Society, pharmacy honorary, grants a prize each year to the freshman completing the year's work with the highest grade point average of his class.

The Alpha Kappa Psi Plaque and Medallion Award. Rho Chapter of Alpha Kappa Psi, a professional fraternity in commerce, awards annually the Alpha Kappa Psi Scholarship Medallion to the male student pursuing a degree in the College of Economics and Business, who has attained the highest scholastic average for three years of collegiate work in this University.

The Alpha Rho Chi Medal. The Alpha Rho Chi Medal is awarded annually to that graduating senior of each school of architecture who has shown ability for leadership, performed willing service for his school, and given promise of real professional merit through his attitude and personality.

The A.S.U.W. Award. The Associated Students of the University of Washington offer a silver cup to those members of the Varsity Discussion squads who have been members for three years and have participated in public discussions during their senior year.

The American Institute of Architects' Awards. A medal for general excellence in design is annually awarded by the American Institute of Architects to a graduating senior. Two other outstanding graduating students receive one copy each of *Mont Saint Michel* and *Chartres*.

The Chi Omega Prize in Sociology. An annual award of \$25 is made by the Chi Omega sorority to a woman who has majored in sociology, graduating with high scholarship and recommended for achievement.

Circolo Italiano Universitario Award. A medal is awarded each year by the Circolo Italiano Universitario (Italian Club of the University of Washington), to the student making the best record in *Italian 2*, second-quarter Elementary Italian.

Delta Phi Alpha Prize. The national chapter of Delta Phi Alpha, honorary German fraternity, offers annually a book prize to each of its chapters. The Iota Chapter of the University of Washington awards this prize to that senior who has maintained the highest average in German courses throughout the four-year program.

French Government Silver Medal for Excellence in French. Awarded each year by the French government to the senior with the highest standing in French, on the recommendation of the Department.

Beta Gamma Sigma Alumnae Prize. The Alumnae of Gamma Epsilon Pi (now merged with Beta Gamma Sigma) give a prize of \$15 to the girl in the College of Economics and Business having the highest scholastic average in her first three quarters in the University.

Sigma Delta Chi Scholarship Award. Plaques or certificates are awarded to students of either sex. The award is made on the basis of one plaque or certificate for each ten of the graduating students in journalism.

Phi Sigma Award. A medal awarded for excellence in biological work to a student not necessarily a member of Phi Sigma.

Fellowships and Scholarships Administered by Other Organizations

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 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.

The Fairchild Fellowship. The Samuel W. Fairchild Company of New York City, offers annually a graduate fellowship amounting to five hundred dollars in cash. Competition for this fellowship is open to seniors of those schools of pharmacy holding membership in the American Association of Colleges of Pharmacy. In June of each year an examination is held here and is open to two members, selected by the faculty, of the senior class of this college.

The Rhodes Scholarship. A scholarship of £400 a year is granted by Oxford University to a student between 18 and 25 years of age who has at least junior standing. To be discontinued for duration of the European War.

Woman's Auxiliary of the American Institute of Mining and Metallurgical Engineers Scholarships. Annual scholarships awarded on the basis of character, scholastic standing, and the need of assistance of the student. Applications for appointment for the following academic year are made in November through the College of Mines, to the North Pacific Section of the Woman's Auxiliary.

Honor Societies

Phi Beta Kappa

Tau Beta Pi

Sigma Xi

Order of the Coif

Various societies in departmental and professional fields

STUDENT WELFARE

Housing

The University, through its personnel offices and health service, inspects and approves a wide variety of living accommodations for men and women students. Lists of such places are available at the dean of men's and dean of women's offices. With the exception of four residence halls for women, providing rooms for three hundred students, all accommodations are off the campus, and consist of boarding and rooming houses, private homes, apartments and housekeeping rooms, the student cooperatives, independent organized houses, and fraternity and sorority houses. Residence in the last mentioned awaits invitation to membership, but it is understood that in all other cases (except apartment houses) residence shall be arranged for on the basis of the school quarter, either by written or verbal agreement with the householder or board of trustees of the house. See section on Living Costs, page 61.)

Women students under twenty-one years of age not living in their own homes, with immediate relatives, in nurses' training school homes, or in homes where they are earning their board and room, or both, are required to live in some type of organized group house, i.e., University residence halls, sorority houses, or independent organized houses approved by the University. If circumstances warrant, exceptions shall be made by the dean of women's office upon request of the parents.

Failure to comply with this regulation will make the student subject to discipline to the extent of cancellation of registration.

Employment

Various agencies of the University do everything possible to assist worthy students in finding employment. All part-time placement for men and women in off-campus jobs, as well as board and room jobs for men, is handled through the University Employment Association, located in Clark Hall. The Y.M.C.A. in Eagleson Hall also assists men to obtain work. Women students desiring to earn room and board with some compensation should apply at the dean of women's office in Clark Hall. In all cases a personal interview is required.

It is important that students who find it necessary to help finance their college education through some type of employment should plan to limit their schedule of college work in proportion to the number of hours of employment.

The National Youth Administration Project affords an opportunity to a limited number of students for work in the various departments of the University. The compensation is \$15.00 a month for approximately two hours' work per day. Information as to eligibility rules, etc., may be received from Dean Herbert T. Condon, who has been designated as Director of the project at the University of Washington.

Loans

There are several loan funds available to both men and women students. Experience has demonstrated the wisdom of limiting such assistance to students who have junior standing or more, and who have demonstrated their ability as college students and their sincerity of purpose. Due to the heavy call upon loans, it has seemed necessary to limit the amount of individual loans to the cost of resident tuition and supplies. Funds available for loans usually are exhausted prior to the opening of each quarter. Therefore, students desiring loans should file application at least ten days prior to the day instruction begins. A few small emergency funds are available. These are very limited in amount and time. For information consult the dean of men or dean of women.

Leona M. Hickman Loan Fund. Loans are limited to qualified young men who are actual residents of King County, Washington, who desire to provide themselves with advanced educational training. Except in special cases, loans cannot exceed \$250 to any one applicant in any school year and not in excess of \$1,000 to any one student. Interest rate is 5 per cent per annum.

Address applications to Peoples' National Bank of Washington, Trustee, Seattle, Washington.

University Health Center

The University maintains a health service which functions primarily in guarding against infectious diseases and incipient ill health due to remedial causes. The work is carried on in two main divisions: viz., a dispensary, and infirmary.

The service is housed exclusively in a modern building, with offices for the doctors and nurses, seventy-five beds with essential accessories, and diet kitchen. A corps of six physicians, nine nurses, and two laboratory technicians, all on full time, constitute the permanent staff. This is augmented temporarily whenever an increased number of patients makes added assistance necessary. Seriously ill students are not retained in the infirmary. They are sent to a general hospital of their own choice and at their own expense.

The dispensary is available to all students during the span of class hours, for emergencies and infectious ailments only. The infirmary is available for the reception of bed patients at all hours.

From the results of the entrance physical examinations the students are classified. Those found to be below standard are re-examined at a later date for evidences of incipient tuberculosis, heart disease or other chronic disabilities. Ordinary medicines are dispensed in small quantities without cost to the student. Close cooperation is maintained with the family physician when one is retained; in no way is the idea of supplanting the family physician contemplated. Outside calls are not made by University physicians.

The infirmary cares for all cases of illness (including physicians' attendance, nursing and medicines) for a period of one week each quarter free of charge. For a period longer than one week a charge of \$2 per day is made. Students confined in the infirmary are permitted to ask for the services of any licensed regular medical practitioner in good standing, at their own expense.

Students are not permitted to remain where proper care cannot be taken of them, or where they may prove to be a source of danger to other students.

After absence from classes due to illness, a student is not re-admitted without a clearance certificate obtained from the Health Service. This certificate is issued

only to those students who have been under observation of the Service. Those students who receive care at home or afield from the campus, must, to secure a certificate, communicate with the Health Service on the first day of their absence. In this manner a record of all student sickness is kept, which is used as a guide for health supervision. (See Leave of Absence, page 65.)

Personal and Vocational Guidance

The offices of the dean of men and dean of women are concerned with the general welfare of the students of the University and welcome correspondence and conferences with both parents and students. Students are urged to avail themselves of the opportunity for consultation in regard to social, personal, and vocational problems. These offices, which work closely with the advisory system of the colleges and schools of the University, are in a position not only to counsel students personally, but to direct them to faculty advisers and other sources of information and assistance. Obstacles to successful work in colleges may often be removed through the friendly advice these officials stand ready to give.

ASSOCIATIONS AND CLUBS

Alumni Association. All graduates of the University of Washington and all persons who have completed satisfactorily one year of collegiate work are eligible for membership in the association. Members receive: One year's subscription to the *Washington Alumnus*, library, football, voting privileges, etc. The membership fee is three dollars (\$3.00) per year, being good for twelve months from date of payment. Dual memberships for man and wife, or for two persons living at the same address, are four dollars and fifty cents (\$4.50) per year, including one copy of the *Washington Alumnus* and all other advantages of a single membership. A Board of Trustees, consisting of twenty-three members, is the governing body of the Association.

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 undergraduate students. The fees are as follows: autumn quarter five dollars (\$5), winter quarter two dollars and fifty cents (\$2.50), spring quarter two dollars and fifty cents (\$2.50), summer quarter one dollar (\$1).

This fee gives each student a membership in the corporation, including a 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 the office of the Director of Student Activities. The administration of the affairs of the Associated Students is carried on through an annually elected Board of Student Finance and the Student Council.

The Board of Student Finance is composed of the seven following members: The Director of Student Activities of the University of Washington, the President of the Associated Students of the University of Washington, the President of the Associated Women Students, a representative appointed by the Director of Student Activities and three representatives appointed by the President of the University of Washington.

The Student Council is composed of eleven members, as follows: The President, the Vice President, and Secretary of the Associated Students of the University; the President of the Associated Women Students; a graduate representative; the President of the Senior Class; the senior representative; the President of the junior class; the junior representative; the President of the sophomore class, and the President of the Managerial Council.

STUDENT CONDUCT AND ACTIVITIES

Cheating

Whenever cheating is detected, the following method of procedure shall be followed:

1. The instructor shall take whatever action seems to be commensurate with the gravity of the offense and the character of the student.
2. The instructor shall report to the office of the Dean of Men or the Dean of Women the name of the student involved, the nature of the offense, and the action taken.

General Eligibility Rules

In order to participate in any student activity, a student shall comply with the rules and regulations of the committee governing the activity. For students who wish to participate in athletics, this shall be the University Athletic Committee; for students who wish to participate in student affairs, this shall be the committee on Student Affairs and Student Welfare. These committees should work in close cooperation with the dean of the college concerned.

Library Rules

1. A student may borrow books for a period of two weeks, or, with special permission, for four weeks. Renewals may be made for two weeks if the books are not in demand.
2. Books may be recalled for reserve or in an emergency.
3. Books are due on the last date stamped on the date slip inside the back of the cover. A fine of 25 cents per volume will be assessed for books not returned on the date due, increasing to 50 cents per volume on the fourth day and \$1.00 on the ninth day for which they are overdue. (See 8.)
4. Reserve books are to be used in the library only; with a few exceptions they are issued for a period of two hours.
5. Books from the Reserve Room, excepting those belonging to the Reference Collection, may be borrowed for home use when the library is to be closed. They are due in the Reserve Room at the hour the library next opens.
6. Failure to return a volume to the Reserve Desk within ten minutes after it is due, subjects the borrower to the fine of 25 cents for any part of the first hour and five cents for each additional hour or fraction thereof. All fines are levied when the books are returned and are payable immediately to the Library cashier located at the circulation desk in the main Library. (See 8.)
7. Permission to borrow reference material is granted at the discretion of the reference librarian. Borrowers who fail to return such material at the time designated are fined the same as for reserve books. Anyone who takes reference material *without permission*, is subject to a fine of 50 cents for the first day and 25 cents for each additional day until the material is returned. (See 8.)
8. Registration, transcripts, and diplomas will be withheld until financial delinquencies are paid.

Meetings and Speakers at Student Clubs

1. The buildings and campus of the University are primarily devoted to education; they are also used for cultural and recreational purposes incidental to the work of the University.
2. The University buildings and grounds are not available for commercial or other outside uses, except that its assembly halls may, by arrangement with the President's office, be used for graduation exercises and other special assemblages of the public schools.
3. Meetings of student organizations upon the campus are permitted for purposes educational, cultural and recreational in their nature, connected with the work of the colleges or departments of the University.
4. All student groups desiring to make use of the facilities of the campus for meeting places, shall apply at the beginning of each year to Professor Raymond Farwell, chairman of the Executive Council of Student Campus Organizations; if organized during the school year, shall apply to the above Committee before holding any meetings on the campus.
5. A student organization or group which is of a strictly professional character, or which is sponsored by an appropriate University department, may invite an outside speaker to address a meeting in a University building or on the campus but shall notify the President's office before the meeting is held. (An "outside speaker" shall be construed to mean any speaker not a registered student or a member of the staff.) Any other student organization or group desiring to invite an outside speaker to address a meeting in a University building or on the campus must have such invitation approved in advance by the Executive Council of the Student Campus Organizations Committee and by the President of the University. The terms "student organization or group" in this rule shall not be construed to refer to classes.
6. Arrangements and programs for meetings held under the sponsorship of a college or department of the University and open to the public shall be first approved by the President of the University. Departments or groups of departments desiring to have speakers for their students only, shall apply to the President's office. Special lectures should be held in the afternoon in order not to disrupt regular morning classes.
7. Permission for the use of any space for outside organizations must be obtained by applying to the Secretary of the Board of Regents, Dean H. T. Condon, and to the President of the University. This permission is granted only for educational purposes.
8. Only all-University functions for which classes are generally dismissed may be designated as assemblies.
9. Necessary arrangements for rooms and space to be used between the hours of 8 a.m. and 5 p.m. will be made by applying to the Registrar's office. Rooms and space to be used between the hours of 5 p.m. and 8 a.m. will be secured by applying to the Buildings and Grounds' office.
10. All financial arrangements for the use of space shall be made through the office of the Comptroller of the University.

Pledging to Fraternities or Sororities

1. No student having less than junior standing shall be initiated into a fraternity or sorority until he or she shall have earned successfully 18 resident credits in two quarters or 14 in one quarter, at this University, in addition to the required credits in physical education activity, and military or naval science.
2. Candidates for initiation into fraternities or sororities shall secure certification of eligibility from the office of the Dean of Men or the Dean of Women.

Student Activities

Student activities are governed by the Committee on Student Affairs and Student Welfare in accordance with the rules of the faculty. Students are responsible for acting in accordance with the specific rules of the Committee, information regarding which may be secured from the Dean of Men or the Dean of Women.

Student Publications

1. Only those publications so designated by the Dean of Men and the Director of Student Activities may make use of the good will of the University in soliciting advertising.
2. Permission to issue student publications is obtained from the President's office.
3. The editors of all 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.
4. No editions of *The Daily*, by special sets of editors shall be allowed, except by express permission of the publications committee of the Board of Control.

Tutoring

1. Students seeking the services of a tutor may obtain assistance in the Student Employment Office, in the offices of the Dean of Men and the Dean of Women, or in the office of the proper major department.
2. No person shall tutor for compensation in a course with which he has any connection as part of the teaching staff.
3. The tutor shall secure the approval of the head of the department for all tutoring for compensation secured on a form provided for the purpose, giving the names of the student or students and the tutor. In cases where the tutor is in the rank of instructor or higher, the approval of the dean must also be secured.
4. Forms may be obtained in the Registrar's office. When proper signatures have been obtained by the tutor, forms should be filed in the office of the dean of the college concerned.

ANNOUNCEMENT OF CURRICULA

COLLEGE OF ARTS AND SCIENCES

Edward H. Lauer, Dean, 121 Education Hall

The College of Arts and Sciences is a regular four-year college offering a wide range of courses leading generally to the degrees of bachelor of arts or bachelor of science.

The College aims to give pre-professional work to those going into professional fields such as law, medicine, librarianship, dentistry, teaching and so forth. It offers further, for those not specializing in any particular profession, an opportunity for a general educational course with a major emphasis on some art or science. The College is also developing a program of General Studies aiming to provide a broad cultural college course without specialization in any single subject.

Fellowships, Scholarships, Prizes. See page 67.

Student Counselling

The college recognizes that many students, particularly entering freshmen, need assistance in working out educational programs which will contribute maximally to their after-college plans. Each department and school within the college, therefore, provides opportunity for its students to consult faculty advisers relative to this and to other problems. The Office of the Dean maintains a staff of advisers to counsel with students who have not yet affiliated themselves with a major department. (See Pre-Major, page 81.)

Entrance Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 51-61. In addition to the all-University entrance requirements, the College of Arts and Sciences requires two units of one foreign language, one unit of laboratory science, and one unit of a social science.

General Requirements

Composition 1-2 (10 credits) or the equivalent, after passing the Preliminary Freshman English Test, are required of all students unless exempted in whole or in part. For Composition 2, journalism students substitute Journalism 51, *News Writing*. For Composition 1 and 2 fine arts students may substitute Composition 4, 5, 6, nine credits.

Composition 1-2 may not be counted in fulfillment of the group requirements listed below under curricula. These are general courses required by the College, and may not be counted toward a major or a minor. Admission to these courses is gained by a satisfactory grade in the English placement test, supplemented by extemporaneous and prepared papers and conferences where deemed necessary. As this test is graded for entrance and for placement, several assignments are possible in order to enroll the student in the courses most profitable to him. The usual groupings are (1) exemption from Composition 1 and 2, usually granted only to mature makes possible the requirement of five credits instead of ten; (3) assignment to persons with writing experience; (2) Composition 15 for students whose proficiency Composition 1, where, if a student's work is of sufficiently high quality, he may be exempted from Composition 2 on the recommendation of his instructor and the officer in charge of Composition 1 and 2; (4) Composition 1 and 2; (5) Composition A, a non-credit course required for entrance into Composition 1. In the College of Forestry, the grade in Composition 1 is contingent upon good work in English in subsequent forestry courses.

CURRICULA

The departments and schools in the College of Arts and Sciences are grouped according to subject material into the three broad fields of knowledge indicated below. Wherever the terms Group I, Group II, Group III are used, reference is made to these divisions.

GROUP I	GROUP II	GROUP III
<i>Humanities</i>	<i>Social Sciences</i>	<i>Sciences</i>
Architecture	Anthropology	Anatomy
Art	Economics	Astronomy
Classical Languages	Geography	Bacteriology
English	History	Botany
General Literature	Home Economics	Chemistry
Germanic Languages	Nursing Education	Fisheries
Journalism	Philosophy	Geology
Liberal Arts	Physical Education	Mathematics
Librarianship	Political Science	Physics
Music	Psychology	Zoology & Physiology
Oriental Studies	Sociology	Oceanography 1
Romanic Languages		Pharmacy 15
Scandinavian Languages		

Courses from other colleges or schools, or from other divisions of the University, may be placed under these groups in evaluating the work of transfer students. The courses of any given department may be allocated to one group only.

The curricula available in the College are classified according to the amount of electives permitted as: (1) prescribed departmental curricula, (2) elective departmental curricula, (3) non-departmental curricula. Students will elect one of these three curricula.

1. Prescribed Departmental Curricula

Some departments have outlined courses of study which definitely prescribe the work the student must complete for the bachelor's degree. Students who desire a major of this type should consult a faculty adviser in the department of their choice at the earliest possible date.

2. Elective Departmental Curricula

Elective departmental majors are more flexible than prescribed majors. Students choosing a major of this type must earn thirty-six or more credits in the subject represented by the department concerned. They are expected to complete, during the first two years, a minimum of thirty credits in one group, twenty credits in a second group and ten credits in the remaining group. Departments may add to these requirements if they so desire. At least sixty credits of the total 180 required for graduation must be in upper division courses.

Students will plan their work under the direction of faculty advisers. The degree conferred will be Bachelor of Arts or Bachelor of Science, depending upon the major selected.

3. Non-Departmental Curricula

A. General Studies. The division of General Studies offers courses of study even more flexible than elective departmental majors. Here an effort is made to meet the needs of those students whose interests are not professional or are too broad for the limitations of a single department. When necessary the resources of several departments or of other colleges are drawn upon in building curricula to coincide with the interests of the student concerned. (See General Studies, page 96 for detailed requirements.)

Students majoring in General Studies are assigned to faculty advisers for guidance in planning programs. The degree will be Bachelor of Arts or Bachelor of Science depending upon the relative preponderance of scientific or non-scientific subjects in the curriculum.

B. Pre-Major. Students usually decide upon a major before entering the University. However, some make this decision one or more quarters after entering. Students in this latter group may come in as pre-majors.

Pre-major students must meet general University and College requirements in the same manner as do students in any of the regular departments or schools—Composition 1-2, Physical Education, Military Science, and Group requirements.

Pre-majors are under direct jurisdiction of the Deans' Office. They are assigned to faculty advisers who assist them in program planning, developing interests, and in deciding upon majors in keeping with these interests. Normally, students remain as pre-majors for only one year.

Major Requirements and Special Curricula in the Various Departments and Schools

Below are gathered together the major requirements and set curricula for the College of Arts and Sciences, and teaching major and minor requirements for the College of Education. For general University requirements for advanced degrees, see Graduate School section, page 150. For specific requirements, see Announcement of the Graduate School, available upon request.

ANATOMY

John L. Worcester, Executive Officer, Anatomy Building

(See Biological Sciences, page 86.)

ANTHROPOLOGY

Erna Gunther, Executive Officer, 211 Museum

DEGREE: Bachelor of Arts

Credits		Credits	
51, 52, 53. *Introduction to Anthropology....	15	141. Primitive Literature.....	3
101. Basis to Civilization or		142. Primitive Religion.....	3
105. Culture Growth or		143. Primitive Art.....	3
107. Methods of Archaeology.....	3 or 5	150. General Linguistics.....	3
111. Indian Cultures of Pacific or		160. History of Anthropology.....	2
112. Peoples of the Pacific or ...		185. Primitive Soc. & Pol. Institutions.....	5
110. American Indians.....	3	193-195. Reading.....	†
			45

A 2.5 grade point average in anthropology is required of all majors in the field.

*Students starting major before spring, 1937, should be allowed to substitute other courses amounting to five credits.

†To be arranged

This major should be supported by appropriate courses in psychology, zoology, geology, geography according to special interests. It is necessary, if graduate work in the field is contemplated, to take French and German through Scientific Reading or to offer its equivalent.

ARCHITECTURE

Harlan Thomas, *Director Emeritus, Physiology Hall*

Arthur P. Herrman, *Executive Officer, Physiology Hall*

Member of Association of Collegiate Schools of Architecture

DEGREE: Bachelor of Architecture

Requirements for Degree. The credit requirement for graduation (outside of military or naval science and physical education) is set by this curriculum at 225 credits. No deviation or substitution of courses will be permitted except by consent of the director of the school. In the courses of design, Arch. 54, 55, 56 are known as Grade I; Arch. 104, 105, 106, 107, Grade II; and Arch. 154, 155, 156, 157, 158, Grade III. However, a student may in some cases advance more rapidly; by perfection of work the requirements of a grade may be satisfied without technical registration for all quarters of that grade. The total number of credits hereby reduced must not be below the University minimum of 180 credits for a four-year course and 225 credits for the five-year course.

Curriculum in Architecture Leading to the Degree of
Bachelor of Architecture

FIRST YEAR

Autumn Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Arch. 1. Arch. Appreciation	2	Arch. 2. Arch. Appreciation	2	Arch. 3. Arch. Appreciation	2
Arch. 4. Elem. of Design	4	Arch. 5. Elem. of Design	4	Arch. 6. Elem. of Design	4
Arch. 7. Graphics	1	Arch. 8. Graphics	1	Arch. 9. Graphics	1
Arch. 47. Elements of Building Construction	3	Arch. 48. Elements of Building Construction	3	Art. 34. Drawing and Sculpture	3
Art 32. Draw. & Sculpture	3	Art 33. Draw. & Sculpture	3	Comp. 6. Composition	3
Comp. 4. Composition	3	Comp. 5. Composition	3	Electives	2
M.S. and P.E. or N.S.	+	M.S. and P.E. or N.S.	+	M.S. and P.E. or N.S.	+

SECOND YEAR

Arch. 51. History of Arch.	2	Arch. 52. History of Arch.	2	Arch. 53. History of Arch.	2
Arch. 54. Design, Grade I	5	Arch. 55. Design, Grade I	5	Arch. 56. Design, Grade I	5
Math. 54. Arch. Math.	3	Math. 55. Arch. Math.	3	Math. 56. Arch. Math.	3
French 1. Elementary	5	French 2. Elementary	5	French 3. Elementary	5
M.S. and P.E. or N.S.	+	M.S. and P.E. or N.S.	+	M.S. and P.E. or N.S.	+

THIRD YEAR

Arch. 40. Water Color	2	Arch. 41. Water Color	2	Arch. 42. Water Color	2
Arch. 101. History of Arch.	2	Arch. 102. History of Arch.	2	Arch. 103. History of Arch.	2
Arch. 104. Design, II	5	Arch. 105. Design, II	5	Arch. 106. Design, II	5
Arch. 120. Work. Drawings	2	Arch. 121. Work. Drawings	2	Arch. 122. Work. Drawings	2
C.E. 170. Theory of Constr.	3	Arch. 117. Bldg. Constr.	3	Arch. 118. Bldg. Constr.	3
Electives	2	Arch. 125. Pencil Sketching	1	Arch. 126. Pencil Sketching	1

FOURTH YEAR

Arch. 107. Design, II	5	Arch. 113. Freehand Draw	3	Arch. 142.* Hist. of Ornam.	2
Arch. 112. Freehand Draw	3	Arch. 141. Hist. of Ornam.	2	Arch. 151. Hist. of Arch.	2
Arch. 140. Hist. of Ornam.	2	Arch. 154. Design, III	5	Arch. 155. Design, III	5
E.E. 105. Electric Wiring	2	C.E. 151. Plumbing & Sanit.	2	M.E. 110. Heat. & Ventila.	2
Electives	3	Electives	3	Electives	5

FIFTH YEAR

Arch. 152. Theory of Arch.	2	Arch. 153. Theory of Arch.	2	Arch. 158. Design, III	5
Arch. 156. Design, III	5	Arch. 157. Design, III	5	Arch. 169. Specifications and Materials	2
Art 160. Life Drawing	3	Arch. 168. Specifications and Materials	2	Art. 162. Life Drawings	3
E.B. 57. Business Law	3	Art 161. Life Drawings	3	Electives	5
Electives	2	Electives	3		

*Suggested elective but not required.

Physical Education 4, 6, 8, or 10 must be included in all women's schedules and Physical Education 15 must be included in all men's schedules.

Curriculum in City Planning Leading to the Degree of Bachelor of Architecture in City Planning

FIRST YEAR, SECOND YEAR, THIRD YEAR—Same as present curriculum in Architecture.

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
(Same as Architecture)		Arch. 113. Free. Draw.....	3	Arch. 151. Hist. of Arch.....	2
		Arch. 141. Hist. Ornament...	2	C.E. 150. San. Eng. & P.H....	3
		G.E. 21. Surveying.....	3	C.E. 152. Mun. Eng.....	3
		Arch. 180. Prin. of Plan.....	2	Arch. 181. Prin. of Plan.....	2
		Arch. 190. C.P. Design.....	5	Arch. 191. C.P. Design.....	5
			15		15

FIFTH YEAR

Arch. 152. Theory Arch.....	2	Arch. 153. Theory Arch.....	2	Geog. 155. Inf. Geo. Env....	5
E.B. 57. Sur. Bus. Law.....	3	E.B. 3. Economics.....	3	Arch. 183. Prin. of Plan.....	2
†Soc. 165. The City.....	5	†E.B. 109. Prin. Real Est....	5	Arch. 194. C.P. Design	
Arch. 182. Prin. of Plan.....	1	Arch. 193. C.P. Design.....	5	(Thesis).....	7
Arch. 192. C.P. Design.....	5		15		14
	16				

†Courses with prerequisites which must be adjusted.

Physical Education 4, 6, 8, or 10, must be included in all women's schedules and Physical Education 15 must be included in all men's schedules.

ART

Walter F. Isaacs, Director, 401 Education Hall

DEGREE: Bachelor of Arts

Advanced standing in this school is granted only on presentation of credentials from art schools or university art departments whose standards are recognized by this school. Ordinarily, the presentation of samples of work done will be required before advanced standing will be considered.

Curricula

REQUIRED FOR THE FIRST YEAR

	<i>Credits</i>
Art 5, 6, 7. Drawing and Painting.....	9
Art 9, 10, 11. Design.....	9
Comp. 4, 5, 6. English Composition.....	9
Modern Foreign Language.....	15
General Electives.....	3
Military Science and Physical Education or Naval Science.....	+

Major in Painting and Design

<i>Second Year</i>	<i>Credits</i>	<i>Third Year</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Credits</i>
Art 53, 54, 55. Design.....	9	Arch. 3. Architecture Apprec. 2		Art 20. Modern Sculpture... 2	
Art 56, 57, 58. Dr. & Paint. 9		Art 126. Hist. Mod. Paint... 2		Art 62. Essentials of Int.Ds. 2	
Art Electives.....	3	Art 160, 161, 162. Life..... 9		Art 150. Illustration..... 5	
General Electives.....	24	Approved Design.....	3	Art 163 or 164. Comp..... 5	
M.S. and P.E. or N.S.....	+	Art 103, 104 or 157, 158..... 6		Art Electives.....	15
	45	Pol. Sci., or Sociol. or Econ... 5		General Electives.....	16
		Lab. Science (see note).....	10		45
		General Electives.....	8		
			45		

Preferred electives for students interested in Costume Design, Art 169, 170, 171; 179, 180, 181; Home Economics courses in clothing and textiles 12, 25, 47; 101, 102; 160, 161 and 198.

The total number of credits must include Physical Education 15 for men or Physical Education 10 or Physical Education 4, 6, and 8 for women.

NOTE: Only courses in the following departments will be recognized: botany, zoology, chemistry, physics (except photography), geology.

Major in Public School Art

Students wishing to prepare for teaching may follow the public school art curriculum of this school leading to the bachelor of arts degree, or the public school art curriculum in the College of Education leading to the degree of bachelor of arts. In either case the major and minor are both in art, but the candidate is expected to complete a second minor in some field other than art. An average standing of "B" in art subjects is required of all teaching candidates.

<i>First Year</i>	<i>Credits</i>	<i>Second Year</i>	<i>Credits</i>	<i>Third Year</i>	<i>Credits</i>
Art 5, 6, 7. Dr. & Paint....	9	Art 53, 54, 55. Design.....	9	Art 160, 161, 162. Life.....	9
Art 9, 10, 11. Design.....	9	Art 56, 57, 58. Dr. & Paint. 9		Art 105, 106 & Appr. Design	9
Comp. 4, 5, 6. Comp.....	9	Arch. 3. Architecture Appr....	2	Art 103, 104 or 157, 158....	6
Sociology 1*.....	5	Lab. Science (see note).....	10	Educ. 60. Secondary Educ....	3
Economics 4*.....	5	Psych. 1. General.....	5	Educ. 90. Measures.....	2
Educ. 1. Educ. Orientation. 2		General Electives.....	10	Educ. 70. Methods.....	5
General Electives.....	6	M.S. and P.E. or N.S.....	+	Educ. 9. Psych. Sec. Educ....	3
M.S. and P.E. or N.S.....	+	It is necessary to have 20 or 25 credits of major work before taking Education courses.		Political Science 1*.....	5
				General Electives.....	3
<i>Fourth Year</i>	<i>Credits</i>	<i>Fifth Year</i>	<i>Credits</i>	The bachelor's degree will be awarded upon the completion of the requirements of the four-year course. The normal diploma will be awarded upon the completion of the requirements for the fifth year.	
Art 150, 151. Illustration...10		Educ. 120. Educ. Psych.... 3			
Art 163, 164. Composition...10		Educ. 71, 72. Cadet Teaching 8			
Art 100. Methods..... 2		Phil. 129. Esthetics..... 5			
Art 101. Elem. of Int. Des.. 2		Art Electives.....15			
Art 102. Applied Design.... 2		General Electives.....10			
Art 126. Hist. of Painting.. 2					
Art 20. Modern Sculpture. 2					

The total number of credits must include Phys. Educ. 15 for men or Phys. Educ. 10 or Phys. Educ. 4, 6 and 8 for women.

*The social science requirement may be satisfied by 15 credits in one or more of the following departments: sociology, economics, political science.

NOTE: Only courses in the following departments will be recognized: botany, zoology, chemistry, physics (except photography), geology.

Major in Interior Design

<i>Second Year</i>	<i>Credits</i>	<i>Third Year</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Credits</i>
Arch. 1, 2, 3. Appreciation.. 6		Art 110, 111, 112. Int. Des....15		Art 20. Modern Sculpture.. 2	
Arch. 4, 5, 6. Elem. of Des..12		Art 62. Essen. of Int. Des.... 2		Art 126. Hist. of Mod. Paint. 2	
Arch. 7, 8, 9. Graphics..... 3		Econ., Pol. Science, or Sociology..... 5		Art 172, 173, 174. Int. Des..15	
Art 80, 81, 82. Furn. Des.. 9		Lab. Science (see note).....10		Arch.101,102,103. Hist. Arch. 6	
Art 83. Hist. of Furniture... 2		General Electives.....13		H.E. 25. Textiles..... 5	
General Electives.....13				H.E. 47. Home Furnishings.. 5	
M.S. and P.E. or N.S.....	+			Electives.....10	

The total number of credits must include Phys. Educ. 15 for men or Phys. Educ. 10 or Phys. Educ. 4, 6 and 8 for women.

NOTE: Only courses in the following departments will be recognized: botany, zoology, chemistry, physics (except photography), geology.

Major in Painting or Sculpture**PAINTING**

<i>Second Year</i>	<i>Credits</i>	<i>Third Year</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Credits</i>
Art 56, 57, 58. Dr. & Paint. 9		Art 107, 108, 109. Portrait... 9		Art 160, 161, 162. Life..... 9	
Art 65, 66, 67. Dr. & Paint. 9		Approved Design..... 6		Art 163, 164. Composition...10	
General Electives.....27		Art 126. Hist. Mod. Paint.... 2		Electives.....26	
M.S. and P.E. or N.S.....	+	Arch. 3. Architecture Appr.... 2			
		Lab. Science (see note).....10			
		Econ., Pol. Sci., or Soc..... 5			
		Art 20. Mod. Sculpture.... 2			
		Art Electives..... 9			

SCULPTURE

<i>Second Year</i>	<i>Credits</i>	<i>Third Year</i>	<i>Credits</i>	<i>Fourth Year</i>	<i>Credits</i>
Art 56, 57, 58. Dr. & Paint.	9	Art 20. Mod. Sculpture.....	2	Art 132, 133, 134. Sculpture	9
Art 72, 73, 74. Sculpture....	9	Art 103, 104. Pottery.....	6	Art 136, 137, 138. Sculp.	
General Electives.....	27	Art 122, 123, 124. Sculpture.	9	Comp.....	9
M.S. and P.E. or N.S.....	+	Art 126. Hist. Mod. Paint... 2		Art 160, 161, 162. Life.....	9
		Arch. 3. Architecture Appr... 2		General Electives.....	18
		Lab. Science (see note).....	10		
		Econ., Pol. Sci., or Soc.....	5		
		Electives.....	9		

Preferred electives—Architectural Design and History of Ornament.

The total number of credits must include Phys. Educ. 15 for men or Phys. Educ. 10 or Phys. Educ. 4, 6 and 8 for women.

NOTE: Only courses in the following departments will be recognized: botany, zoology, chemistry, physics (except photography), geology.

Teaching Major and Minor in the College of Education**MAJOR IN PUBLIC SCHOOL ART**

The following art courses are required for the degree of bachelor of arts.

For the normal diploma recommendation an average grade of "B" or better is required. Both the major and minor are in art, and the candidate is expected to have a second minor in another field.

Applicants for the normal diploma are required to complete the curriculum of the current catalogue, unless the diploma is granted within five years from the date of entrance.

Samples of art work must be presented to the Director of the School of Art if advanced credit is desired.

	<i>Credits</i>
Art 53, 54, 55. Design.....	9
Art 56, 57, 58. Drawing and Painting.....	9
Art 20. Modern Sculpture.....	2
Art 100. Methods.....	2
Art 101. Elementary Interior Design.....	2
Art 102. Applied Design.....	2
Art 103, 104. Pottery.....	6
or	
Art 157, 158. Design in Metal.....	6
Art 105, 106. Lettering, Commercial Design.....	
Art 126. History of Modern Painting.....	2
Art 150, 151. Illustration.....	10
Art 160 or 161 or 162. Life.....	3
Art 166. Design.....	3
Architecture 3. Appreciation of Architecture.....	2
Minimum total.....	58
Plus freshman art courses.....	18
	76

**SPECIAL MINOR OPEN TO HOME ECONOMICS MAJORS
IN TEXTILES AND CLOTHING**

	<i>Credits</i>
Art 5, 6. Drawing.....	6
Art 9, 10, 11. Design.....	9
Art 53, 54, 55. Advanced Design.....	9
Art 105. Lettering.....	3
Art 169, 170. Costume Design.....	4
Minimum total.....	31

BACTERIOLOGY*B. S. Henry, Executive Officer, 420 Johnson Hall***DEGREE: Bachelor of Science**

Ten credits of botany or zoology, 10 credits of physics and Chemistry 23, 111, 131, and 132 are required of all bacteriology majors.

A grade point average of 2.5 in courses in chemistry and biology shall be required for admission to Bacteriology 100 and sponsorship by the department. A grade point average of 2.5 in all courses in bacteriology shall be required for graduation.

Transfer students entering the undergraduate curricula shall be considered by a departmental committee and any examinations deemed necessary shall be required.

For the degree of bachelor of science with a major in bacteriology, 36 credits of bacteriology and satisfaction of the College of Arts and Sciences group requirements are necessary.

For the degree of bachelor of science in bacteriology the set course below must be followed; the selection of an optional group in the third and fourth years depends upon the type of specialization desired. Ten undergraduate credits prerequisite to graduate work.

DEGREE: Bachelor of Science in Bacteriology**FIRST YEAR**

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition.....	5	Comp. 2. Composition.....	5	Psych. 1. General.....	5
Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5	Chem. 23. Qual. Analysis.....	5
Zool. 1 or 3. Introduction		Zool. 2 or 4. Introduction		Soc. 1. Survey.....	5
or		or		M.S. and P.E. or N.S.....	+
Bot. 1. Elementary.....	5	Bot. 2. Elementary.....	5		
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+		

SECOND YEAR

Chem. 131. Organic.....	5	Chem. 132. Organic.....	5	Chem. 111. Quan. Analysis..	5
Physics 1 or 4. General.....	5	Physics 2 or 5. General.....	5	Bact. 100. Fundamentals	
Elective*.....	5	Elective*.....	5	of Bacteriology.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	Elective*.....	5
				M.S. and P.E. or N. S.....	+

*Students planning to take option "a" (see below) in their third and fourth years are urged to use these electives for foreign language courses.

THIRD YEAR

Group options: (a) Bacteriologist; (b) Medical Laboratorian; (c) Industrial Laboratorian. In the curricula below, the letters (a), (b), and (c) refer to these options respectively.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Bact. 105. Infec. Diseases...	5	Bact. 102. Sanitary and		.....
Anat. 105. Histology.....	6	Clinical Methods.....	5		
<i>Group Option</i>		<i>Group Option</i>		<i>Group Option</i>	
(a) Biology elective.....	5	(a) Chem. 140. Physical.....	3	(a) Chem. 141. Physical.....	3
(b) Bact. 103. Pub. Hygiene	5	Biology elective.....	5	Bact. 104. Serology.....	5
(c) Elective.....	5	Elective.....	2	Electives.....	7
		(b) Elective.....	5	Bact. 104. Serology.....	5
		Anat. 100. Lecture.....	3	Zool. 107. Parasitology...	5
		Anat. 101. General.....	3	Elective.....	5
		(c) Elective.....	10	(c) Electives.....	10
				Bot. 115. Yeasts & Molds	5

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Bact. 120. Applied.....	5	Bact. 121. Applied.....	5	Elective.....	5
Elective.....	5	Electives.....	5		
<i>Group Option</i>		<i>Group Option</i>		<i>Group Option</i>	
(a) Chem. 161. Physiological	5	(a) Chem. 162. Physiological	5	(a) Electives.....	10
(b) Bact. 110. Pathology...	5	(b) Zool. 121. Microscopic	5	(b) Bact. 122. Applied.....	5
(c) Bact. 130. Industrial....	5	Technique.....	3	Elective.....	5
		Elective.....	2	(c) Bact. 132. Industrial....	5
		(c) Bact. 131. Industrial....	5	Bact. 122. Applied.....	5

The total number of credits must include Phys. Educ. 15 for men, or Phys. Educ. 4, 6, 8, or 10 for women.

Cooperating Laboratories

Children's Orthopedic Hospital Lab.; director: Hildur Truesdon, B.S.
 Physicians' Clinical Laboratory; director: G. A. Magnusson, M.D.
 Polyclinic Laboratory; director: Homer Wheelon, M.D.
 Providence Hospital Laboratory; director: Alfred Balle, M.D.
 Seattle Department of Health Laboratory; director: Marie Mulhern, B.S.
 State Board of Health Laboratory; director: A. U. Simpson, M.D.
 Swedish Hospital Laboratory; director: D. H. Nickson, M.D.
 U. S. Frozen Pack Laboratory; director: James A. Berry, M.S.
 Virginia Mason Hospital Laboratory; director: Freda Hendrickson, M.S.

BIOLOGICAL SCIENCES

Anatomy—John L. Worcester, Executive Officer, Anatomy Building

Botany—George B. Rigg, Executive Officer, 327 Johnson Hall

Zoology and Physiology—Trevor Kincaid, Executive Officer, 202 Johnson Hall

DEGREE: Bachelor of Science in Anatomy, Botany or Zoology,
 depending upon which science is selected

In this curriculum the student must select a major in anatomy, botany or zoology. On selecting his major subject, the student should at once consult his major department, a member of which will act as his adviser. The adviser will plan a special curriculum for the student, fitting him for his chosen work.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition.....	5	Comp. 2. Composition.....	5	Mathematics or Elective....	5
Botany or Zoology.....	5	Botany or Zoology.....	5	Electives.....	10
Electives.....	5	*Math. or Elective.....	5	M.S. and P.E. or N.S.....	+
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+		

SECOND YEAR

Chemistry or Physics.....	5	Chemistry or Physics.....	5	Major.....	5
Major.....	5	Major.....	5	Electives.....	10
Electives.....	5	Electives.....	5	M.S. and P.E. or N.S.....	+
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+		

THIRD YEAR

Major.....	5	Major.....	5	Major.....	5
Pol. Sci., Soc., or Econ....	5	Pol. Sci., Soc., or Econ....	5	Electives.....	10
Electives.....	5	Electives.....	5		

FOURTH YEAR

Major.....	5	Major.....	5	Electives.....	15
Electives.....	10	Electives.....	10		

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

The total number of credits must include Phys. Educ. 15 for men or Phys. Educ. 10 or Phys. Educ. 4, 6 and 8 for women.

BOTANY

G. B. Rigg, Executive Officer, 327 Johnson Hall

(See Biological Sciences, page 86)

For students who wish to specialize in botany, there lies a choice between the general requirements by groups under "Curricula" on page 80, leading to the degree of Bachelor of Science, and the curriculum in Biological Sciences on page 86, leading to the degree of Bachelor of Science in Botany. To general students, it makes little difference, but for those fitting for special work crowded into four years of preparation, the latter curriculum sometimes offers more opportunity for diversity.

Landscape Gardening. While we do not offer a 4-year course, selections may be made fitting into the requirements of the school which the student expects to enter. Since these differ, there is no point to laying out a fixed curriculum.

Hydroponics. For this a general preparation required in botany is plant physiology, genetics, and taxonomy, with garden and greenhouse experience. The experience may be had in the arboretum and its greenhouses.

Floriculture. Here again the general preparation will be determined by the college in which the student expects to do the final year or two.

Seed work. Work in seed houses is general except for the final year or part of year in the recognition and germination of seeds.

It is usual to have a conference with each student who wants a special preparation before he begins the work. In this conference, the student and adviser together plan the first year's work definitely and the following years' more tentatively. This serves the student and the adviser both in clarifying just what the student should take and just what purpose it serves in his preparation.

Teaching Major or Minor in the College of Education

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1. Elementary Botany or its equivalent....	5	1. Elementary Botany or its equivalent....	5
3. Elementary Botany.....	5	3. Elementary Botany.....	5
101. Ornamental Plants.....	5	101. Ornamental Plants.....	5
105, or 106, or 107. Morphology & Evolution.	5	105, or 106, or 107. Morphology & Evolution.	5
Other courses to make a minimum total of....	40	Other courses to make a minimum total of....	25

CHEMISTRY

H. K. Benson, Executive Officer

For all chemistry majors in the College of Arts and Sciences, a grade point average of 2.5 in chemistry courses and a grade point average of 2.5 in all courses, shall be required for graduation. Upon completion of the first 90 credits (equivalent to the work of the freshman and sophomore years) every student will be passed upon by a departmental committee which shall consider his academic record and other qualifications, and give any comprehensive examinations deemed necessary, to determine whether or not the department desires to sponsor the student in further work in his curriculum. All students from other schools entering the undergraduate curricula shall first be considered by a departmental committee, which shall pass on the credentials presented in chemistry courses and give any examinations that may be deemed necessary to determine the proper place to begin courses in this department.

Elective Curriculum

DEGREE: Bachelor of Science

The elective curriculum is designed for those desiring to major in chemistry as part of a broad general education or in preparation for teaching (see below),

or preliminary to entering medicine. The following courses or their equivalent shall constitute the minimum requirements for the elective major: Chemistry 1 or 21, 2 or 22, 23, 111, 131, 132, 140, 141 (in lieu of 140-141, pre-medical students may present 161-162); 15 credits each in college mathematics and physics; 10 credits in French or German. At least 20 credits in chemistry and 10 credits in physics should be completed among the first 90 credits (end of the sophomore year). The intention of the student to graduate with a major in chemistry should be declared not later than the end of the sophomore year.

Prescribed Curriculum

DEGREE: Bachelor of Science in Chemistry

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5	Chem. 23. Qual. Analysis....	5
Math. 4. Plane Trig.....	5	Math. 5. College Algebra....	5	Math. 6. Anal. Geom.....	5
Comp. 1. Composition.....	5	Comp. 2. Composition.....	5	¹ Electives.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

SECOND YEAR

Chem. 109. Quant. Analysis	5	Chem. 110. Quant. Analysis..	5	Chem. 101. Adv. Qual. Anal.	5
Physics 1 or 97. General....	5	Physics 2 or 98. General....	5	Physics 3 or 99. General....	5
Math. 107. Calculus.....	5	Math. 108. Calculus.....	5	Math. 109. Calculus.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

THIRD YEAR

Group options: (a) General; (b) Industrial; (c) Biochemical; (d) Oceanographical. In the curricula below, the letters (a), (b), (c), and (d) refer to these options respectively.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 131. Organic.....	5	Chem. 132. Organic.....	5	Chem. 133. Organic.....	5
² Electives.....	5	² Electives.....	5	² Electives.....	5
<i>Group Option</i>		<i>Group Option</i>		<i>Group Option</i>	
(a) Electives.....	5	(a) Electives.....	5	(a) Electives.....	5
(b) ³ Chem. 121. Chem. of Eng. Materials.....	5	(b) Chem. 122. Inorganic Chem. Industries.....	5	(b) Chem. 123. Organic Chem. Industries.....	5
(c) Physiol. 151. Adv. or Bact. 101. General...	5	(c) Physiol. 152. Adv. or Bact. 102. Sanitation..	5	(c) Physiol. 153. Adv. or Bact. 103. Public Hygiene.....	5
(d) ⁴ Phys. 101. Intro. Mod. Theories.....	3	(d) ⁴ Phys. 102. Intro. Mod. Theories.....	3	(d) ⁴ Electives.....	5
Elective.....	2	Elective.....	2		

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 181. Physical and Theoretical.....	5	Chem. 182. Physical and Theoretical.....	5	Chem. 183. Physical and Theoretical.....	5
Electives.....	2	Chem. 190. History of Chem.	2	Chem. 191. History of Chem.	2
<i>Group Option</i>		<i>Group Option</i>		<i>Group Option</i>	
(a) Electives.....	8	(a) Electives.....	8	(a) Electives.....	8
(b) Chem. 171. Unit Operations.....	5	(b) Chem. 172. Unit Operations.....	5	(b) Electives.....	8
Chem. 176. Chemical Engineering Thesis...	3	Chem. 177. Chemical Engineering Thesis...	3	(c) Chem. 163. Biological... Electives.....	5
(c) Chem. 161. Biological... Electives.....	3	(c) Chem. 162. Biological... Chem. 166. Biochemical Preparations.....	3	(d) Electives.....	8
(d) ⁴ Chem. 161. Biological or Elective.....	5	(d) ⁴ Chem. 162. Biological or Elective.....	5		
Elective.....	3	Elective.....	3		

¹ Electives must be approved by department.

² In addition to the subjects specially listed above, 10 credits in either French or German are required to be completed before the end of the third year.

³ Chem. 51 and 52 (Chemical Calculations) are suggested before registering for Chem. 121.

⁴ Twenty-five credits of electives must be taken in the biological sciences or geology.

The total number of credits for graduation must include Phys. Educ. 15 for men, or Phys. Educ. 4, 6, 8 or 10 for women.

Major in Chemical Engineering

See College of Engineering, page 137.

Teaching Major or Minor in the College of Education

For a teaching major in chemistry, the following courses are required, to make a minimum total of 41 credits: Chem. 1-2 or 21-22, 23, 101, 111, 131, 132, 140-141. One year of college physics is required. For the teaching minor, the student should present the following courses, making a minimum total of 25 credits: Chem. 1-2 or 21-22, 23, 101 and 111, or 131-132. At least high school physics is required for the minor.

Grades of "C" or above must be obtained in all required chemistry courses, with a grade point average of 2.5 therein and in all courses. It is recommended that candidates have at least 15 credits in mathematics.

Applicants for teaching certificates in chemistry, who are transfers from other institutions, must earn a minimum of nine credits in this University in order to secure a departmental recommendation.

CLASSICAL LANGUAGES AND LITERATURE

(Latin and Greek)

David Thomson, Executive Officer, 203 Denny Hall

DEGREE: Bachelor of Arts

Greek

For an undergraduate major at least 36 credits are required. These must be in courses above 1-2 and at least one-half of them must be in courses numbered 100 or higher. Two years of Latin in high school or Latin 1-2, 3 in the University are required, as is also a satisfactory showing in the Senior Examination given at the end of the senior year. A reading knowledge of German is recommended.

NOTE: Courses in Classical Antiquities do not count towards a major or minor in Greek or Latin.

Latin

For an undergraduate major, the requirement is 36 credits, at least. These must be in the courses above 6 and at least half of them must be in courses numbered 100 or higher. Fifteen credits in Greek are required and, at the end of the senior year, the Senior Examination must be passed with a satisfactory grade.

Teaching Major or Minor in Latin in the College of Education

For the teaching major, Greek 1-2, 3 are required, in addition to thirty-five approved credits in Latin and the senior examination. At least 18 credits must be in upper division courses.

Twenty approved credits, including Latin 106, are required for the minor. The student will be given an examination planned to test his knowledge of the Latin ordinarily taught in a standard four-year high school.

The prerequisite for any work toward either a major or a minor in Latin is three and one-half years of high school Latin or its equivalent. Courses 1-2, 3, 4, 5, 6, 11, 13 do not count toward a major or a minor.

ECONOMICS*H. H. Preston, Dean, College of Economics and Business, 210 Commerce Hall***DEGREE: Bachelor of Arts**

Majors in economics in the College of Arts and Sciences must meet the general requirements of that college. They must take Economics and Business 1-2, 100, 105, 185, 187, and four additional courses selected from the following: 103, 104, 105, 106, 107, 108, 109, 120, 121, 125, 131, 141, 142, 161, 162, 163, 164, 171, 172, 175, 181, 185, 187, 188.

Courses 103 to 109 are intermediate courses and may be taken in the third quarter of the sophomore year.

Teaching Major or Minor in the College of Education

Students choosing economics as either their teaching major or minor should consult with the executive officer of the department of economics or the professor in charge of advanced economics with regard to a proper selection of courses. An academic major or minor in economics must include the following:

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
E.B. 1-2. General Economics.....	10	E.B. 1-2. General Economics.....	10
E.B. 100. Statistical Analysis.....	5	E.B. 185. Advanced Economic Theory.....	5
E.B. 105. Economics of Labor.....	5	Additional credits chosen from the	
E.B. 185. Advanced Economic Theory.....	5	following list.....	5
E.B. 187. Develop. of Econ. Thought.....	5		20
Additional credits chosen from the			
following list.....	20		
	<hr/> 50		

Electives from which to choose additional credits: E. B. 102, 103, 104, 105, 106, 107, 108, 121, 131, 141, 142, 161, 162, 163, 171, 172, 175, 181, 185, 187, 188.

ENGLISH**(Literature, Drama, Speech, Composition)***D. D. Griffith, Executive Officer, 107 Parrington Hall***DEGREE: Bachelor of Arts****Major Curricula in the College of Arts and Sciences and Major and Minor Curricula in the College of Education**

Majors and minors in English may be earned by credit in accordance with the schedules listed below. Variation in the schedules is permitted if approved in writing by the department and if the variation represents a coordinated study program. Normally, from 45 to 60 credits are required for a major of which 50 per cent must be upper division.

Majors in any of the divisions of English may be offered in the College of Arts and Sciences or in the College of Education. Minors may be offered in the College of Education for a normal diploma and are presented here for others who desire a basic organization of English work requiring fewer credits than the major. The minor is normally from 29 to 38 credits.

Note that there is some variation in schedules below for those desiring professional certification as teachers of English. Education 75H, I, or J is required of majors in literature, drama, or composition and 75X of majors in speech. A grade point average of 2.25 in upper division English courses is required of majors and minors desiring certification for a normal diploma. Composition 1 and 2 are general college requirements and may not be counted toward a major or a minor.

At the end of the senior year, all majors in the College of Arts and Sciences and in the College of Education are required to pass the senior examination given by the division of English in which the major falls. These examinations are divided into two parts, the first testing the general knowledge of the field of the major and

the second testing the student's knowledge of two special fields and his ability to write stylistically effective and well organized papers in these special fields. The major is responsible for review of his previous courses, independent reading which will advance him in the knowledge and the scholarly methods of his chosen field, and for continual growth in speaking and writing skills.

Literature

Major courses in Literature are grouped as follows:

Group I

- Lit. 150, 151. Old and Middle English
Lit. 153, 154. English Literature: 1476-1642
Lit. 180, 181. Old English Language

Group II

- Lit. 170, 171. Shakespeare
Lit. 167, 168, 169. Seventeenth Century Literature
Lit. 144, 145. Eighteenth Century Literature

Group III

- Lit. 177, 178. Early Nineteenth Century Literature
Lit. 174, 175, 176. Late Nineteenth Century Literature
Lit. 161, 162. American Literature

Major	Credits	Minor	Credits
Lit. 57. Introduction to Poetry.....	5	Lit. 57. Introduction to Poetry.....	5
Lit. 58. Introduction to Fiction.....	5	Lit. 58. Introduction to Fiction.....	5
Lit. 64, 65. Literary Backgrounds.....	10	Lit. 64, 65. Literary Backgrounds.....	10
One major course from each major group.....	15	Two Major Courses.....	10
A continuation of one of above major courses.	5		
Electives.....	5		30
Senior Major Examination.....	0		
	<hr/> 45		

For a teaching major in the College of Education, add to the above major, Speech 79, Lit. 117 and four credits in advanced composition. Add for the minor, Speech 79, Lit. 117 or four credits in advanced composition.

Drama

In drama, the major and minor are the same for graduation in the College of Arts and Sciences and for a normal diploma in the College of Education. Usually, supplementary studies in literature are required. These should include Lit. 58, 64, 65 and two courses from 170, 171, 177, 178, 174, 175, 161, 162.

Major	Credits	Minor	Credits
Drama 1, 2. Introduction to the Theatre.....	4	Drama 1, 2. Introduction to the Theatre.....	4
Drama 46, 47, 48. Theatre Speech.....	9	Drama 46, 47, 48. Theatre Speech.....	9
Drama 51, 52, 53. Elementary Acting.....	9	Drama 51, 52, 53. Elementary Act. (2 qtrs.)..	6
Drama 103. Scene Construction.....	3	Drama 103. Scene Construction.....	3
Drama 104. Scene Design.....	3	Drama 104. Scene Design.....	3
Drama 105. Theatrical Costume Design and Construction.....	3	Drama 105. Theatrical Costume Design and Construction.....	6
Drama 106. Make-up.....	3	Drama 106. Make-up.....	3
Drama 114. Stage Lighting.....	3		
Drama 121, 122, 123. Advanced Acting and Directing (2 quarters).....	6	Drama 127, 128, 129. Hist. of the Theatre..	6
Drama 127, 128, 129. Hist. of the Theatre.....	6	or Drama 151, 152, 153. Rep. Plays (2 qtrs.)..	6
Drama 151, 152, 153. Representative Plays.....	9		
Drama 197. Theatre Organ. & Management..	2	Drama 197. Theatre Organ. & Management..	2
Senior Major Examination.....	0		33
	<hr/> 60		

Speech

Courses in speech fall into five groups :

- I. Public Address and Argumentation.
Courses 38, 40, 41, 101, 103, 138, 139, 188, 211, 212.
- II. Voice Science and Voice Training.
Courses 43, 44, 187, 214.
- III. Oral Interpretation of Literature.
Courses 79, 179, 215.
- IV. Speech Pathology and Correction.
Courses 19, 50, 51, 190, 191, 192, 193, 194, 195, 196, 216.
- V. General and Special Courses.
Courses 161, 162, 163, 186, 220, Education 75X.

Major	Credits	Minor	Credits
Speech 40. Essentials of Speaking.....	5	Speech 40. Essentials of Speaking.....	5
Speech 43. The Speaking Voice.....	4	Speech 43. The Speaking Voice.....	4
Speech 186. Backgrounds of Speech.....	5	Speech 186. Backgrounds of Speech.....	5
Speech 190. Speech Correction.....	5	Speech 190. Speech Correction.....	5
Approved Speech Electives.....	26	Approved Speech Electives.....	13
Senior Examination.....	0		
	45		32

For a normal diploma with a major in Speech, the above 26 speech electives are designated as Speech 41 or 188, 38, 44, 79, 139, and 187. To these are added 191, and 194, making a total of 53 credits.

The minor electives listed above are designated as Speech 38, 79, and five credits of upper division speech elective.

Speech majors should elect the following courses related to speech work as part of the requirements.

	Credits
Lit. 64, 65. Literary Backgrounds.....	10
Lit. 117. History of the English Language.....	5
Psychology 1. General Psychology.....	5
Philosophy 2. Introduction to Social Ethics.....	5
Science including Physiology 11.....	10
Drama 51, 52. Elementary Acting.....	6
Drama 151, 153. Representative Plays.....	6
Approved studies in a subject other than speech (10 credits upper division).....	25

Composition

As the individual student objectives vary, no formal schedule is outlined for a major in composition. In general, the requirements are eighteen credits from the courses listed below supplemented by Literature 57, 58, 64, 65, 117 and ten credits from approved upper division courses in Literature.

Composition 110, 111, 112. Advanced Verse Writing
Composition 156, 157, 158. Advanced Narrative Writing
Composition 184, 185, 186. Professional Creative Writing
Drama 111, 112, 113. Playwriting
Drama 144, 145, 146. Dramatic Writing for Radio
Journalism 173, 174-175. Short Story Writing

It should be noticed that these are all upper division courses for which there are lower division prerequisites.

A minor in composition in the College of Education is 20 credits in composition courses numbered above 50, of which at least ten credits are chosen from the upper division courses listed above, and are supplemented by Literature 57 or 58, 64, 65, and 117.

FISHERIES

W. F. Thompson, Acting Director, 1 Fisheries Building

DEGREE: Bachelor of Science—elective course

DEGREE: Bachelor of Science in Fisheries

Effective in the fall quarter of 1939, there will be required for graduation from the School, a grade point average of 2.5 in fisheries courses and a grade point average of 2.5 in all other courses.

Effective in the fall quarter of 1939, admission to the third year of the School of Fisheries will require 90 credits in accord with the requirements of the School and a grade point average of 2.5.

Prescribed Curriculum in Fisheries

DEGREE: Bachelor of Science in Fisheries

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition.....	5	Comp. 2. Composition.....	5	Elective.....	5
Zool. 1. Animal Biology.....	5	Zool. 2. Animal Biology.....	5	Zool. 5. Embryology.....	5
Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5	Chem. 23. Qual. Analysis.....	5
Fish. 108.....	1	Fish. 109.....	1	Fish. 110.....	1
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

SECOND YEAR

*German or French.....	5	*German or French.....	5	Elective.....	5
Zoology or Fisheries (see options A, B, or C).....	5	Zoology or Fisheries (see options A, B, or C).....	5	Zoology or Fisheries (see options A, B, or C).....	5
Math. 4 or 31.....	5	Math. 5 or 32.....	5	Math. 6 or 33.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

*German is recommended. Any language substitution must be approved by the School of Fisheries.
NOTE: These requirements are listed in the order in which it is recommended that they be taken. They may be postponed and subjects required or permitted in the third and fourth years may be substituted, on approval by the School of Fisheries. Physical Education 15 must be included.

THIRD AND FOURTH YEARS

One of the following optional courses should be chosen: (A) General Fisheries Biology; (B) Life History and Conservation, Vertebrates or Invertebrates; (C) Hatchery Biology, the Propagation and Rearing of Fish. Under each option five hours of fisheries are required each quarter and in addition the Seminar meetings, Fisheries 195, 196, 197, are required in the fourth year. The remaining elective credit hours under options B and C must be chosen from subjects recommended by the School of Fisheries.

Option A. *General Fisheries Biology.* Fish. 101, 102, 103, 105, 106, 107 are required. A student must earn not less than 39 hours in fisheries and not over 96 credits in any two departments. The remaining elective credits must be approved by the School of Fisheries.

Option B. *Life History and Conservation.* Fish. 101, 102, 103, 105, 106, 107, 157, 158 are required. Courses 125, 126 may be substituted for 157 and 158. In addition 15 credits of mathematics besides that specified in the second year are required.

Option C. *Hatchery Biology, Propagation and Rearing of Fish.* Fish. 101, 102, 103, 105, 106, 107, 151, 152, 153, 154 are required. Fish. 125 or 157 may be substituted for 103. Chem. 144, *Physiological*; Bacteriology 101, *General*, are required.

Recommended Electives. In options (B), and (C), any fisheries, zoological or oceanographical course may count as an elective. The following additional subjects are recommended as electives: Chemistry: 109, 110, or 111, *Quantitative Analysis*; 131, 132, 133, *Organic*; 144, *Physiological*. Mathematics: 13, *Statistics*; 41, 42, or 107, 108, 109, *Calculus*. Bacteriology: 101, *General*; 102, *Sanitary*. Physics: 1, 2, 3, or 4, 5, 6, *General*. Physiology: 53, 54, *General*. Geology: 1, *Earth Science*, or 6, *Physiography*, or 7, *History of Geology*. Botany: 3, *Classification*.

Elective Curriculum in Fisheries

DEGREE: Bachelor of Science

Students may choose the elective departmental major when they do not wish to follow the prescribed curriculum in fisheries.

The requirements, other than those here specified, will be as for elective departmental majors in the College of Arts and Sciences, page 80. In connection with these requirements, the departments of the College are divided into three groups.

For the first two years in the School of Fisheries, there is required a minimum of thirty credits in Group III, 20 credits in either Group I or II and 10 credits in the remaining group, subject to the approval of the School. At least thirty-nine credits must be completed in Fisheries for the major.

FOOD TECHNOLOGY

*B. S. Henry, Chairman, 420 Johnson Hall; W. L. Beuschlein,
E. R. Norris, E. J. Ordal, E. I. Raitt, J. I. Rowntree*

A major in food technology provides training for students who intend to enter the field of food production as control or research laboratory workers. Emphasis may be placed upon bacteriology, chemistry, or food utilization by selection of various optional courses in the fourth year. Women interested in Home Economics research or teaching food and nutrition in college should follow this curriculum. Further flexibility is permitted in that a course may be substituted for any regularly scheduled course with the consent of the committee members representing the department in which the eliminated course is given.

For all food technology majors, a grade point average of 2.5 in bacteriology, chemistry and home economics, and a grade point average of 2.5 in all other subjects shall be required for graduation.

DEGREE: Bachelor of Science in Food Technology

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 1. General.....	5	Chem. 2. General.....	5	Chem. 23. Qual. Analysis....	5
Comp. 1. Composition.....	5	Comp. 2. Composition.....	5	Group 2 Elective.....	5
Zool. 1. Animal Biology		Zool. 2. General		Zoology or Botany.....	5
or		or		P.E. 15 or P.E. 10, or	
Bot. 1. Elementary.....	5	Bot. 2. Elementary.....	5	exemption exam.....	2-5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

SECOND YEAR

Chem. 131. Organic.....	5	Chem. 132. Organic.....	5	Chem. 111. Quant. Analysis..	5
Physics 1. General.....	5	Physics 2. General.....	5	Physics 3. General.....	5
Math. 4. Plane Trig.....	5	Math. 5. College Algebra....	5	Bact. 100. Fundamentals....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

THIRD YEAR

Bact. 105. Infec. Diseases...	5	Chem. 140. Elem. Phys.....	3	Chem. 141. Elem. Phys.....	3
Chem. 161. Physiology.....	5	Bact. 107. Spoilage.....	3	†H.E. 110. Food Utilization..	3
Optional*.....	5	Chem. 162. Physiological....	5	or	
		Elective.....	4	†H.E. 111. Nutrition.....	5
				Chem. 104. Food Analysis....	4
				Bot. 115. Yeasts & Molds...	5

FOURTH YEAR

Bact. 130. Industrial.....	5	Bact. 131. Industrial.....	5	Bact. 132. Industrial.....	5
Chem. 121. Industrial.....	5	Chem. 122. Industrial.....	5	Chem. 123. Industrial.....	5
Optional*.....	5	Optional*.....	5	Optional*.....	5

*Practical work in food plant, federal, state, or private laboratory, institution kitchen or formal course work, to be decided upon by student in consultation with the committee.

Additional recommended courses: colloidal chemistry, microscopic technic, histology, entomology, calculus, experimental cookery.

†Offered alternate years.

GENERAL STUDIES

H. B. Densmore, Chairman, 121 Education Hall

DEGREE: Bachelor of Arts or Bachelor of Science

Enrollment in General Studies is open to students who fall within the following classifications: (1) those who can spend only a limited time in the University and wish guidance in making up a program of work from this or other colleges adapted to their special needs; (2) those who wish to follow through to graduation the study of a field of knowledge or a subject of special interest not provided for in the usual departmental curricula. To be admitted to this division the student must have maintained at least a "C" average in his immediately preceding educational experience.

The requirements for graduation in General Studies are:

1. A 10-20-30 distribution of credits in the lower division groups with a grade point average of 2.0.
2. The early selection, with the help of an adviser, of a special field or subject of interest as a major to focalize and give direction to the student's work. The special fields at present are:

Social Science

Physical Science

Language and Literature

Biological Science

Fine Arts

Special subjects may include any phase of thought or vocational objective from any branch of knowledge that can be handled effectively in General Studies with the help of the instructors in the other departments concerned.

3. Formulation of a curriculum covering the final two years or more of the course, to be recommended by the adviser and approved by the committee.
4. Completion of at least 36 credits in the chosen field or subject. Because work will usually be drawn from several contributory departments or colleges, the number of credits allowed in this major will often exceed the maximum of 60 usually allowed. The Bachelor of Arts degree is awarded when the major subject is in Group I or II; the Bachelor of Science when the major subject is in Group III.
5. Completion of at least sixty upper division credits. This number may need to be increased considerably in order to meet the further requirement that at least half of the credits in the major be upper division.
6. A senior study embodying the reactions of the student to the work done in pursuing his major interest.

Prospective majors should consult the chairman for assignment to an adviser on courses of study and major interest. Suggestive curricula are kept on file for examination in his office.

GENERAL LITERATURE

Allen R. Benham, Executive Officer, 132 Parrington Hall

The Department of Literature offers a synthetic view of European literature and considers literature in general as a form of human expression.

A major in general literature requires a reading knowledge of two foreign languages. French and German are especially recommended. Satisfaction of requirement is determined by department offering instruction in language selected. General Literature 101 and 191, 192, 193, and sufficient other literature courses to make a total of 36-60 credits are also required.

Preparatory to his major, the student should earn 18 hours in lower division courses in either English, Latin, Oriental, or Romance literature.

For his major, the student should select in supplementary upper division courses from history (especially History 3 and 4, *Survey of Western Civilization*), philosophy

(especially Esthetics and the History of Philosophy), English, and translated literature in Chinese, German, Greek, Japanese, Latin, Persian, Romance, Russian, Sanskrit and Scandinavian. Such preparatory and supplementary courses are:

English Literature: 57, 58, 64, 65, 104, 106, 140.

French: 118, 119, 120; 154, 155, 156.

German: 100, 101, 103, 104.

Greek: 11, 13, 17, 18.

Italian: 121, 122, 123; 181, 182; 184.

Latin: 11, 13.

Oriental Studies: 50, 52, 130, 170, 171.

Romanic Languages: 34, 35, 36; or 134, 135, 136.

Scandinavian Literature: 109, 110, 111; 180, 181, 182.

Spanish: 118, 119, 120.

The student should consult his adviser as early as possible and arrange a logical sequence of courses. This sequence should include a comprehensive survey of at least one national literature, some studies in several, and detailed knowledge of one.

GEOGRAPHY

Howard H. Martin, Executive Officer, Social Science Building

DEGREE: Bachelor of Arts

Major in Geography

	Credits		Credits
Geog. 1-101. Regional Geography <i>or</i>		Geog. 102. United States.....	5
Geog. 7. Economic Geography.....	5	Geog. 155. Influences of Geog. Environment..	5
Geog. 11-111. Climate.....	5	Geog. 170. Conserv. of Natural Resources....	5
Geog. 121. Regional Climatology <i>or</i>		Approved geography electives.....	15
Geol. 2. Physical Geography.....	5		<hr/> 45

Majors should elect courses in economics, political science, history, sociology, and anthropology. Students desiring to specialize in climatology or meteorology should consult with the department concerning suitable courses in physics and mathematics.

Teaching Major or Minor in the College of Education

Major	Credits	Minor	Credits
Geog. 1-101. Regional Geog. <i>or</i>		Geog. 1-101. Regional Geog., <i>or</i>	
Geog. 7. Economic Geography.....	5	Geog. 7. Economic Geography	} 5
Geog. 11-111. Climate.....	5	Geog. 102. United States.....	
Geog. 102. United States.....	5	Geog. 170. Conservation.....	5
Geog. 140. Geog. in the Social Studies.....	3	Geog. 140. Geog. in the Social Studies.....	3
Geog. 155. Influence of Environment.....	5	Approved Electives.....	5
Geog. 170. Conservation.....	5		
Approved electives.....	17	Minimum total.....	23
Minimum total.....	<hr/> 45		

GEOLOGY

G. E. Goodspeed, Executive Officer, 114 Johnson Hall

DEGREE: Bachelor of Science

Recommendations applying to all undergraduate curricula in Geology:

A grade point average of at least 2.5 shall be required for geology 5 or 105, 6 or 106, 7 or 107 for admission to any courses in geology with a number over 100.

Majors in geology not taking the "set" professional course must, unless given special permission by the department, complete the following geology courses: 5 or 105, 6 or 106, 7 or 107, 101, 112 or 113, 121, 123, 124, 131, 132, 142—a total of 53 credits. A grade point average of 2.5 in all courses in geology shall be required of geology majors for graduation.

DEGREE: Bachelor of Science in Geology

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5	Chem. 23. Qual. Analysis....	5
Math. 4. Trigonometry.....	5	Math. 5. College Algebra....	5	Comp. 1. Composition.....	5
G.E. 1. Engin. Drawing.....	3	G.E. 2. Engin. Drawing.....	3	G.E. 21. Plane Surveying....	3
Elective.....	2	Elective.....	2	G.E. 3. Drafting Problems... 3	
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

SECOND YEAR

Geol. 5. Rocks & Minerals..	5	Geol. 6. Elem. Physiography	5	Geol. 7. Historical Geology..	5
Physics 1. General.....	5	Physics 2. General.....	5	Geol. 121. Mineralogy.....	5
Zool. 1. Elementary.....	5	Lit. 20. Sur. American Lit....	5	Comp. 2. Composition.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

THIRD YEAR

Geol. 123. Optical Mineralogy.....	5	Geol. 124. Petrography and Petrology.....	5	Geol. 125. Petrography and Petrology.....	5
Pol. Sci., Soc., Geog., or other Group 2 electives...	5	Geol. 130. Paleontology.....	5	Geol. 132. Invertebrate Paleontology.....	5
French or German.....	5	French or German.....	5	French or German.....	5

FOURTH YEAR

Geol. 101. History of Geol.	3	Geol. 126. Sedimentary Petrography.....	5	Geol. 190. Thesis.....	5
Pol. Sci., Soc., Geog., or other Group 2 electives...	5	Geol. 127. Ore Deposits.....	5	Geol. 122. Field Methods....	5
*Professional electives.....	7	Geol. 142. Structural Geol....	5	*Professional elective.....	5

*For those who desire to specialize in stratigraphical geology, the professional electives should include such courses as Mesozoic geology, Tertiary geology and stratigraphy. For petrological geology, courses in physical chemistry and quantitative analysis are essential, and for mining geology, courses in mining engineering, metallurgy and metallurgical analysis. For physiographic geology, courses in map interpretation, geomorphology and glacial geology are necessary.

A fifth year may be necessary for the completion of the above schedule, if all of the important professional electives are to be included.

The total number of credits must include Physical Education 15 for men, or Physical Education 4, 6, 8, or 10 for women.

Teaching Major or Minor in the College of Education

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
Geol. 5 or 105. Rocks and Minerals.....	5	Geol. 1. Introduction to Earth Science.....	5
Geol. 6 or 106. Physiography.....	5	Geol. 5 or 105. Rocks and Minerals.....	5
Geol. 7 or 107. Historical Geology.....	5	Geol. 6 or 106. Physiography.....	5
Geol. 112. Physiography of Eastern U. S.....	5	Approved electives.....	5
Geol. 113. Physiography of Western U. S.....	5	Minimum total.....	20
Approved electives.....	11		
Minimum total.....	36		

GERMANIC LANGUAGES AND LITERATURE

Curtis C. D. Vail, Executive Officer, 111 Denny Hall

DEGREE: Bachelor of Arts

Students becoming majors in this department should have had college German 1, 2, 3 plus three credits of second-year German, or the high school equivalent, to be determined by the executive officer of the department.

Departmental Requirements

	<i>Credits</i>
Ger. *4, 7, 10, 30. Second year work, about.....	5
Ger. 110, 111, 112. Grammar and Composition.....	6
Ger. 118. Phonetics.....	2
Electives.....	23
	36

*Two credits of this 5-credit course count toward a major or a minor.

For the major, the 23 credits must be chosen from the following list, to make a minimum total of 36: German 119, *History of the German Language*, 120, 121, 122, 123, 124, 125, 135, 137, 138, 139, 140, 141, 142, 143, 150, 152, 153, 165, 166, 167, 180, 181, 182.

At least 50 per cent of the credits in the major must be in upper division courses. Majors are not permitted to count scientific German, or courses in English translation.

Students preparing for library work may substitute literary courses in German (not courses offered in translation, however) in lieu of the departmental major requirements, German 110, 111, 112, 118. These latter are demanded of prospective teachers.

It is advised that the student distribute his major work over the entire college course, in order to avoid periods of disuse.

Teaching Major or Minor in the College of Education

For the major in the College of Education, the requirements are the same as for the major in the College of Arts and Sciences. For the minor at least seven credits must be chosen from the above list, to make a minimum total of 20.

Grades of "C" or above must be obtained in all required German courses; for a major, one-third of the grades in upper-division courses must be "B" or above.

All students who wish a major or minor recommendation in German must present Education 75L, the teachers' course. Students presenting a minor in German with a major in another foreign language may, with special permission, be excused from this requirement.

HISTORY

W. Stull Holt, Executive Officer, 306 Social Science Building

DEGREE: Bachelor of Arts

Departmental Requirements

Majors in history shall offer for the bachelor of arts degree 50 credits in history, of which at least 50 per cent must be in upper division courses. History 1-2, *Medieval and Modern European History*, are the only required courses.

Advanced Degrees. See Graduate School section, page 150, for general University requirements. For specific requirements, see Announcement of the Graduate School, available upon request.

Teaching Major or Minor in the College of Education

For the teaching major, a minimum of 50 credits in history is required, including History 1-2, 5-6, 72-73, and one sequence in American history (i.e., 57-58-59; 140-144; 147-148, or 149-150). The remaining credits are to be selected from upper division courses, of which five hours must be in American history.

For the teaching minor, a minimum of 25 credits in history is required, including History 1-2. The remaining credits are to be selected as follows: fifteen credits of upper division European history, including English; or 72-73 plus five credits; or fifteen credits of upper division American history including one sequence (i.e., 140-141; 144-145; 147-148, or 149-150).

HOME ECONOMICS

Effie I. Raitt, Director, 201 Home Economics Hall

Non-Professional Curricula

Two majors are offered: a *General Major*, for the degree of bachelor of science, and a *Textile, Clothing and Art Major*, for the degree of bachelor of arts. These require a total of 180 plus 5 physical education credits. The minimum requirements for the first two years are those established in the College of Arts and Sciences in curricula involving majors.

General Major. Students who anticipate graduate work and need a background of foreign language and extended work in the basic sciences may find the General Major best suited to their needs. Required Home Economics courses include the following: H.E. 12, 15, 25, 47, 107-108, 141, 144, 145, 181, 190, and their prerequisites.

Textiles, Clothing and Art Major: Required home economics courses include: H.E. 12, 25, 47, 112, 113, 114, 133, 144, 145, 181, and at least 10 credits from the following: H.E. 101, 102, 188, 189, 198. In addition, 30 credits in art are required. If the major interest is merchandising instead of designing, the director of the School should be consulted concerning substitution of courses in economics and business for equivalent art requirements.

Students who have not been accepted for a professional curriculum must have the permission of the instructor to enroll in the following courses: Educ. 75NA, 75NB, H.E. 123, 124, 160, 161, 175, 191.

Professional Curricula

(A minimum of 20 credits of language, literature, or history is required for graduation in all professional curricula. Application for admission to these curricula is required after completion of 75 credits.)

Teacher Training

Bachelor of Science in Home Economics

This curriculum requires the completion of 225 credits plus five quarters of physical education. Students may, with the consent of the Director, substitute ten credits in other subjects for home economics courses.

Students who do not intend to teach but wish to combine Home Economics and Social Work, or Home Economics and Journalism, may omit Education courses.

Students interested in home economics in business may, with the consent of the Director, substitute Speech 40, Journalism 130, and H.E. 126 for courses in Education.

Five years of college training are required for the three-year normal diploma, requisite for high school teaching in the State of Washington. Completion of the teacher-training curriculum in general home economics, together with the completion of the requirements for the three-year normal diploma, entitles a graduate to a certificate to teach vocational education in any high school which is subsidized by the federal government under the Smith-Hughes and George-Deen acts.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1.....	5	Comp. 2.....	5	Physiol. 7. Elementary.....	5
H.E. 7.....	2	Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5
Art 9.....	3	Elective in Language,		P.E. 6.....	2
Elective in Language,		Literature or History.....	5	Arch. 3.....	2
Literature or History.....	5	Physical Education.....	+	or	
Physical Education.....	+			Lang., Lit. or Hist. elective..	3
				Physical Education.....	+

SECOND YEAR

Physics 89..... 5	Physics 90..... 5	H.E. 25. Textiles..... 5
Chem. 135. Organic..... 4	Chem. 136. Organic..... 4	Psych. 1. General..... 5
H.E. 15. Food Preparation.. 5	H.E. 12. Costume Design... 5	N.Ed. 5. Home Nursing... 3
Physical Education..... +	P.E. 4..... 2	Educ. 1. Orientation..... 2
	Physical Education..... +	

THIRD YEAR

H.E. 107. Nutrition..... 5	H.E. 108. Nutrition..... 3	Bact. 101. General..... 5
H.E. 115. Food Preparation 3	H.E. 116. Food Preparation.. 5	H.E. 114. Costume Design... 3
H.E. 112. Costume Design.. 3	H.E. 113. Costume Design... 3	Zoology 17. Eugenics..... 2
E.B. 4. Survey..... 5	Soc. 1. Survey..... 5	Educ. 9. Psychology of Secondary Education.... 3
	or	
	Soc. 150. General Soc..... 5	

FOURTH YEAR

Educ. 70. Intro. to H.S.Pro- cedure..... 5	H.E. 181. Consumer Probs... 3	Educ. 75NA..... 3
H.E. 47. Home Furnishing.. 5	H.E. 145. Fam. Relationships. 3	H.E. 144. Income Mgmt.... 3
Soc. 112. The Family..... 5	Educ. 120. Educ. Sociol..... 3	H.E. 190. Child Care..... 5
	H.E. 141. Home Selection and Management..... 5	Educ. 60. Principles..... 3
		Educ. 90. Measurement.... 2

FIFTH YEAR

The following courses must be taken concurrently as a unit, in either autumn, winter, or spring quarter. The remaining thirty credits are elective.

	Credits		Credits
Educ. 71N-72N. Cadet Teaching.....	8	H.E. 195. Research.....	5
Educ. 30. State Manual.....	0	H.E. 148. Home Management House.....	2
(Electives to make a total of 225 credits)			

For secondary certification, fifteen quarter credits of contemporary social problems must be included. Courses in current history, political science, economics and sociology will satisfy this requirement.

Preferred electives: Language; Literature; History; Psychology 131, *Child Psychology*; S. W. 176, *The Rural Community*.

Students who have high school chemistry may substitute Chem. 137 for Chem. 135-136.

A teaching major in textiles and clothing is possible if the following Home Economics courses are chosen: 12, 25, 47, 112, 113, 114, 133, 144, 145, 148, 160, 161, 181, 188, 198, together with the following art courses: 5, 6, 9, 10, 11, 169, 170.

A teaching minor requires Home Economics 12, 25, 147, 112, 113, 114, and Art 9.

Institution Administration

Bachelor of Science in Home Economics

This curriculum requires the completion of 225 credits plus five quarters of physical education. Students may, with the consent of the Director, substitute ten credits in other subjects for home economics courses.

Students interested in home economics in business may, with the consent of the Director, substitute Speech 40, Journalism 130, and H.E. 126 for H.E. 121, 122, 123, 124, and 175.

Six months of supervised field work may be substituted for 30 credits of academic work in the institution administration curriculum during the fifth year. The University Commons and Residence Halls are operated under the supervision of the School of Home Economics. They are used as practice fields for students in institution administration.

FRESHMAN YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1.....	5	Comp. 2.....	5	Physiol. 7. Elementary.....	5
H.E. 7.....	2	Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5
Art 9.....	3	Lang., Lit., or Hist. elective	5	P.E. 6.....	2
Lang., Lit., or Hist. elective	5	Physical Education.....	+	Arch. 3.....	2
Physical Education.....	+			or	
				Lang., Lit., or Hist. elective	3
				Physical Education.....	+

SECOND YEAR

Physics 89.....	5	Physics 90.....	5	Bact. 101. General.....	5
Chem. 135. Organic.....	4	Chem. 136. Organic.....	4	H.E. 131. Clothing.....	2
H.E. 15. Food Preparation..	5	E.B. 1. Principles.....	5	E.B. 2. Principles.....	5
Physical Education.....	+	P.E. 4. Health Education....	2	Educ. 9. Psychology.....	3
				or	
				Educ. 70. H.S. Procedure....	5

THIRD YEAR

H.E. 107. Nutrition.....	5	H.E. 108. Nutrition.....	3	Chem. 144. Physiological....	5
H.E. 115. Food Preparation	3	H.E. 120. Adv. Food Prep....	3	H.E. 121. Institution Food	
H.E. 47. Home Furnishing..	5	Psych. 1. General Psychol....	5	Preparation.....	5
H.E. 144. Income Mgmt....	3	E.B. 62. Prin. of Accounting..	5	H.E. 181. Consumer Probs..	3
				H.E. 26. Institution Textiles.	3

FOURTH YEAR

Soc. 1. Survey.....	5	H.E. 123. Instit. Mgmt. I... 3		H.E. 191. Diet Therapy.....	3
or		Soc. 112. The Family.....	5	H.E. 175. Institution	
Soc. 150. General.....	5	H.E. 122. Institution		Equipment.....	3
H.E. 141. Home Selection		Purchasing.....	3	H.E. 190. Child Nutrition	
and Management.....	5	Elective.....	3	and Care.....	5
Educ. 75NB, Home Econ... 3				H.E. 145. Family	
H.E. 124. Inst. Mgmt. II... 3				Relationships.....	3

FIFTH YEAR

Electives.....	15	H.E. 196. Supervised		H.E. 197. Supervised	
		Field Work or		Field Work or	
		Electives.....	15	Electives.....	15

Preferred electives: See Teacher Training Curriculum.

Textiles, Clothing and Art

Bachelor of Arts in Home Economics

This curriculum requires the completion of 180 credits plus five quarters of physical education.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1.....	5	Comp. 2.....	5	Hist. 1. Med. & Mod.	
H.E. 7. Introduction to		Chem. 1. General.....	5	European History.....	5
Home Economics.....	2	Art 10. Design.....	3	Chem. 2. General.....	5
Art 9. Design.....	3	Art 5. Drawing.....	3	Art 11. Design.....	3
P.E. 10. Physical Educ....	5	Physical Education.....	+	Art 6. Drawing.....	3
Physical Education.....	+			Physical Education.....	+

SECOND YEAR

H.E. 25. Textiles.....	5	H.E. 12. Costume Design....	5	H.E. 47. Home Furnishing... 5	
Hist. 2. Med. & Mod.....	5	E.B. 4. Survey.....	5	Soc. 1. Survey of Sociology.. 5	
Elective.....	5	Elective.....	5	Arch. 3. Appreciation..... 2	
Physical Education.....	+	Physical Education.....	+	Elective.....	3

THIRD YEAR

H.E. 112. Costume Design... 3	H.E. 113. Costume Design... 3	H.E. 114. Costume Design... 3
Art 160. Costume Design... 2	Art 170. Costume Design... 2	Art 171. Costume Design... 2
Soc. 112. The Family... 5	H.E. 144. Income Mgmt... 3	Psych. 1. General... 5
Elective... 5	Elective... 7	Elective... 5

FOURTH YEAR

H.E. 181. Consumer Probs.. 3	H.E. 198. Historic Textiles... 3	H.E. 133. Hist. of Costume.. 5
Hist. 114. Culture of the Renaissance... 5	H.E. 145. Family Relationships... 3	Phil. 1. Introduction to Philosophy... 5
H.E. 188. Adv. Textiles... 3	H.E. 161. Adv. Costume Design and Construction.. 5	Elective... 5
H.E. 160. Adv. Costume Design and Construction. 5	Elective... 2	

A total of 30 credits in Art is required.

Preferred Electives: Art 20, 53, 54, 55, 62, 83, 101, 105, 126, 129, 157, 158, 159, 182, 183; H.E. 101, 102, 189; Botany 102; E.B. 106, 135.

Preferred Language: French.

Advanced Degrees

For general University requirements, see Graduate School section, page 150. For specific requirements, see Announcement of the Graduate School, available upon request.

Teaching Major or Minor in the College of Education

See Teacher Training curriculum, page 100.

JOURNALISM

Vernon McKenzie, Director, Lewis Hall

DEGREE: Bachelor of Arts

Admission. Students to qualify as third-year majors in journalism in the College of Arts and Sciences must complete 90 scholastic credits, including the lower division requirements of the college, plus the required six quarters in military or naval science and physical education. Students not having upper division standing may be admitted, on recommendation of the director, to upper division courses in the School of Journalism if they (1) are proficient in English composition and typing, (2) have had sound training in history, economics, politics, and sociology, and (3) have had not less than a year's experience in newspaper work or other professional writing. No other lower division students are allowed to enroll in upper division journalism courses. Credit toward graduation is not granted for newspaper work except when such work is done under the direct supervision of an accredited instructor.

Sixth Quarter Conference. Students planning to major in journalism must have a conference with a member of the School of Journalism faculty before being enrolled in Third Year Journalism. This will normally take place when the student is in his sixth quarter. The purpose of this conference is to discuss the aptitude of the student, not only for a major in journalism, but for following the specialized courses in journalism which he may decide to elect.

Transfers. Students planning to transfer with junior standing, from normal schools, junior colleges or from other universities, are strongly advised to communicate with the head of the Journalism school before registering. Only in exceptional cases will these transfer students be permitted to enroll during their first year on the University of Washington campus, in Third Year Journalism, which is a complete year's course which must be started in October and concluded the

following June. Transfer students are advised to take their non-journalism required and elective subjects during their first transfer year. They are advised to take the complete Third Year Journalism in their graduating year.

Graduation Date. Transfers and other students who take Third Year Journalism in their graduating year will not be awarded degrees formally until August. Because the Third Year Journalism comprehensive final examinations do not take place until the concluding week of Spring quarter it is not possible for the Journalism faculty to make returns to the Registrar's office in time to permit awarding of June diplomas. Such students, however, may participate in graduation exercises in June; their diplomas will be available at the end of the summer quarter.

Journalism Curriculum. From the beginning of the freshman year a specific curriculum of studies is required of students expecting to major in journalism. Courses in the profession of journalism, the newspaper and society, news writing and contemporary affairs are open to lower division students. Entrance to Third Year Journalism is granted on ability shown by the individual in these courses to do newspaper work successfully.

Typewriting. All written work in the School of Journalism must be done on a typewriter. Students who have not had one semester of typing in high school must present credentials from a business college showing they are capable of making an average speed of 45 words per minute on the typewriter.

Graduation. The curriculum of the School of Journalism leads to the degree of bachelor of arts for which 180 credits must be obtained, plus five quarters in physical training and six quarters of military or naval science. Thirty-seven of these credits must be in required upper-division journalism and seven in prescribed lower-division pre-journalism. An average class grade of "B" or better must be earned in all journalism subjects. At the discretion of the journalism faculty, any student not maintaining this grade may be dropped as a journalism major.

A student holding a bachelor's degree from a recognized college or university may, with the consent of the director of the School, take Third Year Journalism. This work cannot be counted toward an advanced degree.

Students transferring to the University of Washington with less than 90 quarter credits will be held rigidly to the requirements specified in the journalism curriculum. Students transferring with 90 or more quarter credits (that is, upper division standing) may be exempted from certain requirements—other than those specified by the University for the degree in the College of Arts and Sciences—on application to, and at the discretion of, the director of the School of Journalism.

Graduate Study. Advanced degrees are not given in journalism, but a minor in journalism, toward the Master of Arts degree, may be arranged by agreement with the departments of history, economics, political science, sociology and English.

CURRICULUM

Requirements for the degree of bachelor of arts, major in journalism, are scheduled below. A student seeking this degree is required to take the College of Arts and Sciences lower division requirement; seven credits of specified pre-journalism; 37 credits of additional journalism; 30 credits of English; and 20 credits in one of the fields of sociology, political science, psychology, history, geography or economics. By special arrangement with the heads of the departments concerned, a student may elect his "secondary minor" in a field other than these six above specified. If a student so desires he will find it possible to elect more than one "secondary minor," although only one is required.

Freshman Registration

Freshmen planning to enter the School of Journalism will register for the first year schedule given below. Thirty-seven credits are required and 10 credits of science must be selected from Group III. (By special arrangement certain geography courses may be substituted for a laboratory science elective.)

FIRST YEAR—Required

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1.....	5	Lit. 64.....	5	Lit. 65.....	5
Geog. 7.....	5	Psych. 1.....	5	E.B. 1.....	5
Journ. 1.....	5	Pol. Sci. 1.....	5	Elective science.....	5
Elective Science.....	1	Journ. 2.....	1	M.S. and P.E. or N.S.....	+
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+		
	16+		16+		15+

SECOND YEAR—Requirements (25 credits), and suggested electives (20 credits)¹

<i>Credits</i>	<i>Credits</i>
†Journ. 51. Preliminary News Writing.....	5
Journ. 91, 92. Contemporary Affairs.....	2
†Soc. 1. ² Survey of Sociology.....	5
Soc. 55. Human Ecology.....	5
Soc. 66. Group Behavior.....	5
Psych. 2. Psychology of Adjustment.....	5
Pol. Sci. 61. Municipal Government.....	5
Pol. Sci. 71. Great Personalities: Continental Europe.....	3
†Hist. 2. Medieval & Mod. European History.....	5
Hist. 5. English Pol. & Social History.....	5
Hist. 57-58-59. American History from 1607 to the Present Time.....	3
Hist. 155. Social & Econ. History of Canada.....	5
†E.B. 2. Principles of Economics.....	5
E.B. 54, 55, 56. Business Law.....	3
E.B. 100. Statistical Analysis.....	5
†Speech 38. ³ Essen. of Argumentation.....	5
or	
†Speech 40. ³ Essentials of Speaking.....	5
Speech 41. Advanced Speaking.....	3
Speech 43. The Speaking Voice.....	3
Drama 51, 52, 53. Elementary Acting.....	2
Lit. 58. Introduction to Fiction.....	5
Lit. 97, 98, 99. The Bible as Literature.....	2
L.A. 1. Intro. to Modern Thought.....	5
L.A. 11. Intro. to Study of Fine Arts.....	5
Art 9, 10, 11. Art Structure.....	3
Music 72, 73, 74. Music Lit. and History.....	2

NOTES:

E.B. 1 is hyphenated. Students are required to take E.B. 2 in sophomore year.

Science requirements, 10 credits, are elective. Two laboratory sciences are strongly recommended. A student may not elect more than five credits of non-laboratory science.

A modern foreign language "deficiency" must be cleared up in the sophomore year, except by special arrangement.

P.E. 10 and P.E. 15 must be taken by all students. P.E. 10 (for women) 5 credits, should be substituted in freshman year for one elective science. If not taken in freshman year, it must be taken as early as possible in sophomore year. P.E. 15 (for men) may be taken in third quarter of freshman year; if not then taken, it must be included in sophomore schedule as early as possible in that year.

†Courses so marked are required. Select your courses with your minor field in mind. If possible, take 10 credits (of the required 20) of your minor field during your freshman and sophomore years. In any event, not more than 15 credits of the minor may be deferred until the fourth year.

¹ In making up schedules students should also refer to Descriptions of Courses section, page 160, for listing of other courses.

² Soc. 1 or Soc. 150 will fulfill this sociology requirement. If taken in sophomore year, it will be Soc. 1; if taken in senior year, Soc. 150. Soc. 150 may not be taken by students who have had Soc. 1.

³ Speech requirements may be fulfilled by either 38 or 40. It should be kept in mind that Speech 40 is the prerequisite for several upper division speech subjects.

A student graduating from the School of Journalism must have a total of 30 credits in English, of which 20 (as noted above) are required. Suggestions for additional courses are listed above, as well as below.

THIRD YEAR—Non-elective

Journ. 147-148; 149-150-151; 152-153-154.

Pre-journalism students completing 90 scholastic credits, and passing their sixth quarter staff conferences, may then register for the non-elective Third Year. The Third Year starts at the beginning of the autumn quarter and concludes at the end of the spring quarter.

Pre-journalism students who have completed a minimum of 80 scholastic credits may apply and, if grades are sufficiently high, be permitted to register for the above non-elective year's work.

In the third year no grades or credits will be awarded to students doing satisfactory work until the end of the year. (For purposes of fraternity and sorority records, extra-curricular activities, etc., any student presenting a grade card will receive either a "Satisfactory" or "Unsatisfactory" thereon.) At the end of each quarter students whose work as journalism majors is unsatisfactory will be awarded grades ("C", "D" or "E") and such journalistic credit as they may have earned.

They must then arrange with their advisers in the College of Arts and Sciences to choose another major.

Majors in journalism in the Third Year will take their regular quarter examination in Geog. 102, and be awarded their grades in the usual way.

Majors in journalism in the Third Year will take a comprehensive examination, written and/or oral, covering seven days, during the final week of the spring quarter. Those receiving "A" or "B" grades will be eligible to continue toward their degrees, with a major in journalism. Those falling below "B" will be forced to change their major field. Credit, however, will be given in the latter case as well as in the former.

Students who fail to make the grade standing required in the Junior Journalism year may not repeat the course a subsequent year, except by permission of the director of the School of Journalism.

FOURTH YEAR—Wholly Elective

Advertising Sequence^a

	Credits
Journ. 130. Fundamentals of Advertising	5
Journ. 131. Display Advertising	5
Journ. 132. Advertising Typography	5
Journ. 201. Propaganda	5
Soc. 150. ³ General Sociology	5
Soc. 194. Public Opinion	3
Speech 161-162-163. Radio Speech	2
Speech 188. Advanced Problems in Speaking	5
E.B. 100. Statistical Analysis I	5
E.B. 106. Economics of Marketing and Advertising	5
E.B. 134. Wholesaling	5
E.B. 135. Retailing	5
E.B. 136. Advertising	5
E.B. 193 A, B, C. Problems of Wholesaling, Retailing and Advertising	5

General Sequence^b

	Credits
Journ. 171-172. Magazine and Feature Writing	3
Journ. 173, 174-175. Short Story Writing	5
Journ. 201. Propaganda	5
Drama 111, 112, 113. Playwriting	5
Psych. 117. Superstition and Belief	2
Psych. 118. Social Psychology	5
Psych. 122. Thinking and Voluntary Action	2
Psych. 126. Psychology of Maladjustment	5
Soc. 150. ³ General Sociology	5
Hist. 124. Economic History of Europe Since the Industrial Revolution	5
Hist. 131. Europe Since 1870: The War and Its Backgrounds	5
E.B. 103. Money and Banking	5
E.B. 175. Business Fluctuations	5
Journ. 225, 226, 227. ⁸ Advanced Short Story Writing	2 to 4

Editorial Sequence^c

	Credits
Journ. 90, 91, 92. ⁷ Contemporary Affairs	2
Journ. 150. Editorial Writing	3
Journ. 191, 192, 193. Advanced Journalism	2
Journ. 199. Problems of Journalism	2 to 4
Journ. 201. Propaganda	5
Soc. 150. ³ General Sociology	5
Speech 161-162-163. Radio Speech	2
Soc. 194. Public Opinion	3
E.B. 103. Money and Banking	5
E.B. 175. Business Fluctuations	5

³ Soc. 1 or Soc. 150 will fulfill this sociology requirement. If taken in sophomore year it will be Soc. 1; if taken in the senior year, Soc. 150. Soc. 150 may not be taken by students who have had Soc. 1.

^a The advertising sequence is designed primarily for those who plan to go into general advertising, newspaper advertising or agency work.

^b The general sequence is designed primarily for those who plan to go into radio continuity work; into magazine work; into publicity work; or into free lance writing.

^c The editorial sequence is designed primarily for those who plan to go into daily or weekly newspaper, editorial and reportorial work, or into one of the press services.

⁷ Journ. 90, 91 and 92 may each be taken for credit more than once, as the subject matter changes each quarter.

⁸ Journ. 225, 226 and 227 are graduate courses, and may not be taken in the fourth year except by an exceptional student who may have taken 173, 174-175, by special permission, in the sophomore year; or by a student who may have attained professional status.

Psych. 117, *Superstition and Belief*, two credits, Soc. 194, *Public Opinion*, three credits, and Journ. 201, five credits, may be included either under sociology or psychology, as well as under journalism.

Minor Fields

A minimum of 20 credits will be required to complete the work in a Minor Field. The Minors recommended are: sociology, psychology, political science, geography, history or economics. For guidance of journalism students the following sequences in the Minor Fields are suggested:

Sociology: †1, 2, 55, 66, 112, 165, 194.

Psychology: †1, 2, 112, 117, 118, 122, 126.

Political Science: †1, 61, 71, 113, 126, 152, 157.

Geography: †7, 103, 104, 105, 106, 111, 155.

History: †2, 5, 10, 57-58-59, 124, 131.

Economics and Business: †1-2, 103, 171, 172, 175.

Teaching Major or Minor in the College of Education

Major students in education who have had Jour. 1, 2, and 51, as prerequisites may obtain a major in journalism by completing the work in Third Year Journalism. An average class grade of "B" or better must be earned in all journalism subjects by education students majoring in journalism.

Minor in Journalism. Students wishing to minor in journalism must include the following courses in their minor: Jour. 1, 2, 51, 150, plus a minimum of ten credits of electives to be selected from the sophomore and senior courses in the School of Journalism.

LIBRARIANSHIP

See School of Librarianship Bulletin, available upon request. For Pre-library requirements, see page 123.

Requirements for Teacher-Librarians

State standards for library work in accredited high schools divide the schools into five classes: Class 1 covering schools with enrollment of 100 or less; Class 2, 100 to 200; Class 3, 200 to 500; and Classes 4 and 5, over 500.

Applicants for the normal diploma desiring to qualify for library work in accredited high schools of the fourth and fifth classes may take a fifth year in the School of Librarianship. Consult with advisory officers of both departments.

Teacher-librarians in accredited high schools of 100 or less (Class 1) must have at least 7½ credits in librarianship.

Teacher-librarians in accredited high schools of 100 to 200 (Class 2), and of 200 to 500 (Class 3) must have at least 15 credits in librarianship.

Teacher-librarians in accredited high schools in Class 4 (500 to 1000) and Class 5 (over 1000) are recommended to have one year's preparation in an approved library school.

Teaching majors who wish to offer librarianship as a minor must have 18 credits.

†Courses so marked are required. Select your courses with your minor field in mind. If possible, take 10 credits (of the required 20) of your minor field during your freshman and sophomore years. In any event, not more than 15 credits of the minor may be deferred until the fourth year.

COURSES OPEN TO TEACHER-LIBRARIANS IN AUTUMN, WINTER, AND SPRING

	<i>Credits</i>
Lib. 170. Introduction to Children's Work.....	autumn, winter 3
Lib. 175. Cataloging, Classification, Subject Headings.....	autumn, spring 4
Lib. 177. Bibliography and Reference.....	autumn, spring 3
Lib. 182. School Library Administration.....	autumn, winter, spring 3
Lib. 184. Cataloging, Classification, Subject Headings.....	winter 3
Lib. 195. Book Selection for High School Libraries.....	autumn, winter, spring 3

MATHEMATICS

A. F. Carpenter, Executive Officer, 147 Philosophy Hall

DEGREE: Bachelor of Arts or Bachelor of Science

For a major in mathematics the following courses in mathematics are required.

Prerequisite, $\frac{1}{2}$ unit advanced algebra, $\frac{1}{2}$ unit solid geometry in high school or university.

	<i>Credits</i>
4. Plane Trigonometry.....	5
5. College Algebra.....	5
6. Analytical Geometry.....	5
107, 108, 109. Differential and Integral Calculus.....	15
Electives (upper division).....	12
Minimum total credits.....	42

Students planning to elect any of the above courses subsequent to course 31 must consult the department before registering.

DEGREES: Bachelor of Science in Mathematics

Bachelor of Arts in Mathematics

Minimum requirements for the degree of Bachelor of Science in Mathematics. In addition to the regular University requirements in English composition, physical education and military or naval science, the student shall earn the indicated number of credits in the following groups:

<i>Subjects</i>	<i>Credits</i>
Mathematics, an academic major plus eight approved U.D. credits.....	50
Physics, chemistry.....	15
Astronomy, geology, zoology, botany.....	15
Language†, literature, art, architecture, music.....	15
History, political science, economics, sociology, psychology, philosophy.....	15

†Students who expect to proceed to graduate work in mathematics should acquire a reading knowledge of both German and French.

Minimum requirements for the degree of Bachelor of Arts in Mathematics. The same as above, except that a minimum of 15 credits in science (physics, chemistry, astronomy, geology, zoology, botany) is allowed; and the preponderance of the student's credits, including mathematics, should be in liberal arts courses.

The foregoing requirements can be met in a great variety of ways, depending upon the student's high school preparation and his individual needs.

Teaching Major or Minor in the College of Education

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
4. Plane Trigonometry.....	5	4. Plane Trigonometry.....	5
5. College Algebra.....	5	5. College Algebra.....	5
6. Analytical Geometry.....	5	6. Analytical Geometry.....	5
107, 108, 109. Diff. & Integral Calculus.....	15	U.D. Electives in Mathematics.....	10
Approved Electives in Mathematics.....	15		
Minimum total.....	45	Minimum total.....	25

The above schedule is based upon the assumption that the student has had one and one-half years of algebra, and one year of plane geometry, or one year of plane and one-half year of solid geometry before entering the University. If a student has not had the third one-half year of algebra in high school, Math. 1 must be elected during the freshman year in addition to the above schedule. If the student has not had solid geometry, he should take Math. 2 in addition to the above schedule.

Mathematics 1 can be taken concurrently with Mathematics 4; Mathematics 2 can be taken concurrently with 4, 5, 6, 107, and 102.

Mathematics 11 will not count toward a teaching major or minor.

Students who select mathematics as an academic major or minor must earn a grade of "C" or higher in a total of 45 and 25 hours respectively, exclusive of courses 1 and 2.

MUSIC

Carl Paige Wood, Director, Music Building

DEGREES: Bachelor of Arts in Music

Bachelor of Arts—Elective Curriculum

General Information

The School of Music offers three types of service: (1) cultural courses and participation groups for students in other fields; (2) a four-year curriculum for those who wish to major in music with a broad background in liberal arts; (3) professional training for those planning to be executants, teachers or composers.

Students who intend to major in music must show proficiency on some instrument. If this instrument is not the piano, a practical knowledge of the piano keyboard must be acquired. High school music courses are not required for entrance to the School of Music, but their election in schools where they are adequately taught may make it possible to enter more advanced courses in the University. Modern language, history, and literature are desirable high school electives for students intending to major in music.

The equivalent of the second year, first semester of the state course of study for high school credits in piano, or Music 9AX, is required of all music majors. Freshmen deficient in piano may be admitted by demonstrating proficiency on other approved instruments, but must arrange to make up the deficiency immediately as a prerequisite to courses in harmony. For this purpose, elementary piano instruction is offered in classes at a small fee.

Freshmen will not ordinarily be given advanced credits in music, but will substitute other approved courses for those omitted.

Students other than freshmen whose training and proficiency in music, gained before entering the University, may warrant advanced standing, must make application during their first quarter of residence. In no case will more than 18 credits in vocal or instrumental music be allowed students entering with advanced standing.

Classification of Courses

I. Materials and Composition

- | | |
|--------------------------------------|---|
| 14, 15, 16. Fundamentals | 117, 143, 157, 197. Composition and Orchestration |
| 46, 51, 52, 53, 101. Harmony | |
| 109, 112, 163. Counterpoint and Form | |

II. Music Literature and History

- | | |
|--|-------------------------------|
| 21, 22, 23, 24. Courses for non-majors | 151, 152, 153. Modern Music |
| 72, 73, 74. General Music History | 160. Song Literature |
| 104, 105, 106. Music since 1850 | 190, 191, 192. Senior Courses |
| 127, 128. Choral Literature | 198. Musicology |
| 145. Church Music Literature | |

III. Music Education

- | | |
|----------------------------------|-------------------------------|
| 40, 42. Orchestral Instruments | 165, 166, 167. Piano Pedagogy |
| 113, 116, 154, 155. School Music | |

IV. Choral Ensembles

- | | |
|-------------------------------|-------------------------------------|
| 10, 11, 12. University Chorus | 80, 81, 82. University Choir |
| 65, 66, 67. Glee Clubs | 129. Contemporary Choral Literature |

V. Instrumental Ensembles

- | | |
|---------------------------------|-----------------------------------|
| 30, 31, 32. Elementary Band | 130, 131, 132. Concert Band |
| 37, 38, 39, 139. Piano Ensemble | 133, 134, 135. Symphony Orchestra |
| 43. Orchestral Literature | 138. Accompanying |
| 124, 125, 126. Chamber Music | |

VI. Conducting

- | | |
|-----------------------------|----------------------------|
| 136, 195. Choral Conducting | 180. Orchestral Conducting |
|-----------------------------|----------------------------|

VII. Vocal and Instrumental Music

- | | |
|--|---|
| 1, 2, 3, 7, 8, 9. Group Instruction | 60, 62. Advanced Orchestral Instruments Classes |
| 18, 19, 20, 48, 49, 50, 68, 69, 70, 118, 119, 120, | 199. Senior Recital |
| 168, 169, 170. Individual Instruction | |

VIII. Courses for Graduates

- | | |
|----------------------------|---|
| 201, 202, 203. Composition | 207, 208, 209. Thesis |
| 204, 205, 206. Research | 218, 219, 220. Vocal and Instrumental Music |

Organizations and Activities

The courses in choral and instrumental ensemble are open to any student in the University who can qualify, and may be taken for credit or participated in as activities. Auditions are held during the first week of the autumn quarter.

The choral organizations are the University Chorus, the Men's Glee Club, the Women's Glee Club and Ensemble, the A Cappella Choir and the Madrigal Singers.

The instrumental organizations include the University Orchestra, the Concert Band, the Marching Band and smaller units such as string quartets.

Concerts and Student Recitals

In addition to the concerts given by the various ensemble organizations, the School of Music schedules a number of student recitals which provide opportunity for individual public performance. All music students are urged to attend these recitals.

The University Broadcasting Studios make it possible for students to study recordings of their own performances and to appear on occasional public broadcasts.

CURRICULA

In addition to the required music courses, all music majors must satisfy the University requirements in Physical Education, Military Science and English Composition. Not less than twenty credits must be earned in Group II of the College of Arts and Sciences, and ten credits (including Physics 50) in Group III.

Each student who registers for Music 14, 15, or 16 (Fundamentals) is given a placement examination at an early meeting of the class. As a result of this examination he may be required to change his registration, either to make up deficiencies or to enter a more advanced class.

Prescribed Curricula—Required Music Courses

Bachelor of Arts in Music

A total of eighteen credits must be earned in ensemble courses, so distributed that not less than six are in choral groups and six in instrumental groups. An ensemble course may be repeated once with credit.

The total required in vocal or instrumental music varies from eighteen to thirty-six credits, according to the major chosen.

<i>First Year</i>	<i>Credits</i>	<i>Second Year</i>	<i>Credits</i>
Music 15, 16. Fundamentals.....	5	Music 52,* 53, 101. Harmony.....	13*
Music 40, 42. Orchestral Instruments.....	6	Music 72, 73, 74. History and Literature.....	8
Music 46, 51. Harmony.....	6	Music 109. Counterpoint.....	5
Vocal or Instrumental Music.....	6-9	Music 127. Choral Literature.....	2
Ensemble.....	3-6	Vocal or Instrumental Music.....	6-9
		Ensemble.....	3-6
		Physics 50. Sound.....	5

*Students receiving a grade of "A" or "B" in Music 51 are exempt from Music 52.

After the first two years the requirements are as follows:

I. Major in Vocal or Instrumental Music

A student must show marked talent for performance before proceeding further. Of the 36 credits required in Vocal or Instrumental Music, 30 must be in the major branch (e.g., piano) in addition to the Senior Recital (Music 199). No course below Music 48 may be included in these 30 credits.

<i>Credits</i>	<i>Credits</i>
Music 104, 105, 106.....	6
Music 112, 117, 157.....	15
Music 151, 152, 153.....	6
Vocal or Instrumental Music.....	total 36
Music 199. Senior Recital.....	2
Ensemble.....	total 18
Philosophy 129. Aesthetics.....	5

Voice majors take Music 160, Literature 57, ten credits of German and ten credits of either French or Italian. The requirement in Group II is reduced from twenty credits to ten.

Piano majors take Music 138, 139, 165, 166, 167.

Organ majors take Music 145 and 163.

II. Major in Music Education

A grade point average of 2.5 must be maintained with no grade lower than "C" in any required music course.

As a prerequisite to cadet teaching, students must demonstrate proficiency in piano and voice equivalent to Music 9AX and 9CX. For this purpose tests will be given during the junior year.

Music 104, 105, 106, 151, 152, 153.....	any 4	Ensemble.....	total 18
Music 112 and 128.....	7	Education 1, 9, 30, 70, 60, 90	
Music 113, 116, 154.....	10	(Education 1 should be taken in the	
Music 117, 190, 191, 192, 195.....	at least 5	second year).....	15
Music 136 and 180.....	6	Psychology 1.....	5
Vocal or Instrumental Music.....	total 18		

The Bachelor of Arts in Music degree will be awarded upon completion of the foregoing requirements.

To qualify for the state teacher's certificate it is desirable to choose, not later than the junior year, a teaching minor in an academic subject. The three-year teacher's certificate will be awarded upon satisfactory completion of 45 additional credits including the following requirements:

Music 155.....	3	Vocal or Instrumental Music.....	6
Music 117, 190, 191, 192, 195.....at least	5	Education 71, 72, 120.....	11

The total of 225 credits must include 15 credits in contemporary social problems. Courses in current history, political science, economics and sociology will satisfy this requirement.

III. Major in Composition

Music 104, 105, 106.....any	4	Music 190, 191, 192.....	9
Music 112, 117, 143, 157, 163, 197.....	31	Vocal or Instrumental Music.....total	18
Music 136, 180.....	6	Ensemble.....total	18
Music 151, 152, 153.....any	4	Philosophy 129. Aesthetics.....	5

In addition to the foregoing three curricula leading to the degree of Bachelor of Arts in Music, the School of Music offers a broader non-professional curriculum leading to the degree of Bachelor of Arts.

Elective Curriculum in Music

Bachelor of Arts

The minimum requirements for the first two years include twenty credits in Group II of the College of Arts and Sciences and ten credits in Group III.

At least 60 of the total 180 credits shall be in upper division courses.

Music Fundamentals and Harmony.....	16	Ensemble.....	6
Music History and Literature.....	18	*Music Electives.....	12

*Major students in this curriculum will be given an examination in vocal or instrumental music not later than the end of their second year, and may be required to take additional work in this field.

Teaching Major or Minor in the College of Education

Students in the College of Education with a major or minor in music must satisfy the requirements of Music 15, 16, 46, 72.

In every required music course a grade of "C" or better must be earned.

Proficiency in piano and voice equivalent to Music 9AX and 9CX must be demonstrated during the junior year.

Majors in music must take cadet teaching in music (Education 71-72).

<i>Major</i>		<i>Minor</i>	
		(For non-music majors)	
	<i>Credits</i>		<i>Credits</i>
Music 51, 53. Elementary Harmony.....	9	Music 40 or 42. Orchestral Instruments.....	3
Music 40, 42. Orchestral Instruments.....	6	Music 51, 53. Elementary Harmony.....	9
Music 73, 74. Music Literature & History.....	6	Music 113. Elementary School Music.....	5
Music 101. Advanced Harmony.....	5	or	
Music 113. Elementary School Music.....	5	Music 116, 154. High School Music.....	5
Music 116. Junior High School Music.....	3	Music 127. Choral Literature.....	2
Music 127, 128. Choral Literature.....	4	Music 136. Technique of Conducting.....	3
Music 136. Technique of Conducting.....	3	Music 180. Orchestral Conducting.....	3
Music 154. Senior High School Music.....	2	or	
Music 155. Music Supervision.....	3	Music 195. Orchestral Conducting.....	3
Music 180. Orchestral Conducting.....	3	Vocal and Instrumental Music.....	6
or		Minimum total.....	31
Music 195. Choral Conducting.....	3		
Vocal and Instrumental Music.....	12		
Minimum total.....	61		

<i>Minor</i>	
(For majors in Music)	
	<i>Credits</i>
Music 109. Counterpoint.....	5
Music 112. Musical Forms.....	5
Music 117. Composition.....	5
Music 104, 105, 106, 151, 152, 153, 192, Modern Music.....	6
Minimum total.....	21

NURSING EDUCATION

Elizabeth Soule, Director, Nursing Education Building

Admission Requirements

Basic and advanced courses in nursing require full matriculation in the College of Arts and Sciences, subject to its admission requirements.

Students in basic nursing curriculum "A" seeking affiliation for professional instruction are subject to the entrance requirements of the hospital division selected. A limited number of basic students will be admitted to the Harborview division in any one quarter.

Entrance requirements for the one-year preliminary hospital course are high school graduation and recommendation of the hospital superintendent of nurses.

Students in post-graduate nursing curricula such as public health and nursing supervision must be graduates of approved hospitals having a daily patient average of 50, and with services in the four major fields: obstetrics, medicine, surgery, and pediatrics. A deficiency in one of these basic services may be made up through post graduate work in an institution offering a course approved by the University of Washington. These students must supply a transcript of their record and recommendations from their schools of nursing together with evidence of their professional registration in the State of Washington.

Correspondence relative to affiliation for institutional or field work should be addressed to the School of Nursing Education, University of Washington, and should specify the institution in which the applicant is interested.

Health. Students in basic and advanced nursing courses must be in sound physical and mental condition upon entrance. Recommendations for entrance to professional divisions will not be given without evidence as to the state of the applicant's health. The University Health Service has general supervision over the health of all students. Nursing Education students are required to have a special health examination, tuberculin test, and inoculations for smallpox, typhoid, and diphtheria before hospital entrance or field practice. Any defects which can be corrected must be cared for by the student at her own expense. Serious physical defect will bar the student from entrance or may terminate her course at any time on recommendation of the Health Service.

A second physical examination is made by the affiliating hospital before accepting the student. Medical care and health service, including infirmary care not to exceed two weeks at any one time is provided by the affiliating hospital for students in residence. Hospitalization is given only in emergency and is subject to institutional rule. No responsibility is assumed in case of illness arising from defects which existed on entrance. Students must request and receive all types of medical care through the nursing office, or must sign a release of the hospital from any responsibility.

Expenses

Student Expenses: The student in the School of Nursing Education must plan to finance her complete course. She must maintain herself and pay tuition and personal expense during all periods of campus residence. While in the hospital divisions she receives maintenance in the nurses' residence, but must provide her own uniforms, text-books and special supplies.

Basic students receive no salary for nursing service but their University tuition is paid through the hospital division student education funds.

For post-graduate nurses where professional service is rendered of value exceeding educational program offered in return, salary may be graded according to type of maintenance, service and course. Adjustment is subject to institutional, educational and professional regulations. Post-graduate students provide their own uniforms, textbooks, and special supplies and pay their own University tuition.

CURRICULA

Students entering the School of Nursing Education may take up curricula in one of three main groups:

- I. Basic courses leading to the degree of Bachelor of Science in Nursing.
- II. Courses for Graduate Nurses:
 - a. Leading to the degree of Bachelor of Science in Nursing
 - b. Leading to the certificate in Public Health Nursing
 - c. Leading to the certificate in Nursing Supervision
- III. Courses leading to the degree of Master of Science or Master of Nursing

Group I. Basic Courses

CURRICULUM A

Quarters in Campus Division

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 89. Home.....	5	Physics 90. Home.....	5	Chem. 2 or 22. General.....	5
Comp. 4. Composition.....	3	Comp. 5. Composition.....	3	Anat. 100. General Human.....	3
N.Ed. 1. History.....	3	Chem. 1 or 21. General.....	5	Home Econ. 9 Nutrition.....	6
Psychology 1. General.....	5	Elective.....	3	Elective.....	2
Physical Education.....	1	Physical Education.....	1	Physical Education.....	1
Chem. 137. Organic.....	5	Bact. 102. Sanitary and Clinical Methods.....	5	Home Econ. 105. Advanced Nutrition.....	5
Bact. 101. General.....	5	or		Soc. 1. Introduction.....	5
Physiology 53. General.....	5	Bact. 103. Public Hygiene.....	5	Elective.....	5
Physical Education.....	1	Anat. 101. General Human.....	3		
		Physiology 54. General.....	5		
		Elective.....	2		
		Physical Education.....	1		

Quarters in Hospital Division

N.Ed. 50. Elem. Nursing... 5	N.Ed. 60. Med. Nursing.... 3	N.Ed. 61. Med. Nursing Specialties..... 3
N.Ed. 51. Case Study..... 1	N.Ed. 70. Surgical Nursing... 3	N.Ed. 71. Surgical Nursing Specialties..... 3
N.Ed. 52. Introduction to Hospital Practice..... 6	N.Ed. 62. Medical Nursing Practice..... 6	N.Ed. 66. Preventive Med.... 2
Anat. 105. Pathology..... 3	Phar. 61. Therapeutics..... 3	N.Ed. 72. Surgical Nursing... 6
Phar. 51. Elementary..... 2		
N.Ed. 76. Otolaryngology and Ophthalmology..... 2	N.Ed. 86. Principles of Obstetrical Nursing..... 5	N.Ed. 80. Principles of Pediatric Nursing..... 5
N.Ed. 64. Special Therapy.. 2	N.Ed. 75. Outpatient Nursing Practice..... 6	N.Ed. 73. Operating Room Practice..... 6
N.Ed. 101. Intro. P.H. Nurs. 2		
N.Ed. 65. Special Therapy Practice..... 6		
N.Ed. 82. Pediatric Nursing Practice..... 6	N.Ed. 100. Prof. Problems... 2	N.Ed. 90. Psychiatric Nurs. 5
Elective..... 3	N.Ed. 88. Obstetrical..... 6	N.Ed. 92. Psych. Nurs. Prac. 6
	Elective..... 2	Elective..... 3
	N.Ed. 68. Communicable Disease Nursing Practice.. 6	

Twenty elective credits must be taken in Group I or II of College of Arts and Sciences Curricula.

CURRICULUM B

A selected course not meeting the complete curriculum requirements for the degree of bachelor of science in nursing is offered for students of hospital schools wishing the cooperation of the University in a one-year preliminary nursing course. On completion of this preliminary course and the hospital course, which grants lump credits, the student receives junior standing in the University toward the degree of bachelor of science in nursing under curriculum A in group II.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 4. Composition.....	3	Comp. 5. Composition... ..	3	Chem. 2 or 22. General.....	5
N.Ed. 1. History.....	3	Chem. 1 or 21. General.....	5	Home Econ. 9. Nutrition.....	6
Psychology 1. General.....	5	Soc. 1. Survey.....	5	Physiol. 53. Human.....	5
Elective.....	5	Elective.....	2	Physical Education.....	1
Physical Education.....	1	Physical Education.....	1		
		<i>Summer Quarter</i>	<i>Credits</i>		
		Physiol. 54. Human.....	5		
		Anat. 100. Anatomy Lectures	3		
		Anat. 101. General Human...	3		
		Bact. 101. General.....	5		

Group II. Curricula for Graduate Nurses
CURRICULUM A

The University offers this course to enable the graduate nurse to broaden her scientific and cultural background and prepare for advanced professional work. It allows the student a choice of her electives in the fields of public health nursing, nursing administration, or nursing education, and grants the degree of bachelor of science in nursing.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition.....	5	Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5
Psychol. 1. General.....	5	Comp. 2. Composition.....	5	E.B. 4. Survey.....	5
Elective.....	5	Elective.....	5	Elective.....	5

SECOND YEAR

Physiol. 53. Human.....	5	Physiol. 54. Human.....	5	Home Econ. 105 or 106....	5
Elective.....	10	N.Ed. 150.....	5	Elective.....	10
		Soc. 1. Survey.....	5		

THIRD YEAR

Bact. 101. General.....	5	Bact. 102. Sanitary and Clinical Methods.....	5	Bact. 103. Public Hygiene...	5
N.Ed. 167. Prin. P.H.N....	3	N.Ed. 168. Spec. Flds. P.H.N....	5	Soc. 31. Social Statistics....	5
N.Ed. 169. Pub. Health....	3	and		Elective.....	5
N.Ed. 151. Administration..	5	N.Ed. 104. Epidemiology....	2		
Elective.....	5	or			
		N.Ed. 152. Supervision.....	5		
		Elective.....	5		

CURRICULUM B**Leading to Certificate in Public Health Nursing**

This course includes five quarters of academic work at the University and one quarter of field work, or four quarters of academic work and two quarters of field work, depending upon the experience the individual student has had in the public health nursing field.

	<i>Credits</i>		<i>Credits</i>
N.Ed. 167. Prin. Pub ic Health Nursing.....	3	*N.Ed. 112. Advanced Fie d Work.....	12
N.Ed. 169. Public Health.....	3	N.Ed. 113. Readings in Specialized	
N.Ed. 104. Epidemiology.....	2	Fields of Public Health Nursing.....	2
N.Ed. 168. Spec. Fields of P.H.N.....	2	*N.Ed. 165. Contemporary Nursing Lit.....	2
N.Ed. 150. Prin. Teach. Nurs. & Health....	5	*N.Ed. 171. Psychiatric Information.....	2
Soc. 1. Survey.....	5	*N.Ed. 172. Psychiatric Information.....	2
Soc. 128. Field of Social Work.....	3	*Home Econ. 106. Nutr. for Pub. Hlth. Nrs...	5
Soc. Work 175. Social Case Work.....	5	*Comp. 1. Composition.....	5
Psych. 1. Introduction.....	5	*Comp. 2. Composition.....	5
Bact. 103. Public Hygiene.....	5	*Speech 40. Essentials of Speaking.....	5
N.Ed. 110. Field Work.....	8 to 16	*Psych. 131. Child Psychology.....	5
		*Soc. 31. Social Statistics.....	5
		*Chem. 1 or 21. General.....	5
		*Chem. 2 or 22. General.....	5
		Total credits required.....	90

*Electives.

CURRICULUM C

Leading to a Certificate in Nursing Supervision

The University offers the course leading to a certificate in nursing supervision for graduate nurses who wish preparation as head nurses or supervisors. This program combines five to seven credits of academic work each quarter with a year's professional practice in one major and two minor nursing services elected from the obstetric, pediatric, medical, surgical, operating room, psychiatric, out-patient nursing and diet therapy specialties.

Prerequisite Courses

	Credits		Credits
E.B. 4. Survey	5	Psych. 1. General.....	5
Soc. 1. Survey	5	Home Econ. 105. Nutrition.....	5
		or	
		Home Econ. 106. Nutrition.....	5

Advanced Supervisory Program

Academic Courses	Credits	Professional Practice	
Phar. 101E. Advanced Pharmacy	2	Review, supervision, and advanced administration in classes and practice of major and 1st and 2nd minor nursing specialties selected.	
N.Ed. 150. Principles of Teaching	5	1st Minor Service.....	1 quarter
N.Ed. 152. Supervision of Hospital Depts.....	5	2nd Minor Service.....	1 quarter
N.Ed. 153. Adm. of Nursing Service.....	5	Major Service.....	1 quarter
or		Advanced Administration and Teaching	1 quarter
N.Ed. 151. Adm. Nursing Schools.....	5	Total practice required.....	4 quarters
N.Ed. 154. Cadet Teaching and Ward Administration.....	10		
Total credits required.....	47		

Group III. Graduate Curricula

Graduate work in Nursing Education is offered with a major in the fields of (1) Administration in Schools of Nursing, (2) Teaching and Supervision, (3) Public Health Nursing. The minor must be chosen from the allied fields.

If the Master of Science is desired the minor should be in the fields of biological or physical sciences such as physiology, anatomy, bacteriology, or chemistry. If the Master of Nursing is desired the minor should be in the fields of social sciences, education or home economics.

OCEANOGRAPHIC LABORATORIES

See bulletin of the Oceanographic Laboratories, available upon request. For courses, see page 245.

ORIENTAL STUDIES

George Edward Taylor, Executive Officer, 207 Denny Hall

DEGREE: Bachelor of Arts

One general and four specialized curricula are offered to students desiring to major in Oriental Studies, of which the student is required, after consultation, to select one. This choice must ordinarily be made not later than the sophomore year.

GENERAL MAJOR IN ORIENTAL STUDIES

MAJOR IN JAPANESE STUDIES

	Credits
10. Problems of the Pacific.....	5
40. Chinese Civilization, or Japanese Civil....	5
114, 115, 116. History of Religion.....	9
Elect. in Lit.: 50, 52, 170, 171, min. of U.D. cr....	10
Hist. elect.: 90, 91, 92, 180, 181, minimum of.....	15
Read. course elect.: 190, 191, 192, 193, 194, min. of.....	3
	47

	Credits
10. Problems of the Pacific.....	5
1-2, 3. Japanese Language.....	15
107, 108, 109. Japanese Lang. 2nd year.....	15
170. Chinese Literature in Translation.....	5
171. Japanese Literature in Translation.....	5
Elect.: 41, 91, 115, 181, 193, minimum of.....	3
	48

In addition to the above the following courses are strongly recommended:
O.S. 44-45, 46, Chinese Language, and 110, 111, Japanese Language, third year.

MAJOR IN CHINESE STUDIES

	<i>Credits</i>
10. Problems of the Pacific.....	5
44-45, 46. Chinese Language.....	15
146, 147, 148. Chinese Language, 2nd year....	15
149, 150, 151. Chinese Language, 3rd year....	9
90 or 180. Chinese History.....	5
115. History of Religion.....	3
170. Chinese Literature in Translation.....	5
Approved elect.: 40, 92, 192, minimum of.....	3
	<hr/> 60

MAJOR IN SLAVIC STUDIES

	<i>Credits</i>
7-8, 9. Russian Language.....	15
140, 141, 142. Russian Language, 2nd year....	9
162, 163. Russian Language, 3rd year.....	6
130. Russian Literature.....	5
136. The Russian Revolution.....	5
10. Problems of the Pacific, or	
116. History of Religion.....	3 or 5
Appr. elect.: 40, 190, 192, 193, 194, min. of...	5
	<hr/> 48 or 50

MAJOR IN ORIENTAL LANGUAGES

	<i>Credits</i>
10. Problems of the Pacific.....	5
Language electives (Hebrew, Sanskrit, Arabic, Aramaic, Chinese, Japanese) min. of..	45
Approved electives: 50, 52, 115, 116, 170, 171, or reading courses.....	15
	<hr/> 65

PHILOSOPHY

William Savery, Executive Officer, 264 Philosophy Hall

DEGREE: Bachelor of Arts

Major Requirements

	<i>Credits</i>
2. Introduction to Social Ethics or	
3. Introduction to Ethics.....	5
5. Introduction to Logic.....	5
101-102-103. History of Philosophy.....	9
Electives.....	17
Minimum total credits.....	<hr/> 36

Fifty per cent of the credits in the major must be in upper division courses. Psychology 1 is required, and major students are urged to elect courses in psychology.

PHYSICAL AND HEALTH EDUCATION FOR MEN AND WOMEN

*Mary Gross Hutchinson, Executive Officer,
105 Women's Physical Education Building*

Henry M. Foster, Executive Officer, 210 Men's Pavilion

DEGREE: Bachelor of Arts

Group A. Major in Physical Education

(For the non-professional student)

Required foundation and related courses:

	<i>Credits</i>		<i>Credits</i>
Zool. 1. Animal Biology.....	5	Soc. 1. Survey of Sociology.....	5
Zool. 2. General Zoology.....	5	Psych. 1. General Psychology.....	5
Zool. 16. Evolution.....	2	Speech 40. Essentials of Speaking.....	5
Zool. 17. Eugenics.....	2	†P.E. 11, 12, 13. Physical Education	
Chem. 1-2. General Chemistry.....	10	Activities for Freshmen Majors.....	+6
(Unless taken in high school)		†P.E. 51, 52, 53. Physical Education	
Anat. 100. Anatomy Lectures.....	3	Activities for Sophomore Majors.....	+6
Physiol. 50. Physiology.....	6	*P.E. 6, 7, 8; 9, 10, 11. Phys. Educ.	
*H.E. 104. Nutrition for Non-majors.....	2	Activities for Majors.....	+6
Lib. Arts 1.....	5		<hr/>
†P.E. 10.....	5		†68+12
Comp. 1-2.....	10	Total credits required.....	*70+18-24
*Mil. or Nav. Sci.....	+12-18		

Required professional courses:

<i>Men</i>	<i>Credits</i>	<i>Women</i>	<i>Credits</i>
107. Personal and General Hygiene.....	3	111. Rhythmic Activities for Small Children..	2
109. School Dance Program.....	2	112. Elementary School Athletic Program...	3
110. First Aid and Safety.....	3	113. Principles of Recreation.....	3
113. Principles of Recreation.....	3	115. Physiology of Muscular Exercise.....	5
115. Physiology of Muscular Exercise.....	5	118. Analysis of Rhythm.....	3
145. Principles of Health & Physical Educ....	5	128. Admin. & Organization of Camp Prog....	3
150. School P.E. Program.....	5	145. Prin. of Health & Physical Education....	5
153. Meth. & Materials in Health Teaching... 5		156. Meth. & Materials in Teaching Dance... 2	
158. Meth. in Teaching Apparatus, Tumbling, and Stunts.....	2	162. Meth. & Materials in Teaching Folk, Tap, and Clog Dancing.....	2
161. Meth. in Teaching Boxing, Wrestling... 2		163. Meth. & Materials in Tch. Sports.....	2
163. Meth. & Material in Teaching Sports... 2		164. Meth. in Teaching Swimming.....	3
165. School Health Education Program.....	3	165. School Health Education Program.....	3
Total credits required.....	40	Total credits required.....	36

Group B. Major in Recreational Leadership

(For the professional student in the field of recreation)

Required foundation and related courses:

<i>Credits</i>	<i>Credits</i>
Comp. 1, 2.....	10
*P.E. 11, 12, 13. P.E. Activ. for Fresh. Maj. +6	
*P.E. 51, 52, 53. P.E. Activ. for Soph. Maj. +6	
*P.E. 6, 7, 8; 9, 10, 11. P.E. Activ. for Maj. +6	
*P.E. 10. Health Education.....	5
*P.E. 107. Personal and Gen. Hygiene.....	3
Zool. 1. Animal Biology.....	5
Physiol. 50. Physiology.....	6
Lib. Arts 1 or 11.....	5
Psych. 1. General Psychology.....	5
Speech 40. Essentials of Speaking.....	5
Soc. 1. Survey of Sociology.....	5
Soc. 124. Play and Leisure Time.....	3
Total credits required.....	†61 *53
<i>Elective Related Courses:</i>	
Forestry 6. General Forestry.....	2
Forestry 65. Forest Recreation.....	3
Librarianship 180. Story Telling.....	3
Music 22, 23, 24. Music Appreciation.....	2
Psych. 118. Social Psychology.....	5

Required professional courses:

<i>Men</i>	<i>Credits</i>	<i>Women</i>	<i>Credits</i>
109. School Dance Program.....	2	101. Meth. & Mat. in Gym., Stunts, Tumbl... 3	
110. First Aid and Safety.....	3	110. First Aid and Safety.....	2
113. Principles of Recreation.....	3	111. Rhythmic Activities for Small Children.. 2	
115. Physiology of Muscular Exercise.....	5	112. Elementary School Athletic Program... 3	
124. Activities and Recreational Methods....	3	113. Principles of Recreation.....	3
125. Administration of Play and Recreation.. 3		115. Physiology of Muscular Exercise.....	5
126. Observation and Practice Teaching.....	2	118. Analysis of Rhythm.....	3
145. Prin. of Health & Physical Education....	5	124. Activities and Recreational Methods....	3
158. Meth. in Tch. Appar., Tumbl., Stunts.. 2		125. Administration of Play and Recreation.. 3	
161. Meth. in Tch. Boxing and Wrestling... 2		126. Observation and Practice Teaching.....	2
163. Meth. & Materials in Teaching Sports... 2		128. Admin. & Organization of Camp Prog....	3
164. Meth. in Teaching Swimming.....	2	145. Prin. of Health and Physical Education.. 5	
165. School Health Education Program.....	3	156. Meth. & Materials in Teaching Dance... 2	
170 or 171 or 172 or 173. Athletic Coaching.. 6		162. Meth. & Mat. Tch. Folk, Tap, Clog Danc.. 2	
Total credits required.....	45	163. Meth. & Material in Teaching Sports... 3	
		164. Meth. in Teaching Swimming.....	3
		165. School Health Education Program.....	3
		Total credits required.....	50

*Required of men only.

†Required of women only.

Group C. Professional Teacher Training

(For the professional student in health and physical education)

This is a five-year course; application for admission is made in the junior year; for standards of admission consult the head of the department.

TEACHING MAJOR IN PHYSICAL EDUCATION**Required foundation and related courses:**

	<i>Credits</i>		<i>Credits</i>
Zool. 1. Animal Biology.....	5	Soc. 1. Survey of Sociology.....	5
Zool. 2. General Zoology.....	5	Psych. 1. General Psychology.....	5
Zool. 16. Evolution.....	2	Speech 40. Essentials of Speaking.....	5
Chem. 1-2. General Chemistry.....	10	†P.E. 11, 12, 13. Physical Education	
(Unless taken in high school)		Activities for Freshmen Majors.....	+6
Anat. 100. Anatomy Lectures.....	3	†P.E. 51, 52, 53. Physical Education	
Physiol. 50. Physiology.....	6	Activities for Sophomore Majors.....	+6
*H.E. 104. Nutrition for Non-Majors.....	2	*P.E. 6, 7, 8, 9, 10, 11. Physical Education	
Lib. Arts 1.....	5	Activities for Majors.....	+6
†P.E. 10.....	5		
Comp. 1-2.....	10	Total credits required.....	*63+ 6
			†66+12

Required professional courses:

<i>Men</i>	<i>Credits</i>	<i>Women</i>	<i>Credits</i>
107. Personal and General Hygiene.....	3	101. Meth. & Mat. in Gym., Stunts, Tumb... 3	
109. School Dance Program.....	2	110. First Aid and Safety.....	2
110. First Aid and Safety.....	3	111. Rhythmic Activities for Small Children... 2	
113. Principles of Recreation.....	3	112. Elementary School Athletic Program... 3	
115. Physiology of Muscular Exercise.....	5	113. Principles of Recreation.....	3
122. Kinesiology.....	3	115. Physiology of Muscular Exercise.....	5
127. Tests and Measurements.....	3	118. Analysis of Rhythm.....	3
135. Adapted Activities.....	3	122. Kinesiology.....	3
145. Prin. of Health and Physical Education... 5		127. Tests and Measurements.....	3
150. School Physical Education Program.....	5	128. Admin. & Organization of Camp Prog... 3	
153. Meth. & Materials in Health Teaching... 5		135. Adapted Activities.....	3
158. Meth. in Tch. Appar., Tumb., Stunts... 2		145. Prin. of Health and Physical Education... 5	
161. Meth. in Teach. Boxing, Wrestling... 2		150. School Physical Education Program.....	2
163. Meth. & Materials in Teaching Sports... 2		153. Meth. & Materials in Health Teaching... 5	
164. Methods in Teaching Swimming.....	2	156. Meth. & Materials in Teaching Dance... 2	
165. School Health Education Program.....	3	162. Meth. & Materials in Teaching	
Athletic Coaching.....	6	Folk, Tap and Clog Dancing.....	2
Total credits required.....	57	163. Meth. & Materials in Teaching Sports... 3	
		164. Methods in Teaching Swimming.....	3
		165. School Health Education Program.....	3
		Coaching.....	0
		Total credits required.....	58

*Required of men only.

†Required of women only.

TEACHING MINOR IN THE COLLEGE OF EDUCATION**Required foundation course:**

Physiology 50. Physiology.....	6
--------------------------------	---

Required professional courses:

<i>Men</i>	<i>Credits</i>	<i>Women</i>	<i>Credits</i>
107. Personal and General Hygiene.....	3	51. P.E. Activities for Sophomore Majors... +2	
109. School Dance Program.....	2	52. P.E. Activities for Sophomore Majors... +2	
110. First Aid and Safety.....	3	112. Elementary School Athletic Program... 3	
145. Prin. of Health and Physical Education... 5		145. Prin. of Health and Physical Education... 5	
158. Meth. in Tch. Appar., Tumb., Stunts... 2		150. School Physical Education Program.....	2
161. Meth. in Teach. Boxing, Wrestling... 2		153. Meth. & Materials in Health Teaching... 5	
163. Meth. & Materials in Teaching Sports... 2		162. Meth. & Mat. in Teaching Folk,	
165. School Health Education Program.....	3	Tap, and Clog Dancing.....	2
Athletic Coaching.....	4	163. Meth. & Mat. in Teaching Sports... 3	
Total credits required.....	26	165. School Health Education Program.....	3
		Electives.....	3
		Total credits required.....	26+4

Electives to be selected from:

	<i>Credits</i>
101. Methods and Materials in Gymnastics, Stunts and Tumbling.....	3
113. Principles of Recreation.....	3
118. Analysis of Rhythm.....	3
128. Organization and Administration of Camp Program.....	3
156. Methods and Materials in Teaching Dance.....	2
164. Methods in Teaching Swimming.....	3

Substitutions subject to approval of head of department.

TEACHING MAJOR IN HEALTH EDUCATION

<i>Required foundation and related courses:</i>	<i>Credits</i>	<i>Required professional courses:</i>	<i>Credits</i>
Zool. 1. Animal Biology.....	5	Soc. Work 231-2. Psych. Inf. for Soc. Wkrs....	4
Zool. 2. General Zoology.....	5	or	
Zool. 17. Eugenics.....	2	Psych. 2. Psychology of Adjustment.....	5
Chem. 100. Lectures.....	10	Home Econ. 104. Nutrition for Hlth. Educ....	2
Anat. 100. Lectures.....	3	N.Ed. 104. Pub. Hlth. Admin. & Epidemiol...	2
Physiol. 50 and 53 or 54.....	6-10	N.Ed. 169. Public Health.....	3
Bact. 103. Public Hygiene.....	5	Psych. 131. Child Psychology.....	5
Psych. 1. General.....	5	†P.E. 4. Health Education.....	2
Sociol. 1. Survey.....	5	P.E. 6. Health Education.....	2
Speech 40. Essentials of Speaking.....	5	*P.E. 107. Personal and General Hygiene.....	3
	51 or 55	P.E. 110. First Aid and Safety.....	†2 *3
		P.E. 115. Physiology of Muscular Exercise....	5
		P.E. 145. Prin. of Health and Physical Edu...	5
		P.E. 153. Meth. and Mat. in Health Teaching...	5
		P.E. 165. School Health Program.....	3

*42 or 43.

†40 or 41

In addition, the student qualifying for a normal diploma must have 26 credits in education, including Educ. 71-72-73.

*Required of men only.

†Required of women only.

TEACHING MINOR IN HEALTH EDUCATION

Required foundation and related courses:

	<i>Credits</i>
Zool. 1. Animal Biology.....	5
Zool. 17. Eugenics.....	2
Physiol. 50. Physiology.....	6
	13

Required professional courses:

	<i>Credits</i>		<i>Credits</i>
†P.E. 10. Health Education.....	5	N.Ed. 104. Public Health Administration.....	2
*H.E. 104. Nutrition.....	2	N.Ed. 169. Public Health.....	3
P.E. 107. Personal and General Hygiene....	3	P.E. 110. First Aid and Safety.....	2 or 3
Psych. 2. Psychology of Adjustment.....	5	P.E. 145. Prin. in Health & Physical Educ....	5
or		P.E. 153. Meth. & Mat. in Health Teaching...	5
Soc. Wk. 231. Psychiatric Information for		P.E. 165. School Health Education Program..	3
Social Workers.....	2	Total credits required.....	†27 or 30
			28 or 31*

†Required of women only.

*Required of men only.

Advanced Degrees

For general University requirements, see Graduate School section. For specific requirements, see Announcement of the Graduate School, available upon request.

PHYSICS

Henry L. Brakel, Executive Officer, 206 Physics Hall

DEGREE: Bachelor of Science—elective course

DEGREE: Bachelor of Science in Physics

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Comp. 1. Composition.....	5	Comp. 2. Composition.....	5	Speech 40. Essentials	
Math. 4. Plane Trig.....	5	Math. 5. College Algebra.....	5	of Speaking.....	5
Physics 1. Mechanics		Physics 2. Electricity		Math. 6. Analytic Geom.....	5
and Sound.....	5	and Magnetism.....	5	Physics 3. Heat & Light.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

SECOND YEAR

Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5	Chem. 23. General.....	5
Math. 107. Calculus.....	5	Math. 108. Calculus.....	5	Math. 109. Calculus.....	5
Physics 101. Introduction		Physics 102. Introduction		Physics 150. Heat and Intro-	
to Modern Physics.....	3	to Modern Physics.....	3	duction to Thermodynam-	
Physics 105. Electricity		Physics 106. Electricity		ics and Kinetic Theory....	3
and Magnetism.....	3	and Magnetism.....	3	Elective.....	2
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

THIRD YEAR

Math. 114. Differential		Math. 115. Differential		Physics 160. Optics.....	6
Equations.....	3	Equations.....	3	Chem. 132. Organic.....	5
Chem. 111. Quantitative		Chem. 131. Organic.....	5	*Advisory elective.....	4
Analysis.....	5	*Advisory elective.....	4		
*Advisory elective.....	7	Physics 140. Sound.....	3		

FOURTH YEAR

Physics 191. Theoretical		Physics 192. Theoretical		Physics 115. Photography... 4
Mech.....	4	Mech.....	4	Chem. 183. Physical and
Physics 195. Experimental		Physics 196. Experimental		Theoretical Chemistry... 5
Atomic Physics.....	3	Atomic Physics.....	3	Physics 154. Low and High
Chem. 181. Physical and		Physics 180. Hist. of Physics 2		Frequency Measurements. 4
Theoretical Chem.....	5	Chem. 182. Physical and		Mech. Eng. 55. Manufactur-
Elective.....	3	Theoretical Chemistry.... 5		ing Methods..... 1

*Foreign Language, French or German.

The total number of credits must include Physical Education 15 or men, and Physical Education 4, 6, 8, or 10 for women.

Teaching Major or Minor in the College of Education

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
Physics 1-2, 3. General Physics	15	Physics 1-2, 3. General Physics	15
or		or	
Physics 4, 5, 6. General Physics		Physics 4, 5, 6. General Physics	
Physics 101-102. Intro. to Modern Theories... 6		Physics 101-102. Intro. to Modern Theories... 6	
Physics 105-106. Electricity & Magnetism... 6		Physics 105-106. Electricity & Magnetism... 6	
Physics 160. Optics..... 6		Physics 160. Optics..... 6	
Physics electives..... 8			
Minimum total..... 41		Minimum total..... 33	

A teaching major or minor in physics should be supported by 15 credits of college mathematics.

For recommendations for a normal diploma a major or a minor is required with an average grade better than "C."

POLITICAL SCIENCE*Charles E. Martin, Executive Officer, Social Science Building***DEGREE: Bachelor of Arts**

Forty-five credits for a major which must include 30 upper division credits, 20 credits in one group and 10 in each of the other two.

- I. Political Theory and Jurisprudence.
- II. International Relations.
- III. Politics and Administration.

Teaching Major or Minor in the College of Education

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
Pol. Sci. 1. Comparative Government.....	5	Pol. Sci. 1. Comparative Government.....	5
Pol. Sci. 54. International Relations.....	5	Pol. Sci. 101. Constitutional Government.....	2
Pol. Sci. 61. Municipal Government.....	5	Electives in Political Science.....	18
Pol. Sci. 101. Constitutional Government.....	2		
Pol. Sci. 112. American Political Theory.....	3	Minimum total.....	25
Pol. Sci. 151. American National Government	5		
Electives in Political Science.....	15		
Minimum total.....	40		

PRE-EDUCATION*Francis F. Powers, Executive Officer, 114 Education Hall*

(See College of Education, page 131 for detailed information.)

Pre-education Students. During the freshman year, students who expect to teach register as pre-education freshmen in the College of Arts and Sciences and pursue the regular courses of this college. They must confer in this year with the dean of the College of Education. This conference is for two purposes: (1) to obtain admission to the College of Education; and (2) to select suitable combinations of teaching subjects and orientation courses for the proposed preparation for teaching.

PRE-LAW*David Thomson, Adviser, 203 Denny Hall*

General. For admission to the School of Law, students in the College of Arts and Sciences must present a minimum of 135 academic credits with a scholarship average of 2.50 grade points, together with the required work in military or naval science, and physical education. In the 135 credits must be included the specific credits needed to satisfy the regular requirements of the College, viz., composition, health, and hygiene and the group requirements. While the School of Law does not prescribe specific courses it strongly recommends that all pre-law students complete the basic courses in history (English and American), economics and political science, and at least one course in logic or mathematics. It regards some work in sociology as desirable and recommends that in choosing electives, the student should include some courses in the biological and physical sciences.

Combined Seven-Year Arts-Law Curriculum. It is possible to obtain the degrees of bachelor of arts and bachelor of laws in seven years. To have the benefit of this combined course, students must, in the first three years, earn 138 credits in the College of Arts and Sciences together with the required credits in military or naval science and physical education. To acquire the 138 credits in three years the student should carry an average of 16 credits each for three quarters during the junior and sophomore years, exclusive of military or naval science and physical education. As one can enter the Law School to advantage only at the beginning of the autumn quarter, the entire 138 credits should be completed within the customary three years, with work during an intervening summer quarter if necessary. At the beginning of the fourth year, if a student has earned 138 credits with an average

of 2.50 grade points, and the required credits in military or naval science and physical education (see above), he may enter the School of Law and there earn 42 credits which will be counted toward his bachelor of arts degree. He will be granted the bachelor of arts degree at the end of the fourth year, or as soon as he completes the required work above specified and 42 credits in the School of Law. The degree of bachelor of laws will be conferred upon completion of his work in the Law School.

This combined arts-law curriculum, in lieu of a major, requires 70 upper division credits in place of the 60 credits required of students offering a major. As the 42 credits of law, counted toward the bachelor of arts degree, are in upper division courses, it follows that at least 28 of the 138 credits referred to above must also be in upper division courses. These 28 credits must be so grouped that they can be approved by the dean of the College of Arts and Sciences as constituting, with the law courses, a satisfactory substitute for the major usually required for the bachelor of arts degree.

In exceptional cases where the student has at least 135 credits, the dean of the Law School may, upon written petition, permit registration in the Law School and allow the student to satisfy the remaining three credits necessary for the combined degrees at some subsequent time.

A Seven-Year Curriculum in Science and Law. This is a combination curriculum whereby a student may obtain the degrees of bachelor of science and bachelor of laws in seven years. At the end of his third year, after he has earned 138 academic credits with a grade point average of at least 2.50 and completed the required six quarters in military or naval science and physical education, and all required work 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 as soon as he completes the required work above specified and 42 credits in the School of Law making a total of 180 credits for graduation. The fifth, sixth and seventh years of the curriculum are devoted to completing the remainder of the required work for graduation from the School of Law.

Transfer Pre-Law Students. Students from other institutions entering this University with advanced standing may take advantage of this combined seven-year curriculum, provided they are registered in the College of Arts and Sciences for at least one full year of work, and earn at least 45 credits in the University before entering the School of Law. This privilege will not be extended to normal school graduates attempting to graduate in two years, nor to undergraduates of other colleges who enter this University with the rank of senior.

PRE-LIBRARY

Ruth Worden, Director, 111 Library

(See School of Librarianship bulletin for detailed information.)

Admission. Admission to the general course in librarianship is granted as follows:

To graduate students holding the baccalaureate degree from any college or university of good standing, with an average grade of "B" in their undergraduate work and at least 20 college credits of one modern foreign language. Students desiring to enter college or university library work or work in a large public library are required to have a reading knowledge of both French and German.

Initial admission to classes in the School of Librarianship is permitted only at the beginning of the college year in October.

Students planning to enter the School of Librarianship should consult the director of the school at least once a year.

Scholarship. Students not making an average of "B" in librarianship courses may, at the discretion of the faculty of the school, be dropped.

Graduation. The degree of bachelor of arts in librarianship, is granted upon satisfactory completion of 45 credits in the school.

PRE-MEDICINE

or

PRE-DENTISTRY

John L. Worcester, Executive Officer, Anatomy Building

Two- and Four-Year Curricula Preparatory to Medicine

One- or Two-Year Curricula Preparatory to Dentistry

The University offers two curricula preparatory to the study of medicine. One of these is for two years and will meet the requirements of medical schools which require only two years of college work for admission to their professional study. The second is for four years and leads to a Bachelor of Science degree. It is accepted by most schools that require more than two years of preparation, but the student is urged to consult with the pre-med adviser for the subjects for the last two years of the four-year curriculum.

This curriculum will not reduce the amount of work to be done by the student in medical school, but it is 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.

Below is the outline of the four-year curriculum. The first and second years constitute the two-year curriculum. Courses in the other years are optional, as indicated above.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 1 or 21. General.....	5	Chem. 2 or 22. General.....	5	Chem. 23. Qualitative Anal.	5
Zool. 3. Pre-medical.....	5	Zool. 4. Pre-medical.....	5	Physiol. 7. Elementary.....	5
Comp. 1. Composition.....	5	Comp. 2. Composition.....	5	Psych. 1. General.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

SECOND YEAR

Physics 1. General.....	5	Scientific French or German ..	5	Physics 3. General.....	5
Lit. 73. Intro. to Mod. Lit..	5	Physics 2. General.....	5	Chem. 132. Organic.....	5
Electives.....	5	Chem. 131. Organic.....	5	E.B. 4. Survey of Econ.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	Pol. Sci. 1. Survey.....	5
				M.S. and P.E. or N.S.....	+

THIRD YEAR

Anat. 100. Lecture.....	3	Anat. 102. General Human..	6	Anat. 103. General Human..	6
Anat. 101. General Human ..	3	Anat. 106. Histology and		Anat. 107. Neurology.....	6
Anat. 105. Histology and		Embryology.....	6	†Bact. 104. Serology.....	5
Embryology.....	6	Bact. 102. Sanitary and			
†Bact. 101. General.....	5	Clinical Methods.....	5		

FOURTH YEAR

Physiol. 151. Advanced.....	5	Physiol. 152. Advanced.....	5	Physiol. 153. Advanced.....	5
†Chem. 161. Physiological..	5	†Chem. 162. Physiological..	5	Bact. 112. Pathology.....	5
Bact. 105. Infec. Diseases..	5	Electives.....	6	Anat. 104. Topographic.....	4
				Electives.....	2

†Approved electives may be substituted.

The total number of credits must include Physical Education 15 for men, or Physical Education 4, 6, 8, or 10 for women

PSYCHOLOGY*Stevenson Smith, Executive Officer, 338 Philosophy Hall*

DEGREE: Bachelor of Science

For a major, 40 credits of psychology approved by the department.

Majors should elect courses in chemistry, mathematics, physics, physiology, philosophy and zoology.

The following courses are required: Psych. 1, 2, 102, 106, 108, 109, 124 and 140.

Required courses in other departments: zoology, 10 credits; mathematics, 5 to 15 credits.

ROMANIC LANGUAGES AND LITERATURES

(French, Italian and Spanish)

Howard Lee Nostrand, Executive Officer, 215 Denny Hall

DEGREE: Bachelor of Arts

The Department offers majors in French, Spanish, and Italian, but not in "Romanic Languages." Students may be recommended to teach also upon minoring in any of these three, whatever their major. The requirement in each case is (a) proficiency in the language, and (b) a knowledge of its literature and cultural background, as outlined in a syllabus obtainable from the Department. This requirement may normally be met by passing the following courses:

<i>French</i>	<i>Major</i>	<i>Minor</i>
French 4, 5, 6.....	9 hours	} Same
French 41. (Should be taken as early as possible).....	3 hours	
French 101, 102, 103.....	6 hours	
French 104, 105, 106.....	9 hours	
French 107 or 108 ¹	2 hours	
French 158, 159.....	4 hours	
Electives in French Literature ²	12 hours	
	45 ¹	33 ¹
<i>Spanish</i>	<i>Major</i>	<i>Minor</i>
Spanish 4, 5, 6.....	9 hours	} Same
Spanish 101, 102, 103.....	9 hours	
Spanish 104, 105, 106.....	6 hours	
Spanish 158, 159.....	4 hours	
Electives in Spanish Literature ²	15 hours	
	43 ¹	31 ¹

¹ Beyond course 3, or two high-school years. A third high-school year replaces courses 4, 5, and 6; a fourth high-school year usually replaces courses 101, 102, and 103.

² In order to be recommended to teach, a student must either earn a grade of B in 107 or 108, or take the other of these courses in addition.

³ Courses numbered above 120 and not including more than three hours of 134, 135, 136.

Italian

The Department, through its scheme of alternate courses, offers enough work to satisfy the major requirements. Students who desire to major or minor in Italian are requested, however, to plan their work early with the instructor in charge.

Teaching Major or Minor in the College of Education

The above requirements will satisfy the major and minor requirements in the College of Education.

SCANDINAVIAN LANGUAGES AND LITERATURE

(Swedish, Norwegian, and Danish)

Edwin J. Vickner, Executive Officer, 210 Denny Hall

DEGREE: Bachelor of Arts

Swedish

	Credits
1, 2, 3. Elementary.....	9
4, 5, 6. Swedish Reading.....	6
23, 24, 25. Swedish Literature.....	6
103, 104, 105. Recent Swedish Writers.....	9
106, 107, 108. Recent Norwegian-Danish Writers or spec. work in Swedish Literature...	6
	<hr/> 36

Norwegian or Danish

	Credits
10, 11, 12. Elementary Norwegian or Danish..	9
13, 14, 15. Norwegian or Danish Reading.....	6
20, 21, 22. Norwegian or Danish Literature...	6
103, 104, 105. Recent Swedish Writers, or special work in Norwegian or Dan. Lit....	6
106, 107, 108. Recent Norwegian or Dan. Wrt.	9
	<hr/> 36

SLAVIC STUDIES (Russian Language)—See Oriental Studies

SOCIOLOGY

Jesse F. Steiner, Executive Officer, Social Science Bldg.

DEGREE: Bachelor of Arts

Students should read the department leaflet and consult staff advisers before selecting courses.

Students will be accepted as Sociology majors only after maintaining an average of 2.0 over their entire University records, and an average of 2.5 in Sociology courses for the quarter preceding. To continue as majors this average must be maintained.

	Credits
1. Survey of Sociology or	
150. General Sociology.....	5
131. Social Statistics.....	5
55. Human Ecology, or 155. Human Ecology.....	5
66. Group Behavior.....	5
Electives from courses offered in the department, chosen after consultation regarding the special field of interest.....	16
Minimum total.....	<hr/> 36

Teaching Major or Minor in the College of Education

Major	Credits	Minor	Credit
Soc. 1. Survey of Sociology, or		Soc. 1. Survey of Sociology, or	
Soc. 150. General Sociology.....	5	Soc. 150. General Sociology.....	5
Soc. 55. Human Ecology, or		Soc. 140. Population Problems, or approved	
Soc. 155. Human Ecology.....	5	equivalent, or	
Soc. 66. Group Behavior, or	5	Soc. 190. Social Attitudes, or approved	
Soc. 190. Social Attitudes.....	3	equivalent.....	3
Soc. 131. Social Statistics.....	5	Electives from courses offered in the	
Electives from courses offered in the		department after consultation re-	
department after consultation re-		garding the special field of	
garding the special field of interest.....	16	interest.....	17
Minimum total.....	<hr/> 36	Minimum total.....	<hr/> 25

ZOOLOGY*Trevor Kincaid, Executive Officer, 202 Johnson Hall*

DEGREE: Bachelor of Science

(See Biological Sciences, page 86.)

Teaching Major or Minor in Zoology and Physiology in the College of Education

<i>Major</i>	<i>Credits</i>	<i>Minor</i>	<i>Credits</i>
1, 2. Elements of Zoology	} 10	1, 2. Elements of Zoology	} 10
53-54. Physiology		53-54. Physiology	
Zoology, Physiology Electives.....	26	Zoology, Physiology Electives.....	10
Minimum total.....	36	Minimum total.....	20

DESCRIPTION OF COURSES

For description of courses in the various schools and departments of the College of Arts and Sciences, see Description of Courses section, page 160.

COLLEGE OF ECONOMICS AND BUSINESS*Howard H. Preston, Dean, 210 Commerce Hall***Admission and Expenses**

For detailed information regarding University entrance requirements and expenses, see General Information section.

For entrance to the College of Economics and Business, 12 required units* taken during the last three years of high school should be distributed as follows:

English	2 Units	} Must be taken in high school
U. S. History and Civics.....	1 Unit	
Geometry or Advanced Algebra.....	1 Unit	
2nd Unit Foreign Language.....	1 Unit	} Recommended
3rd Unit English.....	1 Unit	
Physics or Chemistry.....	1 Unit	
Social Science.....	1 Unit	
Bookkeeping	1 Unit	
Typewriting	1 Unit	
Shorthand	2 Units	

Ability in typewriting is not a requirement for graduation, but it is a very useful tool while a student is at the University and a practical necessity in a large proportion of the positions which are available after graduation. Students who have not had this training in high school are urged to get it before they graduate from the University.

Inquiries in regard to the College of Economics and Business should be addressed to the Dean. All correspondence regarding admission should be sent to the Registrar of the University.

Fellowships, Scholarships, Prizes. See page 67.

* A "unit" is applied to work taken in the high school. 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 thirty-six weeks.

REQUIREMENTS FOR GRADUATION

Graduates of the College of Economics and Business receive the degree of bachelor of arts in economics and business. The following is a summary of the requirements for this degree:

1. The student must satisfy the entrance requirements of the University and the College of Economics and Business. Students entering from other colleges with junior standing must either present or make up the following courses to meet the minimum lower division requirements of the college: E.B. 1-2, 54, 55, 56, 62, 63, 100.

2. The student must earn 180 credits in subjects required by the University and required or approved by the faculty of the college. In addition, he must meet the general University requirement of six quarters of military or naval science and five quarters of physical education, plus Physical Education 10 or 15.

3. Of the total 60 credits of approved electives, 15 must be selected from political science, sociology, psychology, and philosophy.

4. Continuation in the College of Economics and Business will depend upon the student's demonstration of general fitness for work in that college, including the maintenance of satisfactory academic performance. No student will be regularly admitted to the sophomore year in the College of Economics and Business if he has any entrance deficiency or if his grade point average is below 1.80. Failure to obtain a cumulative grade point average of 2.0 by the end of the sophomore year, and to maintain it thereafter, will be regarded as unsatisfactory. Students with records of unsatisfactory performance will be reported to the dean for appropriate action. The same rules apply to a major in economics in the College of Arts and Sciences. A student may transfer from another college to the College of Economics and Business, provided he has no entrance deficiency, and thereafter becomes subject to the above rules.

5. Course Requirements:

Lower Division Requirements**FIRST YEAR**

<i>Credits</i>		<i>Credits</i>		<i>Credits</i>	
E.B. 1-2. Prin. of Econ.....	5	E.B. -2. Prin. of Econ.....	5	Geog. 7. Econ. Geog.....	5
Sci., Math. or Lang*.....	5	Sci., Math. or Lang.....	5	Comp. 37. Argumentation... 5	
Comp. 1 or 15.....	5	Elective.....	5	Elective.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

SECOND YEAR

<i>Credits</i>		<i>Credits</i>		<i>Credits</i>	
History 57.....	3	History 58.....	3	History 59.....	3
E.B. 54. Business Law.....	3	E.B. 55. Business Law.....	3	E.B. 56. Business Law.....	3
E.B. 62. Prin. of Accounting 5		E.B. 63. Prin. of Accounting. 5		E.B. 100. Statistical Anal.... 5	
Elective.....	5	Elective.....	5	Elective.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

*Ten credits of either Mathematics or Laboratory Science or Advanced Modern Foreign Language to be selected from the following courses:

Mathematics 1, 4, 5, 6, 11, 12.

Laboratory Science—Select one of the following:

Chem. 1-2 or 21-22.

Physics 1, 2 or 4, 5.

Zool. 1, 2, Physiology 7.

Botany 1, 2, 16.

Students who have had two high school units of the language chosen to satisfy this requirement must take 20 credits in the University, 10 credits of which will count as electives.

Upper Division Requirements

	<i>Credits</i>
E.B. 103. Money and Banking	5
E.B. 104. Prin. of Transportation	5
E.B. 105. Economics of Labor	5
E.B. 106. Economics of Marketing and Advertising	5
E.B. 107. World Economic Policies	5
E.B. 121. Corporation Finance	5
E.B. 171. Public Finance and Taxation I.	5
E.B. 175. Business Fluctuations	5
E.B. 185. Advanced Economic Theory	5
General Requirements	45
Special Requirements (see suggestions for planning courses, below)	15 or more
Electives	30

Suggestions for Planning Courses

During the sophomore year the student will select a special field of major interest. This choice will determine his adviser. In consultation with his adviser, the student will select the upper division courses which best meet his needs. This will include not only the courses which meet the special requirements but also the supporting courses chosen as electives. Conference between student and instructor may be held at any time at their mutual convenience and should not be delayed until the registration period. At the time of registration the student's program must be approved by the registration secretary for the College of Economics and Business, who will enforce all requirements, together with the course prerequisites as stated in this bulletin.

Each student in the college is required to select a minimum approved sequence of *at least fifteen credits* in some special field.

Following is a list of the major fields together with the required courses and recommended electives.

1. Economics.
Required: E.B. 187 (plus 10 credits to be recommended).
Recommended electives: E.B. 131, 163, 164, 172, 181.
2. Labor.
Required: E.B. 161, 163, 164.
Recommended elective: E.B. 177.
3. Public Finance.
Required: E.B. 172, 196 (plus 10 credits to be recommended).
4. Banking and Finance.
Required: E.B. 122, 123, 125, 126.
Recommended electives: E.B. 88, 110, 127, 172.
5. Foreign Trade and Consular Service.
Required: E.B. 127, 131, 132.
Recommended electives: E.B. 197.
Geography 102, 103, 104, 105, 106, 115.
Political Science 121, 122, 124, 127, 129.
History 127, 158, 159.
Oriental Studies 90, 91; and Law 122, 141.
Speaking knowledge of some modern foreign language.
6. Marketing.
Required: E.B. 134, 135, 136, 193A, B, C.
Wholesaling: E.B. 131, 132.
Retailing: Home Economics 25.
Advertising: Journalism 130, 131.
Recommended electives: Psych. 21, E.B. 115.
7. Public Utilities.
Required: E.B. 141, 142, 196 (plus 5 credits to be recommended).

8. **Transportation.**
Required: 20 credits or more chosen from the following—E.B. 143, 144, 145, 146, 147, 148, 149, 194.
9. **Management.**
Required: E.B. 101, 110, 154.
Recommended electives: Psych. 21, Econ. 120, 195.
10. **Accounting.**
Required: E.B. 110, 111, 112, 156, 157, 158.
Recommended electives: E.B. 152, 153, 154, 155.
11. **Real Estate.**
Required: E.B. 109, 169, 199 (plus 5 credits to be recommended).
Recommended electives:
 Architecture 1-2, 3
 Law 104, 123
 E.B. 129
 Sociology 55.
12. **Insurance.**
Required: E.B. 108, 128, 129.
13. **Pre-Law Curriculum—Seven-Year course in Economics and Business combined with Law.**
 Business Law (E.B. 54, 55, 56) may be omitted.
 Required: All lower division and upper division courses listed above.
 The "Special Requirements" will be fulfilled by completing the first-year curriculum required in the Law School.
 To have the benefit of this combined course, students must maintain a grade point average of 2.5, and must, in the first three years, earn 138 economics and business credits, together with the six quarters of required military or naval science and five quarters of physical education.
14. **Commercial Teaching.**
 Required:
 - (a) Satisfaction of the lower division requirements as outlined on page 128.
 - (b) E.B. 16-17-18. *Secretarial Training*. Nine credits. This requirement may be satisfied in either lower or upper division, or by passing a satisfactory examination. In case of exemption by examination, university credit is not given.
 - (c) Thirty credits of the upper division general requirements in economics and business, including E.B. 106 and E.B. 185. The remaining fifteen credits of this requirement may be postponed until the fifth year.
 - (d) The special requirement must include ten credits of upper division accounting.
 - (e) Twenty-eight credits of education courses, including Edu. 75E or Edu. 75F. See College of Education section.

Advanced Degrees

See Graduate School section, page 150, for general University requirements. For specific requirements, see Announcement of the Graduate School, available upon request.

DESCRIPTION OF COURSES

For description of courses offered by the College of Economics and Business, see page 184:

COLLEGE OF EDUCATION

Francis F. Powers, Dean, 113A Education Hall

General Plan. During the freshman year, students who have decided to enter the teaching profession register as pre-education freshmen in the College of Arts and Sciences. They must confer with the advisory officers in the College of Education for admission to this college as sophomores.

The degrees granted by the College of Education are the bachelor of arts when the major subject is in group I or II, and the bachelor of science when the major subject is in group III. After earning a total of 225 credits, including the requirements stated below, students may be granted a three-year normal diploma. Thirty-three of the 45 credits required for the fifth year must be earned in residence, and the entire fifth year must be approved in advance by the College of Education.

Professional work in education begins in either the freshman or sophomore year with Education 1. Later courses in education are open to students who have completed satisfactorily two years of college work, and who have an all-University grade-point average of 2.5 or better.

Fellowships, Scholarships, Prizes. See page 67.

GENERAL REQUIREMENTS

In addition to the all-University requirements for graduation, the College of Education requires Composition 1-2; 10 credits after passing Preliminary Freshman English test.

Elective Departmental Curricula

Minimum requirements for the first two years:

30 credits in one Arts and Sciences group

20 credits in a second group

10 credits in the remaining group

See College of Arts and Sciences, page 80, for groupings of schools and colleges.

General Academic Work. Owing to the variety of work that every beginning teacher is likely to be required to do, and to fulfill the requirements for the normal diploma, each teacher must have thorough preparation in at least two or more additional fields. The following combinations are most frequently demanded: English, history, civics—a foreign language is often included in this combination; English, French; English, French, Latin; English, Latin, history; French, German, Spanish; chemistry, mathematics, physics; biology—a combination of botany and zoology is frequently joined with the physical sciences—and mathematics; home economics in connection with one or two other subjects; commercial subjects with other subjects; athletics, drawing, or music in combination with other work. Public speaking, dramatics, and journalism are desirable as part of the preparation for teaching English. Library science is needed also by many teachers.

Saturday and Evening Classes. To accommodate teachers of Seattle and vicinity, classes in education are scheduled on Saturday and during the late afternoon and evening.

The Bureau of Appointments. This Bureau is maintained to assist qualified students and graduates in obtaining educational positions. Calls are received for college instructors, administrators, supervisors, and teachers in elementary and secondary schools. Students who wish to avail themselves of this service should have recommendations collected before leaving this University while their work and personal qualities are clear in the minds of their instructors. These records will then be available for use when needed. The Bureau is located in 263 Education Hall, on the mezzanine floor.

Admission to Professional Courses and the Fifth Year

The requirement for admission to undergraduate professional courses beyond Education 1 is the completion of 90 academic credits of college work earned in the University of Washington or in an accredited institution of equal rank, including the usual undergraduate requirements in physical education and military or naval science, and a grade-point average of 2.5.

Students admitted from the undergraduate curricula of other colleges of the University must have satisfied the requirements of their respective colleges except in foreign language up to the time of the transfer to the College of Education.

Admission of Teachers' College Graduates to Advanced Standing

Advanced credit for work taken in approved teachers' colleges or normal schools by students previously graduated from an accredited four-year secondary school will be allowed at the rate of 45 credits for each full year's work completed in such schools, the minimum amount accepted as a year's work being 36 weeks of attendance with at least 45 quarter credits, not more than 19 of which shall have been earned in one quarter. Claims for exemption from specific requirements, based on work in such schools, are passed on by the Registrar and the dean of the college.

Fifth-year standing cannot be attained until after the completion of Education 1, 9 and 70. Education 1 cannot be taken for credit after the beginning of the junior year. Students without teaching experience are accepted in the fifth year as candidates for the master's degree only if they have been graduated with merit (average of 3.5). Senior standing is attained when 135 academic credits have been earned.

Graduation

College of Education candidates for the bachelor's degree must satisfy the graduation requirements of the College of Arts and Sciences except in foreign language. If foreign language is omitted, 20 credits selected from general literature and English must be substituted. Such substitutions must be in addition to the regular requirements of the College of Arts and Sciences in English. In the total of 180 credits required of students with a grade average of at least 2.5 or 225 credits required of other students by the College of Education for graduation of all except teachers' college graduates, who are not candidates for the teaching diploma, the following must be included:

Academic major—36 or more credits (see departmental requirements).

The education courses required for graduation shall include the following:

	<i>Credits</i>
1. Orientation in Education	2
9. Psychology of Secondary Education	3
70. General Methods	5

The degrees awarded are bachelor of arts or, at the student's option, bachelor of science, according to the character of the academic work. Applicants selecting majors from Group I or II will receive the bachelor of arts degree while those selecting majors from Group III may receive the bachelor of science degree.

Students who transfer from other institutions must earn at least nine approved credits in education at the University of Washington, and maintain a grade-point average of at least 2.5.

Certification

A. THREE-YEAR CERTIFICATES

The University normal diploma, based on a degree from the University of Washington, will be valid for three calendar years from date of issue. Applicants for this diploma must fulfill the following requirements:

1. Earn 225 university academic credits in approved courses.
2. Show evidence of such general scholarship and personal and moral qualities as give promise of success and credit in the teaching profession.
3. Present a health certificate, based upon an examination taken within six months of the time that the normal diploma is to be received.
4. Pass a speech test.
5. Take oath of allegiance.
6. Earn a minimum of 15 credits in courses dealing with contemporary social problems. These courses must be approved by the College of Education.
7. Present (a) as a teaching major a subject now included in the curriculum of at least two of the larger public high schools of the State, and (b) two teaching minors, one of which may be in the same field as the major when major is art, home economics, or music. The list of acceptable teaching majors and minors follows:

Botany	Health Education	Physics
Chemistry	History	Physiology
Civics	Home Economics	Political Science
Commercial Teaching	Industrial Arts	Psychology
Drama	Journalism	Public School Art
Economics	Latin	Sociology
English	Mathematics	Spanish
French	Music	Speech
Geography	Physical Education for Men	Zoology
Geology	Physical Education for Women	
German		

One year of library science will be accepted in lieu of a second academic minor.

For departmental requirements for teaching majors and minors, see the schools and departments listed alphabetically under the College of Arts and Sciences, pages 81 to 127.

8. Earn a minimum of 28 credits (26 for students who take Education 1 for no credit) in the following courses in education (not more than two credits for Education 75 may be counted toward this requirement):

	Credits
1. Orientation in Education.....	2
9. Psychology of Secondary Education.....	3
30. Washington State Manual.....	0
70. General Methods.....	5
90. Measurement in Secondary Education.....	2
60. Principles of Secondary Education.....	3
75. Special Methods.....	2
71-72. Practice Teaching.....	8
120. Educational Sociology.....	3

9. Education 71 and 72, *Cadet Teaching*, should not be taken until the requirements are fulfilled for Education 1, 9, 70 and 75. Cadeting is taken either during the senior or fifth year with Education 30 and 60. The actual teaching takes place in the Seattle High Schools and is done by semesters rather than by quarters. As-

signments are made in Education Hall 113 in September and January at which time the semesters in the high schools begin. A student who elects to cadet fall semester will register for Education 71 for 5 hours in the fall and for Education 72 for 3 hours in the winter quarter. Students electing to cadet spring semester will register for Ed. 72 for 3 hours in the winter quarter and for Education 71 for 5 hours in the spring quarter. Cadets must take Education 30, State Manual, which is required for the Normal Diploma, while taking Education 71. The Tuesday meeting of all cadets continues as long as the cadet is teaching. A fee of one dollar per credit hour is charged which makes a total of \$8.00 for the complete course.

10. Graduates of normal schools or teachers colleges who subsequently graduate from the University and become candidates for the University three-year normal diploma must earn at least nine credits in courses dealing specifically with secondary education and such graduates must complete all the above required education courses not previously taken.

11. Students who transfer from other institutions must earn a degree from the University of Washington.

12. Students who transfer from other institutions are normally required to earn ten credits in the academic major and five credits in the academic minor at the University of Washington.

13. Persons who have received the master's or doctor's degree from this University are eligible for the University three-year normal diploma, provided they have fulfilled the specified normal diploma requirements.

B. SIX-YEAR STANDARD SECONDARY CERTIFICATES

Holders of the University three-year normal diploma who desire further certification must comply with the following requirements:

1. Give evidence of successful teaching experience for two years (eighteen months).

2. Pass a medical examination within six months of the granting of the certificate.

Grades Required for the Three-Year Normal Diploma and Six-Year Standard Certificate

(a) An all-University grade-point average of 2.5 or better.

(b) "C" average or better in all education courses, with "C" or better in Education 71-72, *Cadet Teaching*.

(c) "C" average or better in the major and minor teaching subjects with no grade below.

"C" average or better in contemporary social problems courses.

"C" in required courses except as indicated in departmental statements.

C. ADMINISTRATIVE REQUIREMENTS IN ACCREDITED DISTRICTS

Administrators. All persons interested in administrative positions should note carefully the following State requirements:

All courses to be applied on administrator's credentials must be acceptable for graduate credit.

Elementary School Principal's Credential

(a) Certification at the elementary level;

(b) At least two years of successful teaching experience in the elementary school or the junior high school;

- (c) Twelve quarter hours of training in professional courses relating to elementary organization, supervision and administration in addition to the requirements for standard elementary certification;
- (d) The twelve quarter hours of professional training for the principal's credential must be taken subsequent to at least one year of teaching experience.

Junior High School Principal's Credential

- (a) Certification at the junior high school level;
- (b) Completion of not less than four years of professional preparation;
- (c) At least two years of successful teaching experience in the common schools;
- (d) Twelve quarter hours of training in professional courses relating to junior high school organization, supervision and administration in addition to the requirements for standard junior high school certification;
- (e) The twelve quarter hours of professional training for the principal's credential must be taken subsequent to at least one year of teaching experience.

High School Principal's Credential

- (a) At least two years of thoroughly successful teaching experience on the secondary level;
- (b) A minimum of twelve quarter hours of work in professional courses relating to secondary organization, supervision, and administration, in addition to the minimum hours in education required for original certification;
- (c) The professional training for the credential must be taken subsequent to at least one year of teaching experience.

Superintendent's Credential

- (a) A minimum of two years of successful experience in an elementary school; and
- (b) A minimum of two years of successful experience in an accredited high school;

Provided, That not less than two years of such successful experience shall have been in the capacity of principal on either level; and

Provided, further, That in lieu of (a), 24 quarter hours of professional courses relating to elementary work may be substituted, or in lieu of (b), 12 quarter hours of professional courses relating to secondary organization, administration, and supervision, in addition to the minimum number of hours in education required for original certification, may be substituted. Professional work may be substituted for (a) or (b), but not for both.

- (c) The professional training for the credential must be taken subsequent to at least one year of teaching experience;
- (d) The Superintendent's credential shall be valid for a principalship in any field of service for which the holder of the credential is properly qualified with a teacher's certificate.

Courses in the Department of Education

Before registering for their first course in education, students must consult a departmental adviser.

Courses in education required for certification by the University of Washington are divided into three classes, excepting Education 1, which is required of freshmen and sophomores. Courses numbered from 9 to 99 are open to juniors and seniors. Courses numbered from 100 to 199 are open only to juniors, seniors, and graduate students. Courses numbered from 200 to 300 are open only to graduate students.

The courses in education are divided also as to content and function into nine divisions as follows:

- A. Educational psychology
- B. Educational sociology
- C. Educational administration and supervision
- D. Elementary education, including remedial education
- E. Secondary education {
 - General
 - Curriculum
 - Guidance
- F. Classroom techniques
- G. History and philosophy of education and comparative education
- H. Educational measurements and scientific techniques
- I. College problems.

Candidates for a master's degree must specialize in at least two of these divisions, while students who are working toward the doctorate must prepare themselves thoroughly in at least three divisions. They should elect courses from these divisions according to their interests, abilities, and the activities in which they expect to be engaged. The Announcement of the Graduate School, available upon request, gives specific requirements for advanced degrees.

Graduate students should plan a generous sampling of courses numbered above 200.

Before completing their registration, graduate students must consult either the executive officer in education or a designated adviser in selecting proper divisions of education and necessary courses in these divisions.

The following teaching majors and minors are also offered by the College of Education:

Civics

Major	Credits	Minor	Credits
Pol. Sci. 1. Comparative Government.....	5	Pol. Sci. 1. Comparative Government.....	5
E.B. 4. General Economics.....	5	E.B. 4. General Economics	5
Soc. 1. Introductory Sociology.....	5	or	
Pol. Sci. 101. Constitutional Government.....	2	Soc. 1. Introductory Sociology	2
Pol. Sci. 152. Political Parties.....	5	Pol. Sci. 101. Constitutional Government.....	
Electives in Political Science.....	13	Electives in Political Science.....	13
Electives in Economics or Sociology.....	5		
Minimum total.....	40	Minimum total.....	25

Commercial Teaching

The courses in commercial teaching are planned to prepare students for teaching positions in commercial departments of secondary schools. The requirements are as follows:

1. Satisfaction of the lower division requirements as outlined by the College of Economics and Business.

2. E.B. 16- 17- 18. *Secretarial Training*; nine credits. This requirement may be satisfied in either lower or upper division, or by passing a satisfactory examination. In case of exemption by examination, university credit is not given.

3. Thirty credits of the upper division general requirements in Economics and Business, including E.B. 106 and E.B. 185. The remaining fifteen credits of this requirement may be postponed until the fifth year.

4. The special requirement must include ten credits of upper division accounting.

5. Twenty-eight credits of education courses, including Education 75E or Education 75F.

6. Students majoring in commercial education in the College of Education are required to take E.B. 1-2 or 4, General Economics, and Geography 7, Economic Geography, and in addition the following courses:

	<i>Credits</i>
E.B. 16-17-18. Secretarial Training.....	9
E.B. 54, 55, 56. Business Law.....	9
E.B. 115. Business Correspondence.....	5
E.B. 62, 63. Principles of Accounting.....	10
Upper Division Accounting.....	10
Marketing.....	5
	<hr/> 48

7. Students minoring in commercial education in the College of Education are required to take:

	<i>Credits</i>
E.B. 4. General Economics.....	5
E.B. 16-17-18. Secretarial Training.....	9
E.B. 62, 63, 110. Principles of Accounting.....	15
E.B. 115. Business Correspondence.....	5
	<hr/> 34

Industrial Arts

Students who wish to major or minor in industrial arts should supplement such specialized training as they can receive at the University of Washington by courses which can be taken at the normal schools or at other institutions. Such courses are offered also at the University of Washington during the summer session. Twenty credits are required for a minor and 36 for a major.

COLLEGE OF ENGINEERING

Edgar A. Loew, Dean, 206 Guggenheim Hall

All curricula of the College of Engineering have a common freshman year, which is administered by the general engineering department. The work of the college beyond the freshman year comprises the curricula of six professional divisions, namely, aeronautical, chemical, civil, commercial, electrical, and mechanical engineering. Four-year curricula leading to degrees of bachelor of science in the respective professional branches of engineering are offered. The curricula consist largely of required courses, but a sufficient number of electives is provided in the junior and senior years to give each student the training that will best serve him, and to permit the inclusion of a limited number of cultural courses in his schedule.

Fellowships, Scholarships, Prizes. See page 67.

Entrance Requirements

For admission to the College of Engineering, the student must present 12 units* of high school credit, belonging normally to the 10th, 11th and 12th years of the high school curriculum. At least six of these units must be in academic subjects and should include the following:

English	two units
Advanced Algebra	one-half unit
Plane geometry	one unit
Solid geometry	one-half unit
Physics	one unit
Chemistry	one unit

The additional six units may be chosen from either academic or non-academic subjects. A student who does not present high school chemistry for entrance will normally be expected to earn fifteen credits instead of 12 credits in chemistry during the freshman year.

Students planning to major in chemical engineering should include two units of German in high school. Also, for those taking the structural or hydraulic option of civil engineering, German is very desirable.

A student is advised not to attempt to enter the University until he is able to register in his chosen college without deficiencies. Under certain circumstances and with the approval of the dean of the college concerned, however, certain deficiencies in specific college requirements may be removed after entrance to the University.

Scholarship Requirements

In addition to the all-University Scholarship requirements the scholarship rules of the College of Engineering provide that any freshman student whose grade point average for any quarter is less than 1.8 and any other undergraduate student whose grade point average for any quarter is less than 2.0 shall be placed on the low scholarship list and referred to the dean for appropriate action.

Preparation in Algebra

All students entering any department of engineering will be tested in high school algebra by class work and by examination given shortly after the beginning of the first quarter. It is essential that students in the engineering courses possess a good working knowledge of algebra *at the beginning of their course*. The purpose of the test is to secure this by requiring a review of the subject shortly before entering the University. Students failing in the test are not permitted to continue with regular freshman engineering mathematics, but are required to take a review of preparatory algebra (Mathematics 1, College of Arts and Sciences) during the first quarter.

Preparation in English

Proficiency in the mechanics of English should be acquired by the time a student begins university work. To aid him in maintaining a high standard, careful criticism is given of his written papers; unless his rating is satisfactory, he must pass a test in spelling, punctuation, and grammar before being admitted to the course in technical writing (Composition 100) required of all students in the College of Engineering. For those who fail in this test, which is given on the second Saturday of the autumn quarter, a non-credit course (Composition B) is provided, but is likely to result in irregularity of schedule. To avoid such difficulty, the student will do well to master the fundamentals of correct English while still in high school, and to make automatic their proper applications in both speech and writing.

*A "unit" is applied to work taken in the high school. 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 thirty-six weeks.

Curricula and Degrees

The College of Engineering offers four-year curricula in the departments of aeronautical, chemical, civil, commercial, electrical, and mechanical engineering, leading to the degree of bachelor of science in these respective departments.

Degree with Honors. A degree with honors in engineering may be conferred upon any student of the College of Engineering who, upon vote of the engineering faculty and of the honors committee, may be declared worthy of unusual distinction.

Thesis. The graduating thesis, when required, will consist of research or design in some branch of engineering, or review of some existing construction. The subject must be approved by the professor in charge of the department under which it is classified.

Normal Diploma. Engineering students who plan to prepare for high school teaching should consult with the department of Education as soon as possible.

Advanced Degrees. See Graduate School section, page 150, for general University requirements. For specific requirements, see Announcement of the Graduate School, available upon request.

CURRICULA OF THE DEPARTMENTS OF ENGINEERING

(For the Freshman Year in all Departments)

FRESHMAN

Autumn Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
†Chem. 24. General.....	4	Chem. 25. General.....	4	Chem. 26. General.....	4
G.E. 1. Drawing.....	3	G.E. 2. Drawing.....	3	G.E. 3. Drafting Problems...	3
G.E. 11. Engineering Probs.	3	G.E. 12. Engineering Probs.	3	†G.E. 21. Surveying.....	3
Math. 31. Engin. Fr.....	5	Math. 32. Engin. Fr.....	5	Math. 33. Engin. Fr.....	5*
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

†Students who expect to take chemical engineering should register for Chemistry 21, 22, 23.

†Chemical engineering students may substitute 3 hours of electives for G.E. 21.

Aeronautical Engineering

Leading to the Degree of Bachelor of Science in Aeronautical Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

Autumn Quarter	Credits	Winter Quarter	Credits	Spring Quarter	Credits
Physics 97. Engin. Physics..	5	Physics 98. Engin. Physics..	5	Physics 99. Engin. Physics..	5
Math. 41. Engin. Calculus..	3	Math. 42. Engin. Calculus..	3	A.E. 83. General Aeronautics	3
M.E. 81. Mechanism.....	3	C.E. 91. Mechanics.....	3	C.E. 92. Mechanics.....	3
M.E. 82. Steam Engineering	3	E.B. 3. General Economics..	3	Math. 43. Engin. Calculus..	3
M.E. 53. Mfg. Methods.....	1	M.E. 54. Mfg. Methods.....	1	M.E. 55. Mfg. Methods.....	1
P.E. 15. Hygiene.....	2	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+
M.S. and P.E. or N.S.....	+				

JUNIOR

A.E. 101. Aerodynamics....	3	A.E. 100. Power Plants and and Instruments.....	2	A.E. 103. Airplane Perform.	3
A.E. 171. Aircraft Mech....	3	A.E. 104. Laboratory Meth- ods and Equipment.....	2	A.E. 173. Adv. Aircraft Mch.	3
C.E. 141. Hydraulics.....	3	A.E. 172. Aircraft Mech....	3	E.E. 121. Alternating Currents.	4
M.E. 111. Machine Design..	3	E.E. 101. Direct Currents..	4	E.E. 122. Alt. Current Lab...	2
Comp. 100. Technical Composition.....	3	E.E. 102. D.C. Lab.....	2	M.E. 167. Engin. Materials..	3
		M.E. 112. Machine Design..	3	M.E. 104. Manufacturing Methods.....	1

SENIOR

A.E. 111. Airplane Design..	3	A.E. 102. Adv. Aerodynamics	3	M.E. 183. Thermodynamics and Refrigeration.....	5
A.E. 141. Aerial Propulsion.	3	A.E. 112. Advanced Airplane Design.....	3	A.E. 190. Seminar.....	3
E.B. 57. Business Law....	3	M.E. 198. Gas Engines.....	3	Electives*	8
A.E. 105. Wind Tunn. Lab.	1	Electives*.....	7		
†Comp. 102. Engr. for Engr.	3				
Electives*.....	3				

The total number of credits for graduation must include Physical Education 15 for men, or Physical Education 4, 6, 8, or 10 for women.

†Composition 101 (see electives) may be substituted.

*Not less than 9 elective credits shall be obtained from additional aeronautical engineering courses. Electives must in all cases be approved in advance by the head of the department.

For non-technical electives, see page 143.

Chemical Engineering

Leading to the Degree of Bachelor of Science in Chemical Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 51. Industrial Chemical Calculations....	2	Chem. 52. Industrial Chemical Calculations....	2	Chem. 53. Industrial Chemical Calculations....	2
Physics 97. Engineering....	5	Physics 98. Engineering....	5	Physics 99. Engineering....	5
Math. 41. Engin. Calculus..	3	Chem. 110. Quant. Analysis..	5	Chem. 101. Adv. Qual. Anal..	5
Chem. 109. Quant. Analysis	5	M.E. 82. Steam Engin.....	3	M.E. 83. Steam Engin. Lab..	3
M.S. and P.E. or N.S.....	+	Phys. Educ. 15. Hygiene....	2	M.S. and P.E. or N.S.....	+
		M.S. and P.E. or N.S.....	+		

JUNIOR

Chem. 121. Chemistry of Engineering Materials....	5	Chem. 122. Inorganic Chemical Industries.....	5	Chem. 123. Organic Chemical Industries.....	5
Chem. 131. Organic Chem..	5	Chem. 132. Organic Chem....	5	C.E. 92. Mechanics.....	3
E.E. 101. Direct Currents..	4	E.E. 121. Alternating Currnts.	4	Comp. 100. Tech. Comp....	3
E.E. 102. Direct Currents	4	E.E. 122. Alternating Currents Laboratory.....	2	M.E. 55. Mfg. Methods.....	1
Laboratory.....	2			M.E. 54. Mfg. Methods.....	1
				Electives.....	3

SENIOR

Chem. 181. Physical and Theoretical Chemistry....	5	Chem. 182. Physical and Theoretical Chemistry....	5	Chem. 173. Unit Operations..	3
Chem. 171. Unit Operations	5	Chem. 172. Unit Operations	5	Chem. 178. Thesis.....	1
Chem. 176. Thesis.....	2	Chem. 177. Thesis.....	2	Electives.....	11
M.E. 111. Machine Design	3	Electives.....	4		

The total number of credits for graduation must include Physical Education 15 for men, or Physical Education 4, 6, 8, or 10 for women.

Electives must in all cases be approved in advance by the head of the department.

For non-technical electives, see page 143.

Civil Engineering

Leading to the Degree of Bachelor of Science in Civil Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97. Engin. Physics..	5	Physics 98. Engin. Physics..	5	Physics 99. Engin. Physics..	5
Math. 41. Engin. Calculus..	3	M.E. 82. Steam Engin.....	3	C.E. 59. Adv. Surveying....	4
C.E. 95. Mechanics.....	3	C.E. 58. Transportat. Engin..	4	E.B. 3. Gen. Economics....	3
C.E. 57. Transport. Surv....	4	C.E. 96. Mechanics.....	3	Comp. 100. Tech. Comp....	3
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	Phys. Educ. 15. Hygiene....	2
				M.S. and P.E. or N.S.....	+

JUNIOR

C.E. 142. Hydraulics.....	5	C.E. 143. Hydraulic Engin... 5	E.B. 57. Business Law.....	3
C.E. 171. Structural Anal... 3		C.E. 172. Structural Anal... 3	C.E. 121. Rds., Pavements... 3	
E.E. 103. Direct Currents... 3		C.E. 162. Materials of Construction.....	C.E. 150. Sanitary Engin... 3	
E.E. 104. Dir. Cur. Lab... 1		E.E. 123. Alt. Currents... 3	C.E. 173. Structural Anal... 3	
Geol. 105. Petrology as Applied to Engineering... 5		E.E. 124. Alt. Cur. Lab..... 1	C.E. 163. Materials— Timber and Steel.....	3

SENIOR

C.E. 175. Structural Design. 4	C.E. 176. Structural Design.. 4	C.E. 177. Structural Design.. 3
C.E. 158. Sewage Disposal or	C.E. 123. Highway and	C.E. Group Requirements... 3
C.E. 123. Highway and	Railway Economics, or	Non-technical electives*.... 9
Railway Economics..... 3	C.E. 158. Sewage Disposal... 3	
C.E. 145. Hydraulic Mach., or	C.E. 157. Reclamation or	
C.E. 157. Reclamation.... 3	C.E. 145. Hydraulic Mach... 3	
C.E. Group Requirements... 3	C.E. Group Requirements... 3	
Non-technical electives*.... 3	Non-technical electives*.... 3	

*Non-technical electives (12 credits) must include Composition 101 or 102 or Speech 40 or 103.

C.E. group requirements must be satisfied by *approved* elections from the following advanced courses offered by the department of civil engineering:

	<i>Credits</i>
C.E. 109. Engineering Relations.....	3
C.E. 124. Highway Design.....	3
C.E. 128. Transportation Administration.....	3
C.E. 147. Hydraulic Power.....	3
C.E. 154. Sanitary Design.....	3
C.E. 155. Water Supply Problems.....	3
C.E. 166. Soil Mechanics.....	3
C.E. 167. Soil Mechanics.....	3
C.E. 181. Advanced Structures.....	3
C.E. 182. Advanced Structures.....	3
C.E. 183. Advanced Structures.....	4
C.E. 191, 193, 195. H, M, S, W, or T* Special Senior Courses.....	3-5

*Hydraulics (H), Materials (M), Structural (S), Sanitary (W), and Transportation (T).

Electives must in all cases be approved in advance by the head of the department.

For non-technical electives, see page 143.

Commercial Engineering

Leading to the Degree of Bachelor of Science in Commercial Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97. Engin. Physics..	5	Physics 98. Engin. Physics..	5	Physics 99. Engin. Physics..	5
Math. 41. Engin. Calculus..	3	Math. 42. Engin. Calculus..	3	M.E. 83. Steam Engin. Lab..	3
M.E. 81. Mechanism.....	3	C.E. 91. Mechanics.....	3	Comp. 100. Tech. Comp.....	3
M.E. 82. Steam Engin.....	3	E.B. 3. Gen. Economics.....	3	C.E. 92. Mechanics.....	3
M.E. 53. Mfg. Methods.....	1	M.E. 54. Mfg. Methods.....	1	M.E. 55. Mfg. Methods.....	1
M.S. and P.E. or N.S.....	+	Phys. Educ. 15. Hygiene.....	2	M.S. and P.E. or N.S.....	+
		M.S. and P.E. or N.S.....	+		

JUNIOR

E.E. 101. Direct Currents..	4	E.E. 121. Altern. Currents..	4	E.B. 110. Accounting	
E.E. 102. Dir. Cur. Lab....	2	E.E. 122. Alt. Cur. Lab....	2	Analysis and Control.....	5
E.B. 54. Business Law.....	3	E.B. 55. Business Law.....	3	C.E. 142. Hydraulics.....	5
E.B. 62. Prin. of Account... 5		E.B. 63. Prin. of Account... 5		Electives.....	5
Electives.....	3	Electives.....	3		

SENIOR

M.E. 167. Engin. Materials	3	M.E. 111. Machine Design...	3	M.E. 112. Machine Design...	3
E.B. 154. Cost Accounting..	5	E.B. 101. Scientific Mgm't...	5	E.B. 121. Corp. Finance.....	5
Electives.....	6	E.B. 103. Money & Banking	5	Speech 103. Extempore.....	3
		†Comp. 102. For Engineers..	3	Electives.....	5

The total number of credits for graduation must include Physical Education 15 for men, or Physical Education 4, 6, 8, or 10 for women.

Electives must in all cases be approved in advance by the head of the department.

Not less than 17 elective credits shall be technical (engineering).

For non-technical electives, see page 143.

†Composition 101 (see electives) may be substituted.

Electrical Engineering

Leading to the Degree of Bachelor of Science in Electrical Engineering.

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Math. 41. Calculus.....	3	Math. 42. Calculus.....	3	Physics 99. Light and Heat..	5
Physics 97. Mechanics.....	5	E.E. 109. Direct Currents... 5		E.E. 111. D.C. Mach.....	3
M.E. 81. Mechanism.....	3	E.E. 110. Dir. Cur. Lab....	2	E.E. 112. Dir. Cur. Lab....	4
M.E. 82. Steam.....	3	M.E. 83. Steam Laboratory..	3	C.E. 91. Mechanics.....	3
M.E. 53. Mfg. Methods....	1	M.E. 54. Mfg. Methods....	1	M.E. 55. Mfg. Methods....	1
M.S. and P.E. or N.S.....	+	P.E. 15. Hygiene.....	2	M.S. and P.E. or N.S.....	+
		Mil. Sci. or Naval Sci.....	+		

JUNIOR

C.E. 92. Mechanics.....	3	E.E. 161. Alt. Currents....	4	E.E. 163. Alt. Currents....	4
E.E. 152. Machine Design..	3	E.E. 162. Alt. Cur. Lab....	4	E.E. 164. Alt. Cur. Lab....	5
E.E. 159. Alt. Current....	3	C.E. 142. Hydraulics.....	5	M.E. 167. Engin. Materials..	3
M.E. 111. Machine Design	3	M.E. 112. Machine Design..	3	†Comp. 102. For Engineers..	3
Comp. 100. Tech. Comp....	3				

SENIOR

E.E. 181. Vacuum Tubes... 4	E.E. Group Electives*..... 7	E.E. Group Electives*..... 15
E.E. 182. V.T. Laboratory.. 2	**Physics, Atomic, or	
E.E. 195. El. Trans..... 3	E.E. Group Electives..... 5	
E.E. 196. E.T. Laboratory.. 4	E.B. 3. Economics..... 3	
E.E. Group Electives*..... 3		

Electives must in all cases be approved in advance by the head of the department.

Twelve credit hours of group requirements must be satisfied by electives from advanced E.E. courses.

†Composition 101 may be substituted.

**Not offered in 1940-1941.

*See list below.

ELECTRICAL ENGINEERING GROUP OF RECOMMENDED ELECTIVES

<i>Credits</i>	<i>Credits</i>
E.E. 141. Illumination..... 3	E.B. 57. Business Law..... 3
E.E. 154. Design of Electrical Apparatus.... 4	English Comp. 101, 103 (each)..... 3
E.E. 171. Electric Railways..... 4	English Speech 103..... 3
E.E. 173. Central Stations..... 4	French 4, 7, 37 (each)..... 3
E.E. 175. Power Transmission..... 5	German 5, 60 (each)..... 3
E.E. 183. Radio..... 5	History 149, 150 (each)..... 5
E.E. 185. Telephone Transmission..... 5	M.E. 108. Production Management..... 3
E.E. 188, 190, 192. Research (each)..... 2 to 5	M.E. 109. Factory Cost Accounting..... 3
E.E. 191, 193. Adv. Circuit Theory (each).... 3	M.E. 183. Thermodynamics..... 5
E.E. 194, 197. Seminar (each)..... 5	M.E. 200. Vibrations..... 3
E.E. 198. Adv. Electric Transients..... 2 to 5	Physics 115. Photography..... 4
A.E. 83, 101. Aerodynamics (each)..... 3	Physics 101, 102. Atomic (each)..... 3
Chem. 111. Quant. Analysis..... 5	Physics 195, 196. Laboratory (each)..... 4
Chem. 121, 122. Engin. Materials (each).... 5	Pol. Sci. 111, 113 (each)..... 5
Chem. 131, 132. Organic (each)..... 5	Psychology 2, 21 (each)..... 5
C.E. 145. Hyd. Machinery..... 3	Adv. Mil. Sci. (Coast Artillery)..... 9
C.E. 171, 172. Structural Analysis (each).... 3	Adv. Naval Science..... 9

For non-technical electives, see page 143.

Mechanical Engineering

Leading to the Degree of Bachelor of Science in Mechanical Engineering

FRESHMAN

(The same for all curricula. See above.)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 97. Engin. Physics..	5	Physics 98. Engin. Physics..	5	Physics 99. Engin. Physics..	5
Math. 41. Engin. Calculus..	3	Math. 42. Engin. Calculus..	3	M.E. 83. Steam Engin. Lab..	3
M.E. 81. Mechanism.....	3	C.E. 91. Mechanics.....	3	Comp. 100. Tech. Comp.....	3
M.E. 82. Steam Engin.....	3	E.B. 3. Gen. Economics....	3	C.E. 92. Mechanics.....	3
M.E. 53. Mfg. Methods....	1	M.E. 54. Mfg. Methods....	1	M.E. 55. Mfg. Methods....	1
M.S. and P.E. or N.S.....	+	Phys. Educ. 15. Hygiene....	2	M.S. and P.E. or N.S.....	+
		M.S. and P.E. or N.S.....	+		

JUNIOR

E.E. 101. Direct Currents..	4	E.E. 121. Alternating Cur....	4	C.E. 142. Hydraulics.....	5
E.E. 102. Dir. Cur. Lab....	2	E.E. 122. Alt. Cur. Lab....	2	†Comp. 102. For Engineers..	3
M.E. 123. Engines & Boilers..	2	M.E. 111. Machine Design... 3		M.E. 112. Machine Design... 3	
M.E. 151. Experim. Engin..	3	M.E. 124. Engines & Boilers..	3	M.E. 153. Experim. Engin... 3	
M.E. 105. Adv. Mfg. Meth..	1	M.E. 152. Experim. Engin..	3	M.E. 107. Production	
Electives.....	3	M.E. 106. Adv. Mfg. Meth... 1		Planning.....	1

SENIOR

E.B. 57. Business Law.....	3	M.E. 114. Machine Design... 2		M.E. 115 or 199. Steam or	
M.E. 113. Machine Design..	2	M.E. 167. Engin. Materials..	3	Gas Engine Design.....	3
M.E. 183. Thermodynamics		M.E. 182. Heat. & Ventilat... 3		M.E. 184. Power Plants.....	5
and Refrigeration.....	5	M.E. 198. Gas Engines.....	3	M.E. 195. Thesis.....	3
Electives.....	5	Electives.....	4	Electives.....	5

The total number of credits for graduation must include Physical Education 15 for men, or Physical Education 4, 6, 8, or 10 for women.

Electives must in all cases be approved in advance by the head of the department.

For non-technical electives, see below.

When practicable, it is recommended that thesis be taken in the winter quarter.

†Composition 101 (see electives) may be substituted.

SUGGESTED ELECTIVES

Each student is expected to take at least twelve credits of electives from the following list, unless excused by the head of his department.

<i>Anthropology.</i> 51, 52, 53, 101.	<i>Liberal Arts.</i> 1, 11.
<i>Astronomy.</i> 1.	<i>Mathematics.</i> 114, 115.
<i>Bacteriology.</i> 101, 102.	<i>Metallurgy.</i> 140.
<i>Economics and Business.</i> 54, 55, 56;	<i>Oceanography.</i> 101.
62, 63; 121, 122.	<i>Oriental Studies.</i> 90, 91, 50.
<i>English.</i> Composition: 101, 102, 103;	<i>Philosophy.</i> 1, 2, 5, 101-102-103.
literature: 64, 65, 73, 97, 98, 99, 104, 106,	<i>Physics.</i> 54, 101-102, 115.
141, 142, 143, 164, 165, 166; speech: 40,	<i>Physiology.</i> 53, 54.
43, 103.	<i>Political Science.</i> 111, 113, 121, 127,
<i>French.</i> 4, 5, 6, 137, 138, 139.	155, 156.
<i>Geography.</i> 102, 170.	<i>Psychology.</i> 1, 21.
<i>Geology.</i> 105, 107.	<i>Sociology.</i> 1, 140, 150.
<i>German.</i> 5, 60.	<i>Zoology.</i> 16, 17.
<i>History.</i> 5, 10, 144, 145, 149, 150.	

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

Military training has been given at the University of Washington since 1875 with the exception of a brief interval in the present century.

The department of Military Science and Tactics has been established not only for the purpose of teaching the fundamentals of military science but also certain essentials of organization and leadership which are indispensable to a young man's industrial or professional career.

Uniforms and Allowances

The University having adopted a distinctive uniform for all students in the department of military science and tactics, each student who has been accepted for enrollment and training in this department will be issued a uniform and charged a uniform fee to cover the cost. For the year 1940-1941 the fee will be approximately \$15.00. This amount will be deposited by the student at the time he takes the physical examination required by the University, provided he passes the physical examination successfully. This uniform may be worn daily thus saving civilian clothes; it must be worn at such times as the Professor of Military Science and Tactics may direct, and will become the personal property of the student after the first three quarters in the R.O.T.C.

At the end of the second year the student will be reimbursed for his uniform fee by the University in the amount allowed by the federal government which currently is \$9.00 for the second year.

The uniform prescribed for advanced students is the regulation army officer's uniform, with appropriate R.O.T.C. insignia. The federal government will advance part of the cost of the uniform, at present \$29.00, at the beginning of the school year.

The federal government made the following allowances to advanced course students for the year 1939-1940; uniform \$36.00; commutation of rations, 25 cents per day for two years less time spent in summer camp; pay while in summer camp, 70 cents per day. This total approximates \$175.00 for the two-year course.

The summer camp is held annually, for a period of six weeks, commencing about the middle of June. The student attends the camp after the completion of his first year in the advanced course. During the time he is in attendance at camp he is allowed food, clothing, shelter, medical treatment and hospitalization and 70 cents per day, and in addition transportation to and from camp.

Awards and Honors

Honor Graduates. At the close of the academic year, the University may designate as Honor Graduates 5 per cent of the total number of students enrolled in the second year Advanced Course of each Unit of the R.O.T.C. on March 1st of that year. Students so designated will have completed the prescribed R.O.T.C. four-year course and will be selected from the academic graduates of the current year. (Graduates of the R.O.T.C. Advanced Course in previous years are eligible for the designation.) Only those who have been selected by the President of the University for their scholastic excellence, and recommended by the Professor of Military Science and Tactics as possessing outstanding qualities of leadership, character, and aptitude for military service will be designated as Honor Graduates.

Applications from prospective Honor Graduates who are candidates for Commission in the Regular Army will be submitted annually to a Board of Regular Army Officers who will visit the University during the month of February each year.

Regular Army Active Duty Appointments (Thomason Act). Based upon a quota fixed annually by the War Department, students who have completed their courses in the Reserve Officer's Training Corps will be selected for one year of active duty training with the Regular Army and during such period will receive the pay and allowances of a second lieutenant. Ten per cent of those undergoing such training will be commissioned in the Regular Army at the end of the period on the same basis as graduates from West Point.

Army Air Corps Training. The Regular Army Air Corps offers a one-year course of instruction in flying, with ration and clothing allowances in addition to pay at \$75.00 per month. Candidates must be between 20 and 27 years of age, must have completed one-half or more of the necessary credits for graduation, and must pass a special examination. Appointments are competitive; university graduates who have completed the Advanced R.O.T.C. courses, and other university graduates, have higher priorities than non-graduates. Graduates of the course are rated as second lieutenants, Air Corps Reserve, and may be accepted for active duty with the Regular Army for five years at regular officer's pay. A limited number may be accepted for Regular Army commissions.

Scabbard and Blade. This is a national military honor society with local chapters, called companies, located at 78 leading colleges and universities. Their purpose is primarily to raise the standard of military education. Membership is limited to cadet officers with honor grades in military or naval science.

Washington Rifles. This is a local drill team organization. Membership is limited to Basic Course Cadets who are highly proficient in close order drills and ceremonies. Drill is pursued as a recreational exercise, and to attain higher individual proficiency, for which suitable awards are made.

Junior Reserve Officers' Association. A national organization of reserve officers exists throughout the country. The purpose is to build up interest in the problems of national defense for the United States. Junior associations in colleges and universities permit cadet officers to participate in the association.

Military Training Certificate. Upon application a military training certificate will be issued to each student completing his instruction in the Basic Course, R.O.T.C. This certificate will show the course pursued and the military qualification attained.

Medals of Merit. The Department of Washington Reserve Officers' Association of the United States presents annually a Medal of Merit to an outstanding cadet field officer in each unit.

Leadership Prizes. (a) The Seattle Chapter, Reserve Officers' Association of the United States, presents annually an officer's saber to the outstanding cadet captain in command and leadership in the Infantry Unit.

(b) The University Post No. 11, American Legion, presents annually an officer's saber to the outstanding cadet captain in command and leadership in the Coast Artillery Unit.

Junior Military Prize. Members of the Non-commissioned Officers' Training Camp, University of Washington, 1918, established a fund, the income of which shall be utilized as a prize to be presented to the student completing his junior year with the highest honors in military science in each unit.

Junior Military Medals. (a) The United States Coast Artillery Association presents annually a medal to the student in the Coast Artillery Unit completing his junior year with honors in military science.

(b) The Military Order of the Loyal Legion of the United States, Commandery of the State of Washington, presents annually a medal to the student in the Infantry Unit completing his junior year with honors in military science.

Honor Basic Student Prizes. Seattle Post No. 1, American Legion, presents annually a medal to the outstanding basic student in each unit.

Scabbard and Blade Ribbons. Appropriate silk badges are awarded to the outstanding students in Military Science and Tactics by the Scabbard and Blade Society as follows:

(a) First year. On a basis of one to each thirty students. Awards will be made on the completion of the first year Basic Course. Ratings will be on the student's standing in theoretical and practical work, on leadership in Infantry Drill, and on promptness and regularity in attendance.

(b) Second year. On a basis of one to each twenty students. Awards will be made on completion of the fifth quarter Basic Course and will cover the fourth and fifth quarters only, on the same basis as the first-year awards.

DEPARTMENT OF NAVAL SCIENCE AND TACTICS

All male students in the University who are American citizens, and are not physically disqualified, are required to take military training throughout the first two years of residence. The four-year course in Naval Science and Tactics prescribed by the Navy Department for units of the Naval Reserve Officers' Training Corps, may be substituted by the student for military training. Enrollment in this course is limited by the Navy Department and students will be selected for enrollment by the Professor of Naval Science and Tactics from those applying. The course in Naval Science and Tactics leads to a commission as ensign in the United States Naval Reserve.

Graduates Commissioned in Navy Reserve

Students who have successfully completed the course in naval science will be given a certificate showing such completion. Those who have successfully completed the course will, if recommended by the President of the University and the Professor of Naval Science and Tactics, be given a commission in the U. S. Navy Reserve.

Summer Cruises

For those students regularly enrolled in the Naval R.O.T.C., a summer cruise without expense to the student is generally, but not always offered. Usually a four-week cruise on a battleship to Hawaiian waters is offered during the summer at the end of the freshman and sophomore years, which approximately one hundred Basic Course students may take each summer if they desire. Practical instruction is given on the cruise in navigation (for sophomores), seamanship and general ship's duty at deck and engineering stations. As this cruise is not required, no university credits is given for it.

Advanced Course students must take the Advanced Course cruise prior to receiving a commission. University credit is given.

Fees and Expenses

Other than the regular University tuition fees there is no extra expense to the students regularly enrolled in the Naval R.O.T.C. On enrollment, an outfit of uniforms is furnished the students by the Navy Department. The uniform must be returned if the four years of naval training are not completed.

The Navy Department has authorized the Professor of Naval Science and Tactics to accept a limited number of students as supernumeraries, or Naval Science Students. As no appropriations are available for these supernumeraries, students taken as Naval Science Students will be required to pay for their own uniforms.

Advanced course students are paid \$25 a day, as subsistence allowance while taking that course. This amounts to about \$90 per year. In addition, advanced course students are paid the pay of apprentice seamen (\$21 per month) during the summer cruise. All students are given subsistence while cruising and are allowed transportation and subsistence between the University and the port of embarking for the cruise.

Obligations Incurred

Entering freshmen making application for enrollment in the course of naval science must agree to fulfill the following obligations and agree to accept a commission in the Navy Reserve at the end of the four years' course in the Naval R.O.T.C.

1. Elect naval science as one of their courses in the University, for four full years.

2. Submit evidence of citizenship.
3. Submit to physical examination prior to enrollment, and yearly thereafter.
4. Agree to be vaccinated for small-pox and given typhoid prophylaxis during freshman year.
5. Devote five hours per week in attendance of the course in naval science and such other times as may be necessary properly to prepare their lessons.
6. Wear uniforms as required for drills and class room work, and to submit to naval discipline while under instruction in naval subjects and during the summer practice cruise.
7. Take the necessary courses in mathematics as part of their regular university program.
8. Make one advanced summer cruise prior to receiving commission in the Navy Reserve.

Description of Courses

For description of courses offered by the College of Engineering, see pages 161 ff.

COLLEGE OF FORESTRY

Hugo Winkenwerder, Dean, 206 Anderson Hall

Entrance Requirements

For admission to the College of Forestry, the student must present 12 units* of high school credit, belonging normally to the last three years of the high school curriculum. At least six of these units must be in academic subjects and should include the following:

Advanced algebra	½ unit
Plane geometry	1 unit

The College of Forestry further recommends that prospective students include a year of physics in their high school course of study.

Qualifying examinations are required in elementary composition. Applicants who fail in this examination must register in Comp. A without credit.

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

Fellowships, Scholarships, Prizes. See page 67.

Curricula

Undergraduate Work. For the degree of bachelor of science in forestry the student must complete, in addition to required subjects outlined in the curriculum, enough electives to make a total of 180 credits, exclusive of the basic military or naval science and / or physical education. Electives may be selected from forestry, lumbering, engineering or the botanical, chemical, zoological, geological or economic sciences, the subjects to be approved by the student's class adviser. Ordinarily not more than 25 elective credits in any department other than forestry will be accepted for graduation.

*A "unit" is applied to work taken in the high school. 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 thirty-six weeks.

Grades in Military Science and Physical Education are not considered in determining grade point averages in the College of Forestry.

Advanced Degrees. See Graduate School section, page 150, for general University requirements. For specific requirements, see Announcement of the Graduate School, available upon request.

Choice of Electives. In 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 the class advisers unless such deviation is imperative.

Lower Division

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Bot. 10. Foresters'.....	4	Bot. 11. Foresters'.....	4	For. 1a. Dendrology.....	3
For. 2. Introduction.....	2	For. 3. Introduction.....	2	For. 4. Protection.....	3
Math. 21. Trigonometry....	5	Comp. 1. Composition.....	5	Math. 13. Statistical Meth...	5
Physics 1 or 4. General.....	5	Physics 2 or 5. General.....	5	Physics 3 or 6. General.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

SECOND YEAR

For. 1b. Dendrology.....	3	For. 60. Mensuration.....	4	<i>Sophomore Field Trip*</i>	
For. 15. Gen. Lumbering... 4		G.E. 7. Engin. Drawing....	3	For. 40. Silviculture.....	2
Chem. 1 or 21. General....	5	Chem. 2 or 22. General....	5	For. 62. Mensuration.....	6
For. 5. First Aid.....	2	For. 121. Silvics.....	3	C.E. 56. Forest Surveying... 8	
Elective.....	2	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+
M.S. and P.E. or N.S.....	+				

*Owing to the impossibility of accommodating more than 50 students at the Pack Forest at one time enrollment will be limited to that number and the course will be repeated during the summer quarter. The total number of required credits in Physical Education must include P.E. 15.

Upper Division

Beginning with the upper division the student will, with the approval of his faculty adviser, elect to follow one of the specialities in forestry. In registering for upper division courses he must include all electives required as prerequisites for the advanced specialized courses. (See prerequisites under description of courses.)

Forest Management Curriculum

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 10. Wood Technology..	3	For. 11. Wood Structure....	3	E.B. 3. Gen. Economics....	3
For. 115. Protection.....	3	For. 158. Utilization.....	5	For. 105. Wood Preservation	3
For. 122. Silvicultural Mth.	5	For. 140. Forest Construction	4	Bot. 111. For. Pathology....	5
For. 104. Timber Physics...	5	Elective.....	3-5	Elective.....	5

FOURTH YEAR

For. 126. Forest Economics.	4	For. 119. Forest Admin.....	3	For. 153. Senior Field	
For. 151. Forest Finance... 4		For. 152. Forest Organization	4	Trip, Management	
For. 185. For. Engineering... 5		For. 171. For. Geography....	4	Students.....	16
Elective.....	3-5	Elective.....	4		

Logging Engineering Curriculum

Majors in Logging Engineering will elect C.E. 57 preferably autumn quarter senior year, For. 186 winter quarter, and For. 187 spring quarter senior year; the latter in place of For. 153. In other respects the curriculum is the same as outlined for Forest Management.

Forest Products Curriculum

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 10. Wood Technology..	3	For. 11. Wood Structure....	3	E.B. 3. Gen. Economics....	3
E.B. 62. Accounting Prin...	5	For. 158. Forest Utilization..	5	Bot. 111. For. Pathology....	5
M.E. 82. Steam Engin.....	3	Elective.....	8	For. 105. Wood Preservation	3
For. 104. Timber Physics...	5			For. 106. Wood Pres. Lab....	2
				Elective.....	3

FOURTH YEAR

For. 183. Milling.....	5	For. 126. For. Economy....	4	For. 184. Manufacturing	
E.B. 57. Business Law....	3	For. 171. For. Geography....	4	Problems.....	5
Elective.....	8	For. 188. Kiln Drying.....	3	For. 189. Wood Pulp.....	5
		Elective.....	5	Elective.....	6

Five-Year Course

Students are advised to look forward to a five-year course in preparation for the degree of bachelor of science in forestry. Progress in forestry is rapid, and competition for the higher places is becoming keen. Practically all of the better forestry colleges are looking forward to a five-year requirement. Five years will allow ample provision for a minor in one of the sciences, in engineering, or in economics, and a broader selection of the more purely cultural subjects. A limited amount of general election is advised, but the student should elect at least 15 credits in a field basic to his specialty so as to fulfill the requirements of a minor in one of the non-forestry groups. Five groups for undergraduate election are advised as follows:

1. Engineering: continuation of mathematics; E.B. 57; M.E. 82 and 83; G.E. 1 and 2; C.E. 58.
2. Botany: 140, 141, 142, 143, 144, 145, 151.
3. Entomology: Zool. 1, 2, 111.
4. Economics: E.B. 1-2, 57, 100.
5. Chemistry: 23, 111, 131, 132, 133.

Description of Courses

For description of courses offered by the College of Forestry, see page 205.

GRADUATE SCHOOL

SPECIAL NOTE: The Announcement of the Graduate School, available upon request, gives specific department requirements for advanced degrees.

Organization. The Graduate School was formally organized in May, 1911. The graduate faculty consists of members offering courses primarily designed for graduate students. The University is constantly increasing the emphasis on graduate work in order that it may be a strong center for advanced study.

Fees

For detailed information concerning fees and expenses, see pages 57-61.

Graduate Fellowships and Scholarships

See pages 67-69.

Admission

Three classes of students are recognized in the Graduate School:

1. Candidates for the master's degree.
2. Candidates for the doctor's degree.
3. Students not candidates for a degree.

Admission. A graduate of the University or any other institution of good standing will be admitted to the Graduate School. 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 is 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 two-fold:

(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.

As soon after matriculation as feasible a candidate for an advanced degree must file with the dean of the Graduate School an outline of his proposed work, on a blank provided for that purpose. This blank is submitted to the advisory committee for acceptance or modification. When it has received approval and the student has been notified, he will be regarded as a candidate for a degree.

Scholarship. A student shall be dropped from the Graduate School when, in the opinion of the dean and the departments concerned in his training, his work does not justify his continuance.

Students on the Staff. Assistants, associates, or others in the employ of the University are normally permitted to carry a maximum of six hours of graduate work if full-time employees, and a maximum of eleven hours if half-time employees. The same regulation applies to teachers in the public schools.

Graduate Study in the Summer. Many departments offer graduate courses during the summer quarter, but these are addressed primarily to candidates for the master's degree. Candidates for the doctorate are in general encouraged to devote the summer to work upon the thesis.

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 the requisite training. 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 undivided academic year must be spent in residence at the University of Washington. If a candidate is otherwise engaged in any regular employment, a correspondingly longer period of study will be required. Before being recognized as a candidate for the degree, a student must be approved by a committee as provided above.

2. Completion of courses of study in a major and one or two minor subjects. This requirement as to the number of minors, however, may in exceptional cases be modified by action of the Graduate Council, making it possible for the candidate to offer more than two minors, or no minor at all. What subjects may be offered as minors shall be determined by the major department with approval of the Graduate Council. Three times as many grade points as credits must be earned on the program for an advanced degree, the grade of "S" being used to indicate satisfactory work in a hyphenated course so far as the course has progressed, such work not to be counted toward a major or minor until the final examination.

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; 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 student expects to take the degree the major and minor departments, supplemented by a representative from the Graduate Council, shall submit the student to a careful oral and written examination (see *The Qualifying Examination* below).

3. The preparation of a thesis, as stated above, embodying the results of independent research. The 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 approved by a committee appointed by the major department of which the instructor in charge of the thesis shall be a member.

4. Examinations as follows:

The Qualifying Examinations. An oral, or written, or oral and written examination covering the general fields and the specific courses in the major and minor fields. 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 minor department, and a representative of the Graduate Council. The qualifying examination will normally be taken not less than two quarters before the final examination.

The Final Examination. An oral, or oral and written examination, before the same committee as above. If the qualifying examination was in all respects satisfactory, the final examination shall be on the field of the thesis and such courses as were taken subsequent to the qualifying examination. If the qualifying examination did not meet with the clear approval of the committee, the candidate's entire program, or such parts thereof as may have been designated by the committee, shall be subjected to review.

If there is a 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. Certificates of proficiency in these languages, based upon examinations given at the University of Washington, must be filed with the dean not less than three months before the qualifying examination. 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 a council, the substitution for these languages will be to the advantage of the student's training.

6. Two copies of the thesis in typewritten form (or library hand) shall be deposited with the librarian for permanent preservation in the University archives, at least two weeks before the date on which the candidate expects to take the degree. Printed instructions for the preparation of thesis manuscripts are available at the library. One copy shall be bound at the expense of the candidate. At the same time a digest of the thesis, not to exceed 3000 words, must be filed in the office of the Graduate School.

The thesis, or such parts thereof, or such a digest as may be designated by the council, shall be printed. The candidate shall contribute \$50 to the publishing fund for theses, for which he shall receive 50 copies of his thesis if it is printed entire or 50 copies of a digest of his thesis. From this fund the library is provided with 400 copies.

7. A statement 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 statement must bear the signatures of all major and minor instructors in charge of the student's work, and of the committee appointed by the major department to pass on the thesis.

Doctor of Education. This degree as offered by the University of Washington is a professional degree intended primarily for administrators and teachers who wish to attain a specialized but broad training in education. It provides for study in all fields of education, with specialization in four (one major and three minors). It further provides for training in the major academic disciplines necessary both to administration and teaching with modern emphasis on correlation and integration.

The requirements for the doctor of education are as follows:

1. Admission. The candidate for the doctor of education must show adequate background training and promise of success in the profession of education. Admission to candidacy and the administration of the requirements for the degree shall be by the Department of Education and the Graduate School, and programs for the degree shall be approved by the Graduate Council.

2. Residence. At least three years (nine quarters) of full-time graduate work beyond the bachelor's degree shall be required, and at least three quarters must be spent in continuous residence at the University.

3. Courses. The candidate shall offer:

- (a) one major field in education (15-20 cr.)
- (b) three minor fields in education (5-10 cr. in each)
- (c) reasonable representation in each of the twelve fields in education (at least one course in fields other than covered in a and b)
- (d) desirable related work in departments other than education (45 cr.)
 - (1) 10 elective hours—arts and letters
 - (2) 10 elective hours—science and mathematics
 - (3) 10 elective hours—social science and history
 - (4) 15 elective hours—foreign language

4. Thesis. A satisfactory thesis representing the equivalent of two full quarters' work (30 cr.) shall be presented.

The requirements for the qualifying examinations and the final examination, for the preparation of the thesis and of the abstract of the thesis, for the final forms for the degree and for the fees are the same as for the degree of doctor of philosophy.

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 these degrees 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 his work must pass review in the examination, and shall not reduce the residence requirement at this University.

2. Completion of a course of study in a major and one or two minor subjects and of a thesis which lies in the major field. The work in the major and minor subjects shall total not less than 36 course hours of which 24 are usually in the major. The thesis normally counts for 9 hours in addition to the course work and lies in the major field. Three times as many grade points as credits must be earned on the program for an advanced degree, the grade of "S" being used to indicate satisfactory work in a hyphenated course so far as the course has progressed, such work not to be counted toward a major or a minor until the final examination.

The requirement of a minor or minors may be waived, but only on recommendation of the major department and with the consent of the Graduate Council.

A reading knowledge of an acceptable foreign language is required for the degrees of master of arts and master of science. These examinations are given approximately three weeks before the end of the autumn, winter and spring quarters, and about two weeks before the end of each summer term. Students are responsible for acquainting themselves at the Graduate School office with the exact dates.

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.

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 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, two copies 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. At the same time a digest of the thesis, not to exceed 1000 words, must be filed in the office of the Graduate School. The thesis must meet the approval of

the librarian as to form, printed instructions for the preparation of thesis manuscript being available at the library. The cost of binding for one copy must be deposited with the thesis.

6. A statement 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 statement must bear the signatures of all instructors in charge of the student's work, and of the instructor in charge of the thesis.

Master of Arts and Master of Science in Technical Subjects. The degrees of master of arts and master of science are given in the following technical subjects: chemical engineering, civil engineering, electrical engineering, mechanical engineering, ceramic engineering, coal mining engineering, geology and mining, metallurgy, metallurgical engineering, mining engineering, forestry, pharmacy, physical education, and home economics. These degrees are designed for students who have taken the corresponding bachelor's degrees in technical subjects. In other respects, the requirements are essentially the same as those for the degree of master of arts and master of science. (See Announcement of the Graduate School, available upon request.)

Master's Degree in Technical Subjects. The master's degree is given in the following technical subjects: economics and business, education, fine arts, forestry and music. The requirements for these degrees are essentially the same as those for the degree of master of arts and master of science, with the exception that all work is in the major. (See Announcement of the Graduate School, available upon request.)

All candidates for advanced degrees must attend the Commencement exercises to receive their degrees in person, unless excused by formal petition to the Dean of the Graduate School.

Graduate Courses

For description of courses, see Description of Courses section, page 160.

SCHOOL OF LAW

See Law School Bulletin, available on request. For Pre-law, see College of Arts and Sciences, page 122. For courses, see page 225.

COLLEGE OF MINES

Milnor Roberts, Dean, 328 Mines Laboratory

Entrance Requirements

For admission to the College of Mines, the student must present 12 units* of high school credit, belonging normally to the 10th, 11th, and 12th years of the high school curriculum. At least six of these units must be in academic subjects and should include the following:

English	two units
Advanced algebra	one-half unit
Plane geometry	one unit
Solid geometry	one-half unit
Physics	one unit
Chemistry	one unit

The additional six units may be chosen from either academic or non-academic subjects. A student who does not present high school chemistry for entrance will normally be expected to earn fifteen credits instead of thirteen credits in chemistry during the freshman year.

* A "unit" is applied to work taken in the high school. 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 thirty-six weeks.

Preparation in Algebra

All students entering any department of engineering will be tested in high school algebra by class work and by an examination given shortly after the beginning of the first quarter. It is essential that students in the engineering courses shall possess a good working knowledge of algebra *at the beginning of their course*, and it is the purpose of the test to secure this by requiring a review of the subject shortly before entering the University. Students failing in the test are not permitted to continue with regular freshman engineering mathematics but are required to take a review of preparatory algebra (Math. 1, College of Arts and Sciences) during the first quarter.

Admission to Sophomore Year

All students in the College of Mines, other than first- and second-quarter freshmen and new students, will be placed on the low scholarship list and referred to the dean of the college for appropriate action whenever their grade-point average for any quarter is below 2.0

No student whose grade-point average in the subjects regularly required in the freshman year of the College of Mines is below 1.80 will be regularly admitted to the sophomore year. When such student has brought his grades to the required average he may apply to the dean for admission.

Degrees

The College of Mines offers specialized courses in mining, metallurgical, and ceramic engineering. The four-year curricula lead to degrees as follows:

- I. Bachelor of science in mining engineering (B.S. in Min.E.).
- II. Bachelor of science in metallurgical engineering (B.S. in Met.E.).
- III. Bachelor of science in ceramic engineering (B.S. in Cer.E.).

Degree with Honors. A degree with honors may be conferred upon any student of the College of Mines who, upon vote of the faculty and of the honors committee, may be declared worthy of the unusual distinction.

Advanced Degrees. See Graduate School section, page 150, for general University requirements. For specific requirements, see Announcement of the Graduate School, available upon request.

Fellowships, Scholarships, Prizes. See page 67.

CURRICULA OF THE COLLEGE OF MINES

Mining, Metallurgical, and Ceramic Engineering

For the Freshman and Sophomore Years in all Curricula

FRESHMAN

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 24. General.....	4	Chem. 25. General.....	4	Chem. 23. General.....	5
G.E. 1. Drawing.....	3	G.E. 2. Drawing.....	3	G.E. 3. Drafting Problems...	3
G.E. 11. Engin. Problems...	3	G.E. 12. Engin. Problems...	3	G.E. 21. Surveying.....	3
Math. 31. Freshman Engin...	5	Math. 32. Freshman Engin...	5	Math. 33. Freshman Engin...	5
M.S. and P.E. or N.S.....	+	P.E. 15. Personal Health....	2	M.S. and P.E. or N.S.....	+
		M.S. and P.E. or N.S.....	+		

SOPHOMORE

Mining 51. Elements.....	3	Mining 52. Methods.....	3	Met. 53. Elements.....	3
Geol. 5. Rocks & Minerals..	5	Chem. 111. Quant. Analysis..	5	Cer. 90. Industrial Minerals..	3
Math. 41. Calculus.....	3	Comp. 100. Tech. Comp.....	3	Geol. 121. Mineralogy.....	5
Physics 97. Engineers.....	5	Physics 98. Engineers.....	5	Physics 99. Engineers.....	5
M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+	M.S. and P.E. or N.S.....	+

Practice in mining or geology or metallurgy or ceramics in summer vacation.

Mining Engineering

Leading to the Degree of Bachelor of Science in Mining Engineering

FRESHMAN AND SOPHOMORE

(The same for all curricula. See above.)

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Min. 101. Milling.....	3	Met. 103. Fuel Technology..	4	Min. 106. Mine Excursion...	1
Met. 101. Fire Assaying....	3	Geol. 124. Petrography.....	3	Met. 102. Met. Lab.....	2
Met. 104. Non-ferrous.....	3	C.E. 92. Mechanics.....	3	Met. 153. Wet Assaying.....	3
Geol. 123. Optical Mineral..	3	E.E. 101-102. Dir. Currents..	6	E.E. 121-122. Alt. Currents..	6
C.E. 91. Mechanics.....	3			Elective.....	3

Mining practice in summer vacation.

SENIOR

Min. 152. Mineral Dressing	4	Min. 103. Mine Rescue Tr...	1	Min. 107. Mine Excursion...	1
Min. 191. Thesis.....	2	Min. 162. Economics.....	4	Min. 151. Mining Engin....	4
Met. 155. Iron and Steel....	3	Min. 192. Thesis.....	2	Min. 182. Min. Indus. Mgmt.	3
Met. 162. Physical Met.....	3	Geol. 127. Economic Geol...	5	Min. 193. Thesis.....	1
Elective*	3	E.B. 3. Gen. Economics.....	3	Elective.....	3
				C.E. 59. Adv. Surveying....	3

*Electives (9 credits) must include one of the following: Comp. 101, 102; Speech 103, or Speech 40.

Electives must in all cases be approved in advance by the head of the department.

Metallurgical Engineering

Leading to the Degree of Bachelor of Science in Metallurgical Engineering

FRESHMAN AND SOPHOMORE

(The same for all curricula. See above.)

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Met. 101. Fire Assaying....	3	Met. 103. Fuel Technology..	4	Met. 102. Met. Lab.....	2
Met. 104. Non-ferrous.....	3	Met. 153. Wet Assaying....	3	Min. 106. Mine Excursion...	1
Min. 101. Milling.....	3	E.E. 101-102. Dir. Currents..	6	E.E. 121-122. Alt. Currents..	6
C.E. 91. Mechanics.....	3	C.E. 92. Mechanics.....	3	E.B. 3. Gen. Economics....	3
Elective*	3			Elective.....	3

Metallurgical practice in summer vacation.

SENIOR

Met. 155. Iron and Steel...	3	Met. 163. Metallography...	3	Met. 166. Adv. Non-ferrous..	3
Met. 162. Physical Metall'gy	3	Met. 165. Met. Calculations	3	Min. 107. Mine Excursion...	1
Min. 152. Mineral Dressing	4	Min. 103. Mine Rescue Tr...	1	Min. 151. Mining Engin....	4
Min. 191. Thesis.....	2	Min. 162. Economics.....	4	Min. 193. Thesis.....	1
Elective.....	4	Min. 192. Thesis.....	2	Elective.....	4
		Chem. 140. Elem. Physical...	3		

*Electives (14 credits) must include one of the following: Comp. 102, Comp. 101, Speech 103, or Speech 40.

Electives must in all cases be approved in advance by the head of the department.

Ceramic Engineering

Leading to the Degree of Bachelor of Science in Ceramic Engineering

FRESHMAN AND SOPHOMORE

(The same for all curricula. See above.)

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Cer. 100. Plasticity, Suspensions and Drying....	3	Cer. 101. Firing.....	3	Cer. 102. Cer. Decoration....	3
Cer. 104. Calculations for Bodies and Glazes.....	3	Cer. 105. Calculations for Drying and Firing.....	3	Cer. 110. Cer. Phys. Chem. Measurements.....	2
Min. 101. Milling.....	3	Met. 103. Fuel Technology..	4	Min. 106. Mine Excursion...	1
C.E. 91. Mechanics.....	3	C.E. 92. Mechanics.....	3	Met. 102. Met. Lab.....	2
Geol. 123. Opt'l Mineral'gy.	3	Elective*	3	E.B. 3. Gen. Economics....	3
				Elective.....	3

Ceramics practice in summer vacation.

SENIOR

Cer. 121. Cer. Prod. Lab.... 5	Cer. 122. Cer. Prod. Lab.... 5	Cer. 123. Cer. Prod. Lab..... 5
Min. 191. Thesis..... 3	Min. 103. Mine Rescue Tr... 1	Min. 107. Mine Excursion... 1
Met. 162. Physical Metal'gy 3	Min. 192. Thesis..... 3	Min. 193. Thesis..... 2
Elective..... 4	Chem. 140. Elem. Physical... 3	Chem. 141. Elem. Physical... 3
	Elective..... 3	Elective..... 4

*Electives (17 credits) must include one of the following: Comp. 102, Comp. 101, Speech 103, or Speech 40.

Suggested electives for students especially interested in

Mining Engineering: Min. 171; M.E. 81, 82, 83; C.E. 142.

Coal Mining: Min. 122, 171, 176; M.E. 81, 82, 83.

Metallurgy: Chem. 141.

Ceramics: Cer. 131, 132, 133; 161, 162, 163; Min. 152, 162; Geol. 124, 125, 128; Physics 109.

General electives: Comp. 102, Speech 103, modern foreign language, E.B. 57.

Electives must in all cases be approved in advance by the head of the department.

Description of these courses, with all those offered in any school or college of the University, will be found in the section of the catalogue known as Description of Courses.

Description of Courses

For description of courses offered by the College of Mines, see page 234.

COLLEGE OF PHARMACY

Forest J. Goodrich, Dean, 102 Bagley Hall

Entrance Requirements

For entrance to the College of Pharmacy, either by certificate or by examination, a student must present 12 units* of credit belonging normally to the last three years of the high school curriculum, which must include at least two units of English, 1 unit of plane geometry and three additional units of academic subjects.

The College of Pharmacy recommends that high school students preparing for pharmacy should include in their schedules one unit of laboratory science and two unit of plane geometry and three additional units of academic subjects.

Admission to Advanced Standing

The American Association of Colleges of Pharmacy requires all member colleges to enforce the following regulation: "No student entering a College of Pharmacy with advanced credit shall be permitted to complete the course in pharmacy in less than three collegiate years; this to become effective for students entering member colleges on and after January 1, 1938."

Advanced Degrees. See Graduate School section, page 150, for general University requirements. For specific requirements, see Announcement of the Graduate School, available upon request.

Fellowships, Scholarships, Prizes. See page 67.

Curricula Required for Graduation

Three four-year curricula are outlined, each leading to the degree of bachelor of science in pharmacy.

The first two years of all curricula are the same and are outlined as follows:

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pharm. 1. General..... 3		Pharm. 2. General..... 3		Pharm. 3. General..... 3	
Pharm. 4. Profession..... 2		Comp. 9. Pharmacy..... 3		Comp. 10. Pharmacy..... 2	
Chem. 8. General..... 5		Chem. 9. General..... 5		Chem. 10. Qualitative..... 5	
Bot. 13. Pharmacy..... 5		Bot. 14. Pharmacy..... 4		Physiol. 7. Human..... 5	
M.S. and P.E. or N.S..... +		M.S. and P.E. or N.S..... +		M.S. and P.E. or N.S..... +	

*A "unit" is applied to work taken in the high school. 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 thirty-six weeks.

SECOND YEAR

Ph. Chem. 5. Quantitative Gravimetric..... 5	Ph. Chem. 6. Quantitative Volumetric..... 5	Ph. Chem. 7. Urinalysis..... 2
Pharm. 9. Prescriptions.... 3	Pharm. 10. Prescriptions.... 3	Ph. Chem. 8. Pharmacopoeial Assay..... 2
Ph'cog. 12. Pharmacognosy.. 3	Ph'cog. 13. Pharmacognosy.. 3	Pharm. 11. Prescriptions.... 3
Chem. 37. Organic..... 5	Chem. 38. Organic..... 5	Ph'cog. 14. Pharmacognosy.. 3
M.S. and P.E. or N.S..... +	M.S. and P.E. or N.S..... +	Chem. 39. Organic..... 5
		M.S. and P.E. or N.S..... +

Optional Curricula. The student, after completing the first two years, the outline of which is common to all courses, must elect to follow one of the following:

1. PHARMACY COMBINED WITH BUSINESS COURSES. (To prepare graduates for positions in retail pharmacy.)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Ph'col. 101. Pharmacology and Toxicology..... 3		Ph'col. 102. Pharmacology and Toxicology..... 3		Ph'col. 103. Pharmacology and Toxicology..... 3	
Pharm. 113. Adv. Prescript. 5		Pharm. 114. Adv. Prescript. 5		Pharm. 115. Adv. Prescript. 5	
Bact. 101. General..... 5		Ph'cog. 104. Microscopy.... 3		Ph'cog. 105. Microscopy.... 3	
E.B. 54. Business Law..... 3		E.B. 55. Business Law..... 3		E.B. 3. General..... 3	
		Approved elective..... 2		Approved elective..... 2	

FOURTH YEAR

Ph'cog. 112. Biologicals.... 3	Pharm. 183. New Remedies.. 3	Pharm. 184. Laws and Journals..... 3
Ph. Chem. 195. Pharmaceutical Chemistry..... 5	Ph. Chem. 196. Pharmaceutical Chemistry..... 5	Ph. Chem. 197. Toxicology.. 5
Approved elective..... 8	Approved elective..... 8	Approved elective..... 8

Total scholastic credits required for graduation—180.

2. THE SCIENTIFIC COURSE. (Prepares students for prescription and hospital pharmacy, manufacturing pharmacists and pharmaceutical chemists.)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Ph'col. 101. Pharmacology and Toxicology..... 3		Ph'col. 102. Pharmacology and Toxicology..... 3		Ph'col. 103. Pharmacology and Toxicology..... 3	
Bact. 101. General..... 5		Ph'cog. 104. Microscopy.... 3		Ph'cog. 105. Microscopy.... 3	
Pharm. 113. Adv. Prescript. 5		Pharm. 114. Adv. Prescript. 5		Pharm. 115. Adv. Prescript. 5	
Approved elective..... 2		Approved elective..... 4		Approved elective..... 4	

FOURTH YEAR

Ph'cog. 112. Biologicals.... 3	Pharm. 183. New Remedies.. 3	Pharm. 184. New Remedies.. 3
Ph. Chem. 195. Pharmaceutical Chemistry..... 5	Ph. Chem. 196. Pharmaceutical Chemistry..... 5	Ph. Chem. 197. Toxicology.. 5
Physics 1 or 4. General..... 5	Physics 2 or 3. General..... 5	Approved Elective..... 8
Approved elective..... 3	Approved elective..... 3	

Total scholastic credits required for graduation—180.

3. PRE-MEDICAL CURRICULUM. (This curriculum with proper selection of elective courses, will give qualified entrance to colleges of medicine. The student graduating from this course and obtaining a degree in medicine has the benefit of training in two separate but mutually beneficial professions.)

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Ph'col. 101. Pharmacology and Toxicology.....	3	Ph'col. 102. Pharmacology and Toxicology.....	3	Ph'col. 103. Pharmacology and Toxicology.....	3
Mod. Foreign Language....	5	Mod. Foreign Language....	5	Mod. Foreign Language....	5
Zoology 1 or 3.....	5	Zoology 2 or 4.....	5	Comp. 2. Composition.....	5
Approved elective.....	2	Approved elective.....	2	or Comp. 37. Argumentation... 5	
				Approved elective.....	2

FOURTH YEAR

Physics 1 or 4. General.....	5	Physics 2 or 5. General.....	5	Physics 3 or 6. General.....	5
Bact. 101. General.....	5	Approved elective.....	10	Approved elective.....	10
Approved elective.....	5				

Total scholastic credits required for graduation—180.

Description of Courses

For description of courses offered by the College of Pharmacy, see page 248.

GRADUATE SCHOOL OF SOCIAL WORK

See Announcement of the Graduate School, available upon request. For courses, see page 270.

DESCRIPTIONS OF COURSES

EXPLANATION

This section contains a list of all courses of study offered in the University. The departments are arranged in alphabetical order.

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 withdrawal of a course, no fee will be charged.

The four-quarter plan has been adopted to enable the University to render larger service. It is more flexible than the semester plan and adds 12 weeks' instruction to the regular year. It is impossible, however, to provide that every course be given every quarter.

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

Two or three course numbers connected by hyphens indicate a series of courses in which credit is given only upon completion of the final course in the series, unless the special permission of the instructor is obtained. Such permission is never granted in beginning foreign languages for less than two quarters' work.

Descriptions of courses in each department include: (1) the number of the course as used in University records; (2) title of the course; (3) quarters in which the course is offered, i.e., A, autumn; W, winter; S, spring; (4) number of credits given, in parentheses; (5) name of instructor; (6) brief description of its subject matter and method.

In the lists of departmental faculties, the first name in each instance is that of the department's executive officer.

AERONAUTICAL ENGINEERING

Professors Eastwood, Kirsten; Associate Professor F. S. Eastman; Assistant Professor Martin; Instructor White.

83. **General Aeronautics.** A,W,S. (3) **White, Martin.**
Descriptive outline of the field of aeronautical engineering. Pr., sophomore standing.
100. **Power Plants and Instruments.** A,W. (2) **Eastman.**
Emphasis on their operating characteristics. Pr., 83.
101. **Aerodynamics.** A,W. (3) **Martin.**
Study of air-flow phenomena and of the aerodynamical characteristics of air-foils and air-foil combinations. Pr., Phys. 97, A.E. 83.
102. **Advanced Aerodynamics.** W. (3) **Martin.**
Mathematical development of air-foil contours; stability problems for various flight maneuvers. Pr., 101, senior standing.
103. **Airplane Performance.** S. (3) **White.**
Pr., 101.
104. **Laboratory Methods and Equipment.** W,S. (2) **White.**
Familiarization with the wind tunnel laboratories and related equipment. Pr., 101.
105. **Wind Tunnel Laboratory.** A. (1) **Martin, White.**
Pr., 104.
- 106, 107. **Advanced Wind Tunnel Laboratory.** W,S. (1 to 3 each quarter) **White.**
Pr., 105, special permission.
111. **Airplane Design.** A. (3) **Martin, White.**
Aerodynamics of airplane design. Pr., 103, 172.
112. **Airplane Design.** W. (3) **Martin, White.**
Structural design of airplanes. Determination of design loads. Pr., 111.
121. **Airships.** S. (3) **Kirsten.**
Lighter-than-air craft, aerostatics, airship design. Pr., 101, 172.
141. **Aerial Propulsion.** A. (3) **Kirsten.**
Methods of screw-propeller design; design of a standard screw-propeller and performance calculations. Pr., 101, 171.
142. **Advanced Aerial Propulsion.** W. (3) **Kirsten.**
Different types of propellers; coordination of propeller with vessel; standard propeller-test methods. Pr., 141.
- *151. **Special Aeronautical Designs.**
161. **Advanced Aeronautical Problems.** A. (3) **Martin.**
Pr., 103, 172.
171. **Aircraft Mechanics.** A,W. (3) **Eastman.**
Stress analysis of basic aircraft parts. Pr., C.E. 92.
172. **Aircraft Mechanics.** W,S. (3) **Eastman.**
Continuation of 171. Pr., 171.
173. **Aircraft Mechanics.** A,S. (3) **Eastman.**
A continuation of 172, including indeterminate structures. Pr., 172.

*Not offered in 1940-1941.

181. **Advanced Airplane Design.** S. (3) Martin.
Pr., 112, 173.
190. **Seminar.** S. (3) Kirsten.
Pr., 102, 112.
- 191, 192, 193. **Research.** A,W,S. (2 to 5 each quarter) Kirsten.
- 211, 212, 213. **Research.** A,W,S. (2 to 5 each quarter) Kirsten.

ANATOMY

Professor Worcester; Assistant Professor ———; Associate Norris.

Gross Anatomy

100. **Anatomy Lectures.** A,W,S. (3) Worcester, ———.
- 101, 102, 103. **General Human Anatomy.** A,W,S. (3 or 6 each quarter) Worcester, Gray.
For pre-medical, nursing, physical education students; open to others. Pr., Zool. 3 and 4 or equivalent.
104. **Topographic Anatomy.** A,W,S. (4) Worcester.
Cross and sagittal sections for correlation. Pr., 101, 102, 103.
108. **Special Dissections.** A,W,S. (†) Worcester, ———.
For physicians or students who have completed the above courses in gross anatomy.

Microscopic Anatomy

105. **Histology.** A, S. (3 or 6) Worcester, ———.
Three credits for Harborview students (normal and abnormal microscopic anatomy).
106. **Embryology.** W. (6) Worcester, ———.
Study of human developmental anatomy. Pr., Zool. 1 or 3, or equivalent.
107. **Neurology.** S. (6) Worcester, ———.
Dissection of the human brain, cord, special organs of sense; comparative developmental history of the central nervous system; microscopic study of the nuclei and fibre tracts. Pr., Zool. 1 or 3, or equivalent. Especially for pre-med students, but open to others.
200. **Research.** A,W,S. (†) Worcester.
Graduate work and research in anatomy for those qualified.

ANTHROPOLOGY

Associate Professor Gunther; Assistant Professor Jacobs; Instructor Ray; Associate Garfield.

51. **Principles of Anthropology.** A,W,S. (5) Staff.
Evolution and heredity as applied to man. Racial classification and its significance.
52. **Principles of Anthropology.** A,W,S. (5) Staff.
Man's social customs, political institutions, art, literature; survey of the anthropological approach to language.
53. **Principles of Anthropology.** A,W,S. (5) Staff.
Prehistoric cultures, prehistory of modern peoples, material cultures of primitive peoples.

†To be arranged.

91. **Theories of Race.** A,W, S. (2) Ray, Jacobs.
Survey of human heredity, causes for race differences; study of race mixtures; history of race theories.
101. **Basis to Civilization.** W. (3) Jacobs.
Primitive normal mentality and abnormality; individual personalities and variability; tribal and regional culture patterns. Pr., 51, 52, or 53, or junior standing.
105. **Invention and Discovery in the Primitive World.** S. (3) Ray.
Fundamental material inventions in the building of cultures. Pr., 51, 52, or 53, or junior standing.
107. **Methods and Problems of Archaeology.** S. (5) Garfield.
Technique of archaeology with analysis of the problems various areas present, together with field experience in this locality.
110. **American Indians.** W. (3) Gunther.
Indian life as a background for modern social and economic problems of this group.
111. **Indian Cultures of the Pacific Northwest.** A. (3) Ray.
Ethnographic study of Indians west of the Rockies from Columbia River through southern Alaska, with special emphasis on the tribes of Washington.
112. **Peoples of the Pacific.** S. (3) Gunther.
Ethnographic study of primitive peoples of the Pacific; brief analysis of effects of European contacts.
114. **Peoples of Central and Northern Asia.** W. (3) Hudson.
Racial and linguistic groups, life and customs of the natives of Turkestan, Asiatic Steppes, and Siberia; relations to the historic nations of Europe and southern Asia.
141. **Primitive Literature.** A. (3) Gunther.
Forms and functions of oral tradition.
142. **Primitive Religion.** W. (3) Ray.
Descriptive survey of primitive religions.
143. **Primitive Art.** S. (3) Gunther.
Aesthetic theories, artistic achievements of preliterate peoples, with museum material for illustration.
150. **General Linguistics.** W. (3) Jacobs.
Anthropological approach to language; psychological, comparative and historical problems; phonetic and morphologic analysis.
151. **American Indian Languages.** S. (3) Jacobs.
Phonetics and morphology of American Indian languages; methods of field research. Pr., 150.
152. **Introduction to Anthropology.** A,W. (5) Gunther.
Survey of the field as a basis for other social sciences. Pr., junior standing.
160. **History of Anthropological Theory.** W. (2) Ray.
Survey of the field of anthropology conducted through discussion of the various schools of thought and their theories.
170. **Primitive Crafts.** S. (5) Gunther, Ray.
Pottery, weaving, basketry, wood-carving, and other techniques involved in primitive material culture. Pr., instructor's permission.
185. **Primitive Social and Political Institutions.** S. (5) Ray.
Pr., 51, 52, or 53, or instructor's permission.

- (*190), 191, 192. Research. W, S. (†) Gunther, Jacobs.
Independent studies in field or campus with seminars and conferences. Pr., instructor's permission.
- 193, 194, 195. Reading Course. A, W, S. (†) Gunther.

Courses for Graduates Only

- 204, 205. Seminar in Methods and Theories. A, W. (3,3) Gunther.
Pr., instructor's permission.
206. Seminar in Indian Administration. S. (3) Gunther.
Deals with problems of administration of Indian affairs and their history; discussion of present social and economic resources of the Indian.
242. Seminar in Theories of Primitive Religion. S. (3) Ray.
Critical examination of various theoretical approaches to the understanding of primitive religions and philosophies. Pr., 142 or instructor's permission
252. Seminar in American Indian Languages. W. (3) Jacobs.
Advanced training in recording and analyzing languages. Pr., 150, 151.

ARCHITECTURE

Professors Thomas, Herrman, Gowen; Associate Professor Pries; Assistant Professor Olschewsky; Lecturer Alden; Instructor Alderman.

- 1-2. Architectural Appreciation. A, W. (2-2) Herrman.
Illustrated lectures giving an historic survey of domestic architecture. General appreciation of architecture.
3. Architectural Appreciation. S. (2) Herrman.
Important periods of architectural history.
- 4-5-6. Elements of Architectural Design. A, W, S. (4-4-4)
Herrman, Olschewsky, Alderman.
Problems in elementary architectural design. To be taken with 7-8-9.
- 7-8-9. Graphical Representation. A, W, S. (1-1-1) Olschewsky.
Elementary principles of orthographic projections, shades and shadows, and perspective. To be taken with 4-5-6.
- 40, 41, 42. Water Color. A, W, S. (2,2,2) Hill.
Still life studies and outdoor sketching in water color. Pr., major in architecture, Art 32, 33, 34.
- 47-48. Elementary Theory of Construction. A, W. (3-3) Sergev, Jensen.
Analysis of fundamental structural problems by application of the laws of equilibrium.
- 51-52-53. History of Architecture. A, W, S. (2-2-2) Thomas.
Technical study of the architecture of Egypt, Western Asia, Greece, Rome, Byzantium, and the Romanesque and Gothic periods. Pr., 3.
- 54, 55, 56. Architectural Design, Grade I. A, W, S. (5,5,5) Gowen, Pries.¹
Problems in design under individual criticism; order problems and simple problems of buildings. Pr., 6

*Not offered in 1940-1941.

†To be arranged.

¹ General criticism and supervision of all courses in Design, Grades I, II, III and Advanced Design, are given by Professor Harlan Thomas, director of the school.

- 101-102-103. **History of Architecture.** A,W,S. (2-2-2) **Herrman.**
The Renaissance; comparative study of the period in European architecture. Pr., 53.
- 104, 105, 106, 107. **Architectural Design, Grade II.** A,W,S. (5,5,5,5)
Herrman, Olschewsky.¹
Advanced problems in design done under individual criticism. Pr., Arch. Design, Grade I.
- 112, 113. **Freehand Drawing.** A, W. (3,3) **Pratt.**
Studies of casts of the human figure. Charcoal, flat wash, and pencil. Pr., Art 32, 33, 34.
117. **Building Construction.** W. (3) **Sergev.**
General principles of structural design; girders, columns and roof trusses in timber and steel as applied by the architect. Pr., C.E. 170.
118. **Building Construction.** S. (3) **Sergev.**
Principles of concrete design; slab, joists, tile and joist columns and the like, as applied by the architect. Pr., 117.
- 120-121-122. **Working Drawings.** A,W,S. (2-2-2) **Olschewsky.**
Lectures on simple building construction. Drafting room practice in working drawings. Pr., junior standing in architectural design.
- 125, 126. **Pencil Sketching.** W,S. (1,1) **Alderman.**
Pencil sketches of architectural subjects—the first quarter from photographs, the second from actual subjects. Pr., sophomore standing, architecture major or permission.
135. **Introduction to City Planning.** W. (3) **Alderman.**
Lectures on history and theory, including circulation system, recreation and open areas, public buildings, control of private development, new towns and garden cities. Pr., majors in Regional Planning or junior in Architecture.
- 140-141, 142. **History of Architectural Ornament.** A,W,S. (2-2,2) **Pries.**
Pr., sophomore standing.
151. **History of Architecture.** S. (2) **Gowen.**
Modern architecture in America and Europe from the middle of the eighteenth century to the present time. Pr., 103.
- 152-153. **Theory of Architecture.** A,W. (2-2) **Gowen.**
Theory of architectural design, relation of composition and scale, planning. Pr., Arch. Design, Grade II.
- 154, 155, 156, 157, 158. **Architectural Design, Grade III.** A,W,S. (5,5,5,5,5)
Gowen, Pries.¹
Advanced design under individual criticism. Pr., Arch. Design, Grade II.
- 160, 161, 162. **Architectural Problems.** A,W,S. (3 to 7 each quarter)
Gowen, Thomas.
Pr., 158.
- 168-169. **Specifications and Materials.** W,S. (2-2) **Alden.**
Specifications and all contract forms used by the architect; modern business methods; ethics and office organization. Properties of materials used in architectural practice. Pr., senior standing, 122.

¹ General criticism and supervision of all courses in Design, Grades I, II, III and Advanced Design, are given by Professor Harlan Thomas, director of the school.

- 180, 181, 182, 183. **Principles of City Planning.** W, S. (1 to 2 each) Alderman.
Lectures and seminars on history, theory, objects, and scope of city planning; planning technique, development of a comprehensive plan, zoning, sub-division control, site planning, administration, and legislation. To supplement work in City Planning Design courses. Pr., major in City Planning.
- 190, 191, 192, 193, 194. **City Planning Design.** W, S. (5,5,5,5,7) Alderman.
Problems in practical application of theory of city planning to design of towns, cities, and elements in community pattern, including housing groups, shopping centers, and recreational areas. Last quarter includes preparation of thesis material. Pr., major in City Planning.

ART

Professors Isaacs, Patterson; Associate Professors Benson, Foote, Hill; Assistant Professors Molzahn, Penington, Pratt, ———; Associates Curtis, Eckrem, Hensley, Iglehart, Worman.

The School of Art reserves the right to retain student work for temporary or permanent exhibition.

1. **Elementary Painting and Design.** A. (5) ———.
Introductory studio course for the general student rather than the major in art. Drawing, painting, and general design. Varied exercises with lectures.
- *2. **Elementary Painting and Design.**
- 5, 6, 7. **Drawing.** A, W, S. (3,3,3) Patterson, Hill, Curtis, Hensley.
Drawing with charcoal from casts and still life; perspective, introduction to painting, supplementary reading, lectures. Prerequisite for any subsequent course in drawing and painting.
- 9, 10, 11. **Design.** A, W, S. (3,3,3) Benson, Molzahn, Penington, Eckrem, Hensley, Worman.
Design developed through original problems, lectures, discussions, and supplementary reading. Prerequisite for any subsequent course in art.
12. **Art History.** W. (5) ———.
Survey of the main developments in painting and sculpture from prehistoric times through the Renaissance; illustrated with slides and colored reproductions.
- 15, 16. **Laboratory Drawing.** A, W, S. (3,3) Curtis.
The technique of representation with pencil, carbon pencil, pen, and wash, for use in science or other work requiring accuracy and detail. Expression of the third dimension; drawing from the microscope.
20. **Modern Sculpture.** S. (2) Pratt.
Illustrated lectures and demonstrations on the history and appreciation of sculpture.
- 32, 33, 34. **Drawing and Sculpture for Architects.** A, W, S. (3,3,3) Hill, Pratt.
One quarter of sculpture and modeling from casts. Two quarters of drawing from cast ornaments.
- 53, 54, 55. **Design.** A, W, S. (3,3,3) Molzahn, Penington, Iglehart.
Design of simple objects stressing the limiting factors of use and manufacture. Discussions, lectures, and supplementary reading on industrial and commercial design. Pr., 5, 6, 7, 9, 10, 11.
- 56, 57, 58. **Drawing and Painting.** A, W, S. (3,3,3) Patterson, Hill, ———.
Oil and water color painting from still life and casts, introduction to life and outdoor sketching, lectures and reading. Pr., 5, 6, 7.

*Not offered in 1940-1941.

62. **Essentials of Interior Design.** A. (2) Foote.
Lectures on the functional and esthetic treatment of the interior. Illustrated with decorative objects and materials, textiles and lantern slides.
- 65, 66, 67. **Drawing and Painting.** A,W,S. (3,3,3) Patterson, Hill, ———.
Continuation of 56, 57, 58, for majors in painting; outdoor sketching in oil and water color.
- 72, 73, 74. **Sculpture.** A,W,S. (3,3,3) Pratt.
Elementary clay modeling from casts or, for proficient students, from life; compositions and plaster casting. No prerequisite.
- 80, 81, 82. **Furniture Design.** A,W,S. (3,3,3) Foote.
Design, as it applies to furniture. Study of materials and construction. Working drawings, color-plates, and models executed. Pr., 5, 6, 7, 9, 10, 11. Art 83 to be taken with 82.
83. **History of Furniture and Interior Styles.** S. (2) Foote.
Lectures illustrated with stereopticon slides on the history and development of furniture and its architectural backgrounds from the Renaissance to the present time. Research and special papers assigned.
100. **Art Methods.** A. (2) —————.
Summary of aims, objectives, and current methods of teaching and supervising art. Pr., Educ. 70, senior standing in art, consent.
101. **Elementary Interior Design.** W. (2) Foote.
Fundamental problems in interior design including floor and wall plans at scale, and color. For the general student and those wishing to teach art in the public schools. No prerequisite.
102. **Applied Design.** S. (2) Benson.
Open to any student having junior standing in art; required for those majoring in public school art. Simple book-binding, linoleum block printing and work with other materials, with emphasis on interrelations of design, materials, and processes.
- 103, 104. **Pottery.** 103, A,S.; 104, W. (3,3) Worman.
Fundamental clay processes and their application to form and surface treatment. Study of ceramic art in related industries. Composition of clays and glazes. Pr., junior standing in art.
105. **Lettering.** A,S. (3) Benson.
Design in letters and the composition of letters. Exercises in single stroke letters with pen and brush, and problems requiring filled letters. Pr., for art majors, 5, 6, 7, 9, 10, 11; for non-majors, permission.
106. **Commercial Design.** W. (3) Benson.
Posters and other forms of art for advertising. Pr., 105.
- *107, 108, 109. **Portrait Painting.** (Offered in alternate years.)
- 110, 111, 112. **Interior Design.** A,W,S. (5,5,5) Foote.
Technical study of fundamentals of interior design. Includes scaled drawings of floor and wall plans, perspective, study of color, texture, and research in Early American styles. For the special student, general students by permission. Pr., 5, 6, 7, 9, 10, 11. Art 62 to be taken with 110.
116. **Design for Industry.** W. (3) Iglehart.
Study of design in its relation to the modern industrial world. Pr., 55, 105.
- 122, 123, 124. **Sculpture.** A,W,S. (3,3,3) Pratt.
Portrait and figure from life. Compositions and work in terra cotta. Pr., 72, 73, 74.

*Not offered in 1940-1941.

126. **History of Modern Painting.** A. (2) Isaacs.
Painting since the Renaissance. Lectures illustrated with lantern slides and colored reproductions. Research and reports. Pr., sophomore standing.
129. **Appreciation of Design.** W. (2) Benson.
Illustrated lectures on historic design in the minor arts. Reading and reports.
130. **Pottery.** S. (3) Worman.
Advanced problems in form. Clays for ceramic sculpture. Glazes and their application to tile and mosaic. Firing. Study of historic examples and modern tendencies.
- 132, 133, 134. **Advanced Sculpture.** A,W,S. (3,3,3) Pratt.
Continuation of second-year work. Pr., 122, 123, 124.
- 136, 137, 138. **Sculpture Composition.** A,W,S. (3,3,3) Pratt.
Imaginative design; problems met in professional practice. Pr., 72, 73, 74.
- 150, 151. **Illustration.** A,W. (5,5) Molzahn, ———.
Principles of composition applied to book illustration and to the making of prints. Pr., senior standing in art.
- 157, 158, 159. **Design in Metal.** 157, A, S; 158, 159, W, S. (3,3,3) Penington.
Design and construction of objects in copper, pewter, brass, silver, and gold. Emphasis on interrelationships of parts, unity of form and decoration, limitations of materials. Various processes including etching, enameling, stone setting. Supplementary study of old and contemporary examples. Pr., junior standing in art.
- 160, 161, 162. **Life.** A,W,S. (3,3,3) Isaacs, Patterson.
Drawing and painting from the model. Class criticism of original compositions; anatomy. Pr., 56, 57, 58.
- 163, 164. **Composition.** W, S. (5,5) Isaacs.
Development of individuality in painting through creative composition. Reading and reports from works on modern criticism. Pr., *Life*, 3 credits.
166. **Design.** S. (3) Iglehart.
Experimental work in design with emphasis upon commercial application and techniques. Methods of graphic reproduction. Pr., 55.
- 169, 170, 171. **Costume Design.** A,W,S. (2,2,2) Benson.
Costume design and illustration. Supplementary reading and reports. Pr., 5, 6, 9, 10, 11.
- 172, 173, 174. **Interior Design.** A,W,S. (5,5,5) Foote.
Advanced problems in perspective, related to contemporary needs. Research in French styles. For the special student. Pr., 110, 111, 112.
- 175, 176, 177. **Advanced Painting.** A,W,S. (3,3,3) Isaacs.
Pr., 56, 57, 58.
- 179, 180, 181. **Costume Design.** A,W,S. (2,2,2) Benson.
Pr., 169, 170, 171.
- 182, 183, 184. **Oriental Art.** A,W,S. (2,2,2) Savery.
Historical and critical study of the development of the arts in India, China and Japan. Autumn, India; winter, China; spring, Japan.

Suggested courses for commercial art: Art 5, 6, 7; 9, 10, 11; 105, 106, 116, 126; 129; 150, 151; 160, 161, 162, 166; 169, 170, 171; Jour. 130, 131.

Courses for Graduates Only

- *207, 208, 209. Portrait Painting. (Offered in alternate years.)
- 250, 251. Advanced Design. A,W. (3 or 5 each quarter) Molzahn.
Problems of graduate character. Pr., 150, 151.
- 260, 261, 262. Advanced Life Painting. A,W,S. (3 or 5 each quarter) Isaacs.
An intensive course in painting from life.
- 263, 264. Composition. W,S. (3 or 5 each quarter) Isaacs.

ASTRONOMY

Assistant Professor Jacobsen.

1. Astronomy. A,S. (5) Jacobsen.
Solar system, stars, sidereal universe. Pr., two high school units of mathematics.
51. Practical Astronomy. S. (4) Jacobsen.
Methods of determining latitude, longitude, azimuth, time. Pr., 1, trigonometry.
- *101. Astrophysics and Stellar Astronomy.
102. The Solar System. W. (3) Jacobsen.
Motions of the sun, moon, planets. Kepler's, Newton's laws. Pr., 51, calculus. Offered in alternate years.

BACTERIOLOGY AND PATHOLOGY

Associate Professor Henry; Professor Hoffstadt; Assistant Professors Ordal, Weiser; Lecturer Berry; Associate Duchow.

50. Survey of Bacteriology. W,S. (5) Henry, Ordal.
Brief consideration of different fields in bacteriology and their application to everyday life. Course does not count toward a bacteriology major.
100. Fundamentals of Bacteriology. A,S. (5) Henry.
Fundamental factors involved in microbiology. Required of bacteriology majors. Pr., ten credits of botany or zoology and Chem. 132. Bacteriology and food technology majors only.
101. General Bacteriology. A,W,S. (5) Weiser, Hoffstadt.
Pr., Chem. 2 or 22.
102. Sanitary and Clinical Methods. W. (5) Weiser.
Bacterial analysis of water, food, feces and urine. Examination of clinical material used for the diagnosis of disease. Pr., 100 or 101.
103. Public Hygiene. A,S. (5) Hoffstadt.
Lectures only. Pr., junior standing.
104. Serology. S. (5) Hoffstadt.
Types of immunity; immunization of animals and man; study of immune products. Pr., 100 or 101, Chem. 132.
105. Infectious Diseases. A. (5) Hoffstadt.
Study of pathogenic bacteria, and methods of diagnosis of infectious diseases. Students registering for the course are required to receive such diagnostic and prophylactic treatments for the purpose of avoiding accidental infection as shall be designated by the department of bacteriology from time to time. The department of bacteriology reserves

*Not offered in 1940-1941.

the right, throughout the quarter in which the course is given, to exclude any student who, through gross carelessness or negligence, jeopardizes the health of himself or his fellow students. Any student so excluded shall be required to repeat an elementary course in bacteriology before again being admitted to Bact. 105. Pr., 100 or 101.

107. **Microbiology of Food Spoilage.** W. (3) Ordal.
Factors concerned in the control of micro-organisms involved in spoilage. Pr., 100 or 101 and permission of instructor.
110. **Fundamentals of Pathology.** A. (5) Weiser.
The study of the principles concerned in the gross and microscopic tissue changes occurring in disease. Pr., 100 or 101, Anat. 105.
111. **Special Pathology.** W. (5) Weiser.
Gross and microscopic study of the tissues of various organs following special types of injury due to infectious and physical agents, obstructions, chemicals, and other known and unknown causes. Pr., 110.
112. **Special Pathology.** S. (5) Weiser.
Study of the gross and microscopic pathology of diseases of endocrine, dietary, and neoplastic origin. Pr., 110.
- 120, 121, 122. **Applied Bacteriology.** A,W,S. (5,5,5) Henry.
Work in media room, public health, private hospital, or industrial laboratories. Fifteen hours per week. Registration, and letter from director required. For bacteriology majors only. Pr., instructor's permission.
127. **Review of Journals.** W. (1) Hoffstadt.
Pr., 100, or 101 and 105.
- 130, 131, 132. **Industrial Bacteriology.** A,W,S. (5,5,5) Ordal, Henry.
Microbiology of food preparation, industrial fermentations. Pr., 100 or 101 and permission of instructor.

Courses for Graduates Only

201. **Physiology of Bacteria.** A. (5) Henry, Ordal.
Environmental factors influencing bacteria; bacterial metabolism and activities. Open to qualified students with permission of instructor.
202. **Filterable Viruses.** W. (5) Hoffstadt.
Study of representative types of ultramicroscopic agents causing disease in man, lower animals, and plants. Open to qualified students with permission of instructor.
- 204, 205, 206. **Advanced Bacteriology.** A,W,S. (†) Staff.
209. **Seminar.** (†) (No credit) Staff.
- 210, 211, 212. **Research.** A,W,S. (†) Staff.
Open to qualified students after consultation.

BOTANY

*Professors Rigg, Frye, Hotson; Assistant Professors Hanley, Hitchcock, Riley;
Instructor Stuntz*

For those who expect to take only five credits of botany, courses 1, 3, 8, or 5 are recommended. For those who expect to take only ten credits of botany, courses 1 and 2, 1 and 3, or 8 and 1 are recommended.

Courses 1, 5, 10, 13 and 16 are beginning courses, only one of which should be taken. Courses 2, 11, and 14 presuppose that 1, 5, 10, 13 or 16 has been taken.

†To be arranged.

1. **Elementary Botany. A,W. (5)** Riley, assistants.
Structure and functions of roots, stems, leaves, seeds. No botany prerequisite.
2. **Elementary Botany. W. (5)** Riley, assistants.
Types of the great groups of plants from the lowest to the highest. Primarily for non-majors. Pr., 1 or one year high school botany.
3. **Elementary Botany. S. (5)** Hitchcock, assistants.
Plant analysis; field and laboratory work with local flora. No botany prerequisite.
4. **Plants and Civilization. W. (5)** Riley.
Origin, discovery of important plants used for food and clothing; their cultivation and improvement; their effect on civilization. No prerequisites.
5. **Survey of Botany. A, S. (5)** Rigg, assistants.
Outstanding generalizations concerning plants, especially those relating to human welfare. Students who expect to continue with botany should begin with 1 or 3. Three lectures, one quiz, one 2-hour lab. period or field trip.
8. **Genetics. A. (3, lectures only, or 5)** Riley, assistants.
Principles of heredity, their physical basis and application to plant breeding. No prerequisites.
- 10, 11. **Forestry Botany. A,W. (4,4)** Hitchcock, assistants.
Structure and physiology of the higher types of plants, types of the great groups from the lowest up. No prerequisites.
- 13, 14. **Pharmacy Botany. A,W. (5,4)** Rigg, assistants.
Gross structure of vegetative and reproductive parts of seed plants, brief study of spore plants; microscopy of powdered drugs.
16. **Economic Botany. A, S. (5)** Riley, assistants.
Structure of plants and their use by man for food, clothing, shelter.
23. **Plant Ecology. A. (5)** Hanley.
Consideration of the effects of environment on plant succession and survival; the factors which determine vegetation types throughout the world. Pr., 1 or equivalent.
24. **Plant Cultivation. W. (5)** Hanley.
Soils wanted by plants, their care, methods of potting, forcing, and general greenhouse practice. Pr., 1 or equivalent.
25. **Plant Propagation. S. (2, lectures only, or 5)** Hanley.
Germination of seeds; grafting, cuttings, budding, and other forms of propagation; general greenhouse practice. Pr., 1 or equivalent.
101. **Ornamental Plants. S. (3)** Hitchcock.
Recognition of plants used in beautifying yards and parks. Pr., 5 credits in botany.
102. **Textile Fibres. S. (3)** Riley.
Cotton, wool, hairs, linen, jute, ramie, silk, rayon, etc.; their microscopy and staining; permanent mounts and cross sections. Pr., H.E. 25.
- 106, 107, 105. **Morphology and Evolution. A,W,S. (5,5,5)** Frye, Hitchcock.
Morphological study of types to show advances in complexity. Required of all majors. Pr., one year high school botany or ten credits of botany, or Zool. 1 and 2.
111. **Forest Pathology. W,S. (5)** Hotson, assistants.
Recognition and treatment of common wood-destroying fungi. Pr., 11 or 105.
115. **Yeasts and Molds. S. (5)** Hotson.
Their classification, recognition, cultivation, and their relation to the industries and to man. Pr., 15 credits in botany, bacteriology, or zoology.

119. **Plant Histology.** W. (5) Riley, assistants.
Preparation of permanent slides for the compound microscope, and the study of cells.
Pr., 10 credits in botany.
122. **Plant Cyto-Genetics.** S. (3, lectures only, or 5) Riley, assistants.
Chromosomal cytology and its bearing on genetics, taxonomy, and the origin of species.
Pr., 15 credits in botany or zoology, including botany 8 or equivalent.
129. **Plant Anatomy.** S. (5) Riley.
The cellular tissues of plants. Origin and development of the stele.
131. **Mosses.** A. (5) Frye.
Field and laboratory work in the recognition of mosses and liverworts. Pr., 1 year of botany.
- *132. **Algae.**
- 134, 135. **Taxonomy.** A,W. (5,5) Hitchcock.
The flowering plants. Pr., 10 credits of botany, including 3 or equivalent.
- 140, 141, 142. **General Fungi.** A,W,S. (5,5,5) Hotson, assistants.
Morphology and classification of fungi as a basis for plant pathology. Pr., 15 credits of botany.
- 143, 144, 145. **Plant Physiology.** A,W,S. (5,5,5) Rigg, assistant.
Pr., 15 credits of botany and Chem. 22. Desirable prerequisites, Chem. 133, Phys. 2.
151. **Range Plants.** A,S. (3) Hitchcock.
Their recognition, and the characters which make them important as useful or harmful.
Pr., 10 credits in botany.
- 180, 181, 182. **Plant Pathology.** A,W,S. (5,5,5) Hotson.
Diseases of plants and the fungi which produce them. Pr., 142.
199. **Proseminar.** A,W,S. (1 to 15 each quarter) Staff.
Semi-independent work by students. Open only on consultation with the head of the department.
- Teachers' Course in Botany.** (See Educ. 75B.)

Courses for Graduates Only

200. **Seminar.** A,W,S. (1/2) Staff.
Review of recent literature. Only graduate students may obtain credit. Maximum of two credits allowed any one student.
- 205, 206, 207. **Physiology of Marine Plants.** A,W,S. (3,3,3) Rigg.
Pr., Phys. 3, Bot., 145. Chem. 111 and 129, or equivalents. Two lectures, one three-hour lab. period.
- 210, 211. **Phytoplankton.** W,S. (3,3) Phifer.
Given at Friday Harbor laboratories by special arrangement with instructor.
220. **Advanced Fungi.** A,W,S. (2 to 5 each quarter) Hotson.
Pr., 142.
233. **Research.** A,W,S. (2 to 5 each quarter) Staff.
250. **Algae.** A,S. (2 to 5 each quarter) Frye.
Pr., 30 credits of botany.

*Not offered in 1940-1941.

251. Bryophytes.**271, 272, 273. Experimental Morphology.**

279. Colloidal Biology. A,W,S. (5) Rigg.
Pr., 143, Chem. 132. Desirable pr., Chem. 141.

280. Micrometabolism. A,W,S. (5) Rigg.
Pr., 107, 145.

281. Physiology of Fungi. A,W,S. (5) Rigg.
Pr., 142, 145, 280.

CHEMISTRY AND CHEMICAL ENGINEERING

Professors Benson, Beuschlein, Dehn, Norris, Smith, Tartar, Thompson; Associate Professors Kobe, Powell, Robinson; Assistant Professors Cady, Sivertz; Instructors Haendler, West, ———; Associates Lingafelter, Radford, Westfall, ———.

Chemistry**1-2. General Inorganic Chemistry. A,W,S. (5-5)****Powell, Sivertz, Cady.**

Open only to students not having had accredited high school chemistry. Three lectures, one recitation, and two 2-hour lab. periods.

8-9-10. General Chemistry and Qualitative Analysis. A,W,S. (5-5-5) Kelly.

Pharmacy students only. The work in the spring quarter is qualitative analysis. Three lectures and two lab. periods.

21-22. General Inorganic Chemistry. A,W,S. (5-5) Smith, Tartar, Sivertz, Cady.

Open only to students having accredited high-school chemistry. Three lectures, one recitation, and two 2-hour lab. periods.

23. Elementary Qualitative Analysis. A,W,S. (5) Smith, Sivertz.

Three lectures, one recitation, and two 2-hour lab. periods. Pr., 2 or 22, or equivalent.

24-25. General Chemistry. A,W. (4-4) Cady.

For engineering students having accredited high school chemistry. Two lectures, one recitation, and one lab. period.

26. General Chemistry. A,S. (4) Cady.

Continuation of 24-25. Two lectures, one recitation, and one lab. period. Pr., 2 or 22, or 25, or equivalent.

37-38-39. Organic Pharmaceutical Chemistry. A,W,S. (5-5-5) Johnson.

Organic chemicals of the U.S. Pharmacopoeia. Pharmacy students only. Three lectures and two lab. periods. Pr., 10 or equivalent.

55. Forest Products.**56. Forest Soils.**

101. Advanced Qualitative Analysis. A,S. (5) Thompson, Robinson.
Two lectures and three lab. periods. Pr., 23 or equivalent.

104. Food Chemistry. S. (4) Norris.
Methods of analysis of various foods are studied for detection of adulteration. Pr., 111 and 132, or equivalent.

*Not offered in 1940-1941.

109. **Quantitative Analysis.** A,W. (5) **Thompson, Robinson.**
Gravimetric analysis. Two lectures and three lab. periods. Pr., 23 or equivalent.
110. **Quantitative Analysis.** W,S. (5) **Thompson, Robinson.**
Volumetric analysis. Two lectures and three laboratory periods. Pr., 109.
111. **Quantitative Analysis.** A,W,S. (5) **Thompson.**
Gravimetric and volumetric methods for students not majoring in chemistry. Two lectures and three lab. periods. Pr., 23.
- 131, 132, 133. **Organic Chemistry.** A,W,S. (5,5,5) **Dehn, Powell.**
Three lectures and two lab. periods. Courses 131, 132 repeated winter, spring. Pr., 22 or equivalent.
- 135-136. **Organic Chemistry.** A,W. (4-4) **Powell.**
For home economics students. Only women are admitted. Three lectures and one lab. period. Pr., 2 or 22.
137. **Organic Chemistry.** A,S. (5) **Powell.**
For students in nursing. Four lectures and one lab. period.
- 140-141. **Elementary Physical Chemistry.** W,S. (3-3) **Sivertz.**
Fundamental principles and theories of chemistry for pre-medical and science students and chemistry majors in the elective curriculum. Two lectures and one laboratory period. Pr., 111 or equivalent, and 10 credits of physics.
144. **Biological Chemistry.** S. (5) **Norris.**
For home economics students. Three lectures and two lab. periods. Pr., 136 or equivalent.
150. **Undergraduate Thesis.** A,W,S. (2 to 5) **Staff.**
Investigation of special topics suggested by the staff. Pr., senior standing in chemistry.
155. **Oceanographical Chemistry.** S. (3) **Thompson.**
Methods of analysis and the general physical and chemical properties of sea water and sea products. Three lectures. Pr., 111, 132, or equivalent.
156. **Oceanographical Chemistry.** S. (3) **Thompson, Robinson.**
Laboratory methods. Taken simultaneously with 155. Three lab. periods.
- 161-162. **Biological Chemistry.** A,W. (5-5) **Norris.**
For students in medicine, biology, bacteriology, and nutrition. Three lectures and two lab. periods. Pr., 111 and 131, or equivalent.
163. **Biological Chemistry.** S. (3) **Norris.**
Methods of biochemical analysis and of metabolism. One lecture and two lab. periods. Pr., 162.
166. **Biochemical Preparations.** A,W,S. (2 to 3) **Norris.**
Preparations of special substances involving biochemical methods. Pr., 162.
- 181, 182, 183. **Physical and Theoretical Chemistry.** A,W,S. (5,5,5) **Tartar, Sivertz.**
Fundamental principles and theories of chemistry accompanied by physico-chemical measurements. Three lectures and two lab. periods. Pr., 15 credits college physics, Chem. 111, and differential and integral calculus.
- 190, 191. **History of Chemistry.** W,S. (2,2) _____
Lectures and assigned readings. Pr., 132, 181 (or may be taken concurrently with 140).
- Teachers' Course in Chemistry.** (See Educ. 75C.)

Chemical Engineering

51. **Industrial Chemical Calculations.** A,W. (2) Kobe.
Application of chemical units and laws in industrial calculations as applied to combustion processes. Two lectures. Pr., 23 or 26, Math. 33, or equivalents.
52. **Industrial Chemical Calculations.** W,S. (2) Kobe.
Material and heat balances over combustion furnaces and gas producers. Two lectures. Pr., 51.
53. **Industrial Chemical Calculations.** A,S. (2) Kobe.
Calculations for lime and cement kilns, sulfur compounds, crystallization processes. Two lectures. Pr., 52.
74. **Elementary Electrochemistry.** A. (2) Kobe.
Fundamental principles and theory of electrochemistry. Two lectures. Not open to chemists and chemical engineers. Pr., 26, Phys. 98.
118. **Engineering Chemistry.** W. (3) Kobe.
The chemistry of industrial materials in engineering. Three lectures. Pr., 26 or equivalent.
121. **Chemistry of Engineering Materials.** A. (5) Benson, Kobe.
Chemistry and technical analysis of important engineering materials. Three lectures and two laboratory periods. Pr., 111.
122. **Inorganic Chemical Industries.** W. (5) Benson, Kobe.
Development and control of inorganic unit processes. Three lectures and two lab. periods. Pr., 111.
123. **Organic Chemical Industries.** S. (5) Benson, Kobe.
Development and control of organic unit processes. Three lectures and two lab. periods. Pr., 111.
124. **Unit Process Laboratory.** A,W,S. (2 to 5) Kobe.
Use of semi-plant equipment to secure operation and economic data on chemical process.
152. **Advanced Chemical Calculations.** S. (3) Kobe.
Mathematical study of chemical operations with solutions of typical engineering problems. Three lectures. Pr., Math. 41 or equivalent.
171. **Unit Operations.** A. (5) Beuschlein.
The unit operations of flow of fluids, heat transfer, and drying. Three lectures, two lab. periods. Pr., 53.
172. **Unit Operations.** W. (5) Beuschlein.
Unit operations of distillation, adsorption, and extraction. Three lectures, two lab. periods. Pr., 171.
173. **Unit Operations.** S. (3) Beuschlein.
Unit operations of evaporation, mechanical separation, crushing and grinding, and crystallization. Three lectures. Pr., 172.
174. **Chemical Engineering Calculations.** S. (3) West.
Applications of thermodynamics in chemical engineering unit operations and processes. Pr., 182.
175. **Industrial Electrochemistry.** W. (3) Kobe.
Industrial applications of electrochemistry, solutions and electric furnace applications. Three lectures. Pr., 181 for chemists and chemical engineers; 74 for others.

- 176, 177, 178. **Chemical Engineering Thesis.** A,W,S. (1 to 5 each quarter) Benson, Beuschlein, Kobe, _____, West.
An assigned problem is investigated as a research project, and a thesis written.
179. **Research in Electrochemistry.** W,S. (2 to 5) Staff.
Research in electrochemistry under various staff members, or reports on selected topics. Pr., permission of instructor.

Courses for Graduates Only

200. **Departmental Seminar.** A,W. (No credit.) Staff.
Required of all graduate students during residence. Assigned readings and reports on the chemical literature.
- 201, 202. **Advanced Theoretical and Physical Chemistry.** A,W. (3,3) Tartar.
An advanced course giving detailed study of the application of thermodynamics to chemical problems. Offered every other year, alternating with 204, 215, 216. Three lectures. Pr., 182.
203. **Advanced Theoretical and Physical Chemistry.** S. (3) Tartar.
An advanced course dealing with the modern treatment of the electrochemistry of solutions. Three lectures. Offered every other year, alternating with 204, 215, 216. Pr., 182.
- *204. **Chemistry of Colloids.**
(Offered every other year, alternating with 201, 202, 203.)
- 205, 206, 207. **Inorganic Preparations.** A,W,S. (2,2,2) Smith.
Preparation of special substances involving representative laboratory methods. Any quarter may be taken independently. Offered every other year, alternating with 190, 191.
- 208, 209, 210. **Advanced Quantitative Analysis.** A,W,S. (2,2,2) Thompson.
Theoretical principles of analytical chemistry. Two lectures. Pr., 111 and 182, or equivalent.
- 211, 212. **Advanced Organic Preparations.** W,S. (2,2) Powell.
Preparation of special substances involving representative laboratory methods. Either quarter may be taken independently.
- *213. **Thermodynamics.**
(Offered every other year, alternating with 201.)
- *215, 216. **Advanced Theoretical and Physical Chemistry.**
(Offered every other year, alternating with 202, 203.)
- 218, 219, 220. **Selected topics in Industrial Chemistry.** A,W,S. (2,2,2) Benson.
Application of fundamental chemical and economic principles to typical industries. Two lectures. Pr., graduate standing in chemistry or chemical engineering.
- 221, 222, 223. **Advanced Inorganic Chemistry.** A,W,S. (3,3,3) Smith.
Autumn and winter quarters a systematic study is made of the chemistry of all the elements, radioactivity, and atomic structure. Spring quarter is devoted to the chemistry of the coordination compounds.
224. **Chemistry of Nutrition.** A. (3) Norris.
Enzyme and chemical reactions involved in digestion and metabolism. Two lectures and one lab. period. Pr., 162.
225. **Problems in Analytical Chemistry.** A,W,S. (2 to 6) Thompson.
Mainly laboratory work with occasional conferences. Pr., 182.

*Not offered in 1940-1941.

226. **Micro-Quantitative Analysis. A. (3)** Robinson.
Principles and technique of micro-quantitative analysis. One lecture and two lab. periods. Pr., 111, 132, or equivalent.
227. **General Chemical Microscopy. W. (3)** Robinson.
Theory of the polarizing microscope and its application to chemistry. One lecture and two lab. periods. Pr., 141 or 182.
228. **Micro-Qualitative Analysis. S. (3)** Robinson.
Identification of ions by means of optical properties of their crystals. Pr., 101, 227, or equivalent.
- 231, 232, 233. **Advanced Organic Chemistry. A,W,S. (3,3,3)** Dehn.
Special fields of organic chemistry. Three lectures. Pr., 132 or equivalent.
- *236. **Advanced Physical Chemical Laboratory.**
- *241. **Advanced Unit Operations.**
- *242. **Advanced Unit Operations.**
- *243. **Advanced Unit Operations.**
244. **Advanced Unit Operations. A. (3)** Beuschlein.
Evaporation and drying. Three lectures. Pr., 173.
245. **Advanced Unit Operations. W. (3)** Beuschlein.
Distillation. Three lectures. Pr., 173.
246. **Advanced Unit Operations. S. (3)** Beuschlein.
Absorption and extraction. Three lectures. Pr., 173.
249. **Graduate Seminar. A,W,S. (†)** Staff.
Assigned readings and reports dealing with special topics. Offered as desired by members of the different divisions of the department.
250. **Research. †. (†)** Staff.
(1) Special investigations by advanced students under direction of members of the staff;
(2) research for the master's degree, maximum, nine credits; (3) research for the doctor's degree under direction of any member of the senior staff of the department, maximum, 45 credits.

CIVIL ENGINEERING

Professors Van Horn, Harris, May, Miller, More, Tyler; Associate Professors Farquharson, Hawthorn, Moritz, Sergev; Assistant Professors Chittenden, Collier, Hennes, Rhodes, Smith; Lecturer Hauan.

Lower Division Courses

56. **Forest Surveying. S. (8)** Chittenden.
Comprehensive course in plane surveying with special emphasis on forest mapping, the use of steel tape, compass, clinometer, level, transit and plane table. Pack Forest.
57. **Transportation Surveying. A. (4)** Hawthorn, Chittenden, Collier.
Curves and earthwork. Complete survey notes and map for highway or railway grading project. Pr., G.E. 21.

*Not offered in 1940-1941.

†To be arranged.

58. **Transportation Engineering.** W. (4) Hawthorn, Chittenden, Collier.
Highway-railway grades, automobile and locomotive performance; superelevation and widening of curves; sight distances; legal descriptions. Profile, mass diagram, and estimates. Pr., 57.
59. **Advanced Surveying.** S. (4; mines students, 3) Hawthorn, Collier, Hennes.
Base-line measurement; triangulation; precise leveling; determination of azimuth, latitude, and time; plane table. One section for mines students only. Pr., G.E. 21.
91. **Mechanics.** A,W,S. (3) Smith, Brown, Sergev, Farquharson, Rhodes.
Fundamental principles of mechanics for students not in civil engineering. Kinetics, kinematics. Pr., G.E. 12, Math. 33, Phys. 97.
92. **Mechanics.** A,W,S. (3) Farquharson, Smith, Sergev, Chittenden, Rhodes.
Mechanics of materials for students not in civil engineering. Analysis and application of fundamentals to elementary structural design. Pr., 91.
95. **Mechanics.** A,W. (3) Miller, Rhodes, Farquharson.
For students in civil engineering. Fundamentals of static and dynamic equilibrium. Kinematics. Pr., Math. 33, G.E. 12, preceded by or concurrent with Phys. 97.
96. **Mechanics.** W,S. (3) Miller, Rhodes, Farquharson.
For students in civil engineering. Mechanics of materials. Fundamentals of structural mechanics. Pr., 95.

Upper Division Fields and Courses

*109. Engineering Relations.

Transportation Engineering

121. **Roads and Pavements.** S. (3) Hawthorn, Hennes.
Location, construction, and maintenance of roads and pavements. Materials and accessories. Pr., 58.
123. **Highway and Railway Economics.** A,W. (3) Hawthorn.
Economics of highway and railway location, construction, and operation. Pr., 121.
124. **Highway Design.** S. (3) Hawthorn.
Selection and design of pavements. Pavement subgrades and embankments. Roadway and intersection design. Pr., 121.
125. **Principles of Transportation Engineering.** S. (3) Hawthorn.
Principles involved in planning highway, railway, air, and water transportation. Development of the master plan. Pr., senior or graduate standing; not open to Civil Engineering students.
128. **Transportation Administration.** W. (3) Hawthorn.
Highway and railway organization and finance. Administrative problems. Sampling and testing of highway materials. Pr., 121.

Highway and Sanitary Engineering

141. **Dynamics of Fluids.** A. (3) Harris.
Conservation of energy and loss of energy in fluid motion. Application of principles of Torricelli, Bernoulli, and Borda. No laboratory work. Pr., 91.
142. **Hydraulics.** A,W,S. (5) Harris, Moritz, Wilcox, Hennes, Tyler.
Flow of water through pipes and orifices, over weirs, and in open channels; energy of jets with application to impulse wheels. Pr., 91 or 95.

*Not offered in 1940-1941.

143. **Hydraulic Engineering.** A,W,S. (5) **Van Horn, Moritz.**
Complete projects presenting hydraulic engineering; hydrometric methods; economic design of pipes and spillways. Pr., 142.
145. **Hydraulic Machinery.** A,W. (3) **Harris.**
Development and theory of water wheels and turbine pumps; design of a reaction turbine; hydrostatic machinery and dredging equipment. Pr., 142.
147. **Hydraulic Power.** S. (3) **Harris.**
Investigation of power development; generation of power; penstocks and turbines; types of installation. Pr., 142.
150. **Sanitary Engineering and Public Health.** S. (3) **Van Horn, Tyler.**
Relation of biology, bacteriology and chemistry to water supply, sewage, and public health problems. Pr., Chem. 22-25 and junior standing.
151. **Sanitation and Plumbing.** W. (2) **Hauan.**
For architects.
152. **Municipal Engineering.** S. (3) **Tyler.**
For students in City Planning. Location, design, and construction of city streets; traffic and transportation. Municipal sanitation. Pr., junior standing. Not open to Civil Engineering students.
153. **Principles of Regional Planning.** W. (3) **Tyler.**
Principles governing the planning of land use, development of natural resources and problems of land settlement, as pertaining to county, state, regional, or national planning. Pr., senior or graduate standing.
154. **Sanitary Designs.** S. (3) **Tyler.**
Design of sewers, sewage-disposal plants, and water-purification plants. Pr., 155, 158.
155. **Water Supply Problems.** A. (3) **Tyler.**
Design, cost estimation, construction, operation, and maintenance of water supplies, distribution systems, and purification plants. Pr., 142, 150.
157. **Reclamation.** A,W. (3) **Van Horn.**
Elements of the reclamation of land by drainage and irrigation engineering. Soil conservation. Pr., 143 and senior standing.
158. **Sewerage and Sewage Treatment.** A,W. (3) **Tyler.**
Design and operation of sewage systems and disposal plants. Refuse collection and disposal. Pr., 142, 150.

Engineering Materials

162. **Materials of Construction.** W,S. (3) **Collier, Smith.**
Investigation strength and physical characteristics of Portland cement and concrete. Designing concrete mixtures. Pr., 96.
163. **Materials of Construction.** W,S. (3) **Smith, Collier.**
Strength and physical characteristics of timber and steel. Pr., 96.
166. **Soil Mechanics.** A,S. (3) **Hennes.**
Settlement and bearing capacity of foundations; stability of earth slopes. A study of consolidation, stability and stress distribution in the subsoil. Seniors and graduates only.
167. **Soil Mechanics.** W. (3) **Hennes.**
Earth pressure on walls and substructures; earth fill; leakage under dams. A study of shear, permeability, and the physical properties of the subsoil. Seniors and graduates only.

Structural Analysis and Design

170. Theory of Building Construction. A. (3) Sergev.
Pr., junior standing in architecture, Math. 56, Arch. 48.
- 171, 172, 173. Structural Analysis. A,W,S. (3,3,3) Miller, Rhodes, Farquharson.
Theory of structural mechanics. Mechanics of materials with special consideration of reinforced concrete, steel, and timber. Pr., 96.
- 175, 176, 177. Structural Design. A,W,S. (4,4,3) More, Staff.
Application of the theory of structures and mechanics of materials to the design of reinforced concrete, steel, and timber members and connections. Pr., 173.
- 181, 182. Advanced Structures. A,W. (3,3) More.
Stresses and deflections in structures and structural members; particular reference to statically indeterminate cases. Seniors and graduates in civil engineering. Pr., 173.
183. Advanced Structures. S. (4) More.
Statically indeterminate trusses. Seniors and graduates. Pr., 182.

Special Senior and Graduate Courses

- **191, 193, 195. Advanced Professional Design and/or Analysis. A,W,S. Staff.
(2 to 5 each quarter) Staff.
- **192, 194, 196. Research. A,W,S. (3 to 6 each quarter) Staff.
Special investigations by seniors or advanced students under the direction of members of the staff.
198. Thesis. A,W,S. (3 to 6) Staff.
199. Engineering Relations. S. (3) _____.
- **210, 212, 214. Research. A,W,S. (2 to 5 each quarter) Staff.
For graduates only.
- **220, 222, 224. Seminar. A,W,S. (2 to 5 each quarter) Staff.
For graduates only.

CLASSICAL LANGUAGES AND LITERATURE

Professors Thomson, Densmore, Sidey, Stone; Associate Professor Read.

I. Greek

- 1-2, 3. Elementary Greek. A,W,S. (5-5,5) Densmore.
- 4, 5. Socrates. A,W. (3,3) Densmore.
Study of the life and personality of the philosopher, based on Plato, Xenophon, Aristophanes. Should be accompanied if possible by 8 and 9. Pr., 3.
6. The World of Homer. S. (3) Densmore.
Readings from the story of Achilles. Pr., 5.
7. New Testament Greek. S. (3) Densmore.
Will be given instead of 6 if the class elects it.
- 8, 9. Grammar and Composition. A,W. (2,2) Read.
Pr., 3.

**Students registering for these courses must indicate their field of study by a letter symbol after the course number, for example: 193H. These engineering fields of study and their symbols are Hydraulics (H), Materials (M), Structural (S), Sanitary (W), and Transportation (T).

- 51, 51, 51. **Greek Authors.** A,W,S. (No credit.) Densmore.
Two hours weekly. Practice at sight-reading from a wide range of authors. Pr., 5 or permission.
101. **The Persian War Period.** A. (3) Read.
Readings in Herodotus and Plutarch. Pr., 5.
102. **Pericles and the Peloponnesian War.** W. (3) Read.
Aristotle, Thucydides, Xenophon, and Plutarch. Pr., 5.
103. **Periods of Theban and Macedonian Supremacy.** S. (3) Read.
Plutarch, Demosthenes, and Arrian. Pr., 5.
- *104. **Drama.**
- *105. **Drama.**
- *106. **Lyric Poetry.**
122. **Grammar and Composition.** A. (3) Read.
Pr., 5.
- 151, 152. **Plato.** A,W. (3 to 5 each quarter) Densmore.
The *Phaedo*, *Symposium*, and extensive readings in the second half of the *Republic*. Pr., 103.
153. **Plato.** S. (3 to 5) Densmore.
Selections from the *Parmenides*, *Theaetetus*, *Sophist*, *Timaeus*. Pr., 152.
- *191, 192, 193. **Literary Criticism and Sophocles.**

Courses for Graduates Only

201. **Greek Philosophers.** A. (3 to 5) Densmore.
The Pre-Socratics.
- *202. **Greek Philosophers.**
- *211, 212. **Hellenistic Literature.**
- *221, 222, 223. **Epigraphy.**
231. **Research in Special Authors.** A,W,S. (3 to 5) Densmore.
For 1940-1941, Sophocles.

II. Latin

- 1-2, 3. **Elementary Latin and Caesar.** A,W,S. (5-5,5) Read.
- 4, 5, 6. **Cicero and Ovid.** A,W,S. (5,5,5) Thomson.
Pr., two years high school Latin or Latin 1-2, 3 in university. Qualifies a student for Latin 21. Review of grammar and syntax.
- NOTE: To enter Latin 21 to 25, the student should be thoroughly familiar with the declensions and conjugations and with the normal phenomena of Latin syntax to be found in Caesar, Cicero, and Virgil.
21. **Cicero: De Amicitia.** A. (5) Thomson.
With exercises in grammar and composition. Pr., three and one-half years high school Latin.

*Not offered in 1940-1941.

- *22. Catullus.
23. Virgil: *Georgics* and *Bucolics*. S. (5) Thomson.
Pr., as for 21.
24. Sallust: *Jugurtha*. W. (5) Thomson.
With exercises in grammar and composition. Pr., as for 21.
- *25. Ovid: *Metamorphoses*.
100. Livy. A. (5) Read.
One book and selections from other books. Pr., 21, 23, 24, or special permission.
101. Horace. W. (5) Read.
Selections from the complete works. Pr., as for 100.
- *102. Tacitus *Germania* and *Agricola*.
103. Plautus and Terence. S. (5) Stone.
Selected comedies. Pr., as for 100.
- *104. Martial: *Epigrams*.
106. Syntax and Prose Composition. W. (3) Stone.
Students should, if possible, register for this course in combination with Edu. 75P. Pr., 100 or equivalent.
- *107. Cicero's Letters.
- *109. Pliny's Letters.
- *140. Relations of Latin to English and the Romanic Languages.
152. Quintilian: *Book X* and Horace: *Ars Poetica*. A. (3) Thomson.
Pr., 100, 101.
- *153. Augustine: *Confessions*.
154. Lucretius. W. (3) Thomson.
Pr., as for 152.
- *156. Horace: *Satires* and *Epistles*.
- *157. Cicero: *In Verrem*.
- 160, 161, 162. Major Conference. A,W,S. (1,1,1) Staff.
Discussion with members of the staff of various features of Greek and Roman life and literature not specifically dealt with in other courses. Required of all majors.
165. Cicero: *De Finibus*. S. (3) Thomson.
Pr., as for 152.
- *166. Survey of Latin Satire.
- Teachers' Course in Latin.
(See Educ. 75P.)

*Not offered in 1940-1941.

Courses for Graduates Only

- *204. Tacitus: *Histories*.
 207. Seneca: *Moral Essays*. A. (3) Thomson.
 211. Latin Novel. S. (3) Read.
 *214. Suetonius: *Augustus*.
 216. Christian Latin. W. (2 to 4) Sidey.
 Vinucius Felix and Augustine.
 *218. Cicero: *De Natura Deorum*.
 220. Latin Elegy.
 285, **286. Vulgar Latin. W. (3) Stone.
 Pr., completion of work in Latin and at least one Romance language, satisfactory to instructor.
 287, **288. Medieval Latin. S. (3) Stone.
 Pr., same as for 285.

Courses in Classical Antiquities, Given in English

I. Greek

11. Greek Civilization. A. (5) Sidey.
 Study of the rise, growth, achievements, and decline of Greek Humanism as expressed in Greek political and social ideals and institutions as well as in their literature and art. Modern parallels in institutions and ideals will be examined. No knowledge of Greek required.
 13. Greek Literature. A,W,S. (5) Sidey, Read.
 The masterpieces in English translation. Knowledge of Greek not required.
 17. Greek and Roman Art. A. (5) Sidey.
 18. Greek and Roman Mythology. W. (3) Sidey.
 Study of the principal myths of Greece and Rome, with special reference to their appearance in English literature.

II. Latin.

11. Roman Civilization. W,S. (5) Stone.
 Brief review of Roman history, together with a study of the private life of the Romans and their contribution to modern civilization. Knowledge of Latin not required.
 13. Roman Literature. A,W. (5) Read.
 The masterpieces in English translation. Knowledge of Latin not required.

*Not offered in 1940-1941.

**Will be offered if a sufficient number of students elect the course.

ECONOMICS AND BUSINESS

Professors Preston, Ayres, Burd, Cox, Dakan, Demmery, Farwell, Gregory, Hall, Mund, Skinner, Smith; Professor Emeritus McMahon; Associate Professors Brown, Butterbaugh, Mackenzie, Miller; Assistant Professors Chertkov, Huber, Kerr, Lockling, Lorig; Lecturers Draper, McConahey, Truax; Instructors Bartels, Fordon, Mikesell, Sheldon; Associates Hamack, Petersen.

E.B. 1-2 are required for majors in economics and business and should also be taken by students who plan to devote two courses to economics. Students who take but one course in economics must choose E.B. 4, *Survey of Economics and Business*. All advanced courses have at least one specified intermediate course or equivalent as a prerequisite. The following courses are open only to professional majors in the College of Economics and Business, except by permission of the dean of the college and the instructor concerned: 123, 126, 127, 132, 134, 135, 136, 143, 144, 145, 146, 147, 148, 149, 152, 153, 154, 155, 156, 157, 158, 169, 170.

Lower Division Courses

- 1-2. Principles of Economics. A,W,S. (5-5) Cox, Huber, Lockling.
Planned to give a general understanding of the organization of our economic life and the fundamental principles underlying it.
3. General Economics. A,W,S. (3) Cox, Huber.
Condensation of E.B. 1-2; abbreviated for students in chemistry, pharmacy, forestry, and engineering. Others should elect E.B. 4 if only 5 credits are desired, E.B. 1-2 if 10 or more credits in economics is planned. Pr., sophomore standing.
4. Survey of Economics. A,W,S. (5) Mikesell.
Not open to students in Economics and Business, economics majors in the College of Arts and Sciences, or others who expect to continue with Economics and Business courses. Students who desire more than one course in economics should begin with E.B. 1-2.
- 16-17-18. Secretarial Training. A,W,S. (3-3-3) Hamack.
Designed to standardize the skills in shorthand and typewriting and other secretarial subjects. Two hours daily.
54. Business Law. A,W. (3) Brown, Chertkov.
This and the two following courses are designed to give the fundamentals of law which bear most closely upon ordinary business transactions. Introduction to the study of law, its origin and development, and the formation of contracts. Pr., sophomore standing.
55. Business Law. W,S. (3) Brown, Chertkov.
Continuation of 54. Pr., 54.
56. Business Law. A,S. (3) Brown, Chertkov.
Continuation of 55. Pr., 55.
57. Business Law. A,W. (3) Brown, Chertkov.
For engineering students or others who are unable to devote more than three credits to the study of business law. May not be substituted for 54, and does not carry credit for students in economics and business. Prerequisite, sophomore standing and English requirement.
62. Principles of Accounting. A,W,S. (5) Mackenzie, Lorig.
Study of fundamental theory. Objectives of financial and operating statements analyzed. Four hours a week in accounting laboratory. Three lectures. Pr., sophomore standing.
63. Principles of Accounting. A,W,S. (5) Mackenzie, Lorig.
More specialized problems in general theory, practice, and analysis. Four hours a week in accounting laboratory. Three lectures. Pr., 62.
88. Introduction to Insurance. A. (5) Smith.
Study of the principles and uses of insurance in general. Pr., 1-2.

Intermediate Courses

100. **Statistical Analysis.** A,W,S. (5) **Butterbaugh, assistants.**
Application of statistical method to practical business and economic problems. Correct interpretation of statistical data is stressed. Pr., 1-2.
101. **Scientific Management.** A,W,S. (5) **Mackenzie.**
General non-technical study. Scientific management as a philosophy and a scientific approach applicable to all business enterprises. Pr., 1-2.
103. **Money and Banking.** A,W,S. (5) **Dakan, Preston, Mikesell.**
Functions of money; standards of value; principles of banking with special reference to the banking system of the United States. Pr., 1-2.
104. **Principles of Transportation.** A,W,S. (5) **Farwell, Sheldon.**
General survey of the elements of transportation and communication. Pr., 1-2.
105. **Economics of Labor.** A,W,S. (5) _____.
Economic factors in labor problems; economic and social aspects of labor and employing organizations; analysis of government measures with regard to labor problems. Pr., 1-2.
106. **Economics of Marketing and Advertising.** A,W,S. (5) **Bartels, Miller.**
Development of economic principles; market processes and systems; the middlemen and their functions. Pr., 1-2.
107. **World Economic Policies.** A,W,S. (5) **Skinner.**
Economic and commercial relations of nations; commercial treaties, tariff systems and administration. Pr., 1-2.
108. **Risk and Risk Bearing.** W. (5) **Smith.**
The risk factor in its economic and social consequences; ways of meeting risk. Pr., 1-2.
109. **Principles of Real Estate I.** A,W. (5) **Demmery.**
Economic principles underlying the utilization of land; determining factors for the location and development of residential, commercial, industrial, and financial districts; public control. Pr., 1-2.
110. **Accounting Analysis and Control.** A,W,S. (5) **Gregory, Lorig.**
Form, content, and interpretation of the balance sheet, the profit and loss statement, and certain analytical statements. Principles of valuation and their application to individual accounting categories. Pr., 63.
111. **Advanced Theory of Accounts I.** A,W,S. (5) **Draper.**
Application of accounting theory to business problems; advanced partnership and corporation problems; receiverships; annuities; consignments. Pr., 110.
112. **Advanced Theory of Accounts II.** A,W,S. (5) **Draper.**
Continuation of 111. Mergers and consolidations; consolidated balance sheets and profit and loss statements; accounting for securities. Pr., 111.
115. **Business Correspondence.** A, S. (5) **Bartels.**
Analysis of principles, including psychological factors. The study of actual business letters in terms of these fundamentals. Pr., Comp. 1 and junior standing.
120. **Business Organization and Combination.** A. (5) **Dakan.**
Business corporations, associations, and combinations. Pr., 1-2.

Advanced Courses**Banking and Finance**

121. **Corporation Finance.** A,W; S. (5) **Dakan.**
Financial problems connected with the promotion of corporations, underwriting and sale of securities; financial management; financial problems accompanying corporation expansion. Reorganization of unsuccessful corporations. Pr., 63 and 103.
122. **Principles of Investment.** W. (5) **Dakan.**
Underlying principles of investment credit; origin and purpose of credit instruments; selection of sound investments; investment policy of individuals and institutions; care of investments; relation of the investment market to the money market. Pr., 121.
123. **Investment Analysis.** S. (5) **Dakan.**
Analytical study of typical industrial, public utility, and railroad securities; analysis of financial operations, revenue and expense reports; their use in determining investment values. Pr., 122.
125. **Advanced Money and Banking.** S. (5) **Mikesell.**
Presupposes a knowledge of our existing financial organization and devotes attention to questions of banking and monetary policy. Pr., 103.
126. **Bank Credit Administration.** W. (3) **Truax.**
Based on actual problems selected from portfolios of Pacific Northwest banks. Pr., 63, 103, and consent.
127. **Foreign Exchange and International Banking.** A. (5) **Skinner.**
Foreign currencies and banking systems; foreign banking by American institutions; foreign exchange markets; theory of international exchange; financing of exports and imports; specie movements. Pr., 103, 107.
128. **Personal Insurance.** S. (5) **Smith.**
Scientific basis of life insurance; types of policies; premium rates and reserves. Pr., 108. Given spring, 1941, and alternate years.
- *129. **Property Insurance.** (Offered in alternate years.)

Foreign and Domestic Commerce

131. **Principles of Foreign Trade.** W. (5) **Skinner.**
Historical development of world commerce; theories, principal materials, trends. Pr., Geog. 7 or 1, E.B. 107.
132. **Advanced Foreign Trade.** S. (5) **Skinner.**
International trade theories as tested by the facts of commerce; government and private trade promotion; organization and management of foreign trade concerns; foreign trade methods and practices. Pr., 131.
134. **Wholesaling.** A. (5) **Miller.**
Wholesale functions and agencies performing them; historical development and economic justification; recent trends and future prospects. Pr., 106.
135. **Retailing.** W. (5) **Bartels, Miller.**
Various types of retail organizations; their evolution, present status, and future prospects; economic functions performed by each type; their relative efficiency. Pr., 106.
136. **Advertising.** S. (5) **Miller.**
Advertising as a business force; its economic justification as a factor in marketing; analysis of current criticism; advertising organizations, their functions and procedure. Pr., 106.
- *138. **Recent Marketing Trends.**

*Not offered in 1940-1941.

Public Utilities and Transportation

141. **Regulation of Public Utilities. A. (5)** Hall.
Economic, legislative and administrative problems of regulation. Pr., 104.
142. **Advanced Economics of Public Utilities. W. (5)** Hall.
Economic characteristics of public utilities; rate principles and practices with reference to cost differentiation; finance, etc. Pr., 104.
143. **Railway Transportation. W. (5)** Sheldon.
Critical evaluation of problems of finance, operation, competition, combination, and regulation. Pr., 104.
144. **Water Transportation. A. (5)** Farwell.
Problems of joint and special costs, competition, rate practices, rate agreements, shipping subsidies, intercoastal regulations. Pr., 104.
145. **Highway Transportation. S. (5)** Sheldon.
Treatment of the principles used in the traffic and operating divisions of highway transportation. Pr., 104.
146. **Air Transportation. A. (5)** Sheldon.
Economic principles, with particular reference to operating methods and costs; traffic promotion; schedule maintenance; safety; governmental regulation; airport management. Pr., 104.
147. **Transportation Rates. S. (5)** Sheldon.
Intensive examination of theory underlying commodity classifications and tariffs. Rate-making power of governmental bodies. Pr., one of the following: 143, 144, 145, 146.
148. **Traffic Management. W. (5)** Farwell.
Problems of routing, expediting, auditing, demurrage, reconsignment, port and terminal facilities. Pr., as for 147.
149. **Marine Insurance and Carriers' Risks. S. (5)** Farwell.
Liabilities of rail and water carriers; plans of marine insurance; marine underwriters; insurable interests; warranties. Pr., as for 147.

Management and Accounting

- *150. **Technology of Industry.**
152. **Government Accounting. A. (5)** Lorig.
Accounting and financial reporting for municipal, county, state, and federal governments, Includes examination of types of funds necessary and their accounting, interpretation of government reports, and the accounting aspect of budgetary control. Pr., 110.
153. **Accounting Systems. S. (5)** Lorig.
Thorough study of accounting and personnel problems to be considered in developing and installing systems of accounting. Special attention to the objectives of the system; planning to provide the information required by the management; chart of accounts with details of routine; forms and equipment required, and record of results or periodic report. Pr., 112.
154. **Cost Accounting I. A,W,S. (5)** Gregory.
Economics of cost accounting; industrial analysis; production control through costs; types of cost systems, burden application; standard costs; selected problems. Pr., 110.
155. **Cost Accounting II. S. (5)** Gregory.
Theory and practice of standard costs and budgeting; sales, distribution and administrative cost; differential cost. Pr., 154.

*Not offered in 1940-1941.

156. **Income Tax Accounting.** A,W, S. (5) **McConahey.**
Selected cases illustrating the definition of taxable income of individuals, corporations, partnerships. Regulations of Treasury Department. Pr., 112.
157. **Auditing.** A,W, S. (5) **Cox.**
Auditing procedure; balance sheet audits; analysis of income and expense; certifications and reports; classification of audits and asset and liability values; profit and loss statement audits; analysis of investigations. Pr., 112.
158. **C.P.A. Problems.** A,W, S. (5) **McConahey.**
Selected problems taken from the American Institute of Accountants and state C.P.A. examinations. Pr., 157.

Advanced Economics and Business

161. **Labor Legislation.** S. (5) **Chertkov.**
Consideration of legislative and judicial actions bearing directly on labor problems and the labor movement in their relation to social, political, and economic theories. Pr., 105.
163. **Economics of Consumption.** S. (5) **Huber.**
Historical development of human wants in relation to economic processes in general and the economic principles of consumption; analysis of standards of living; attempts to control consumption through individual and group action. Pr., 105.
164. **Labor Relations.** A. (5)
Study of labor relations and collective bargaining in various branches of American industry, together with an analysis of experience here and abroad with government intervention in labor disputes. Pr., 105.
- *165. **European Labor Problems.**
169. **Real Estate II.** S. (5) **Demmery.**
Types of real estate uses and their characteristics; appraisals of farm and urban land and improvements; property rights; real estate finance; management of real property; leases. Pr., 109.
170. **Advanced Statistical Analysis.** W. (5) **Butterbaugh.**
Cases and problems are analyzed in order to develop ability in applying statistical technique to practical problems in economics and business. Pr., 100.
171. **Public Finance and Taxation I.** A, S. (5) **Hall.**
Growth of public expenditures; underlying principles and theory of various forms of public revenue; character of various forms of taxation; the principles and practices of public credit and of public financial administration. Pr., 103.
172. **Public Finance and Taxation II.** W. (5) **Hall.**
Survey and analysis of fiscal thought; methods and problems in expenditure analysis; study of tax systems; theories and problems of classification, equity and incidence in taxation; critical evaluation of the use and control of public credit and the custody and disbursement of public funds. Pr., 171.
175. **Business Fluctuations.** A,W, S. (5) **Demmery.**
Survey of past business fluctuations, secular trends, seasonal variations, irregular fluctuations and business cycles; discussion of forces which tend to destroy economic equilibrium; proposals for controlling business fluctuations. Pr., 103.
- *177. **Social Insurance.**
181. **Economic Development of the United States.** A,S. (5) **Lockling.**
Special attention to manufactures, commerce, labor, finance, and agriculture. Pr., 30 upper division credits in economics and business.

*Not offered in 1940-1941.

185. **Advanced Economic Theory.** A,W,S. (5) **Mund.**
Economic thought centering about the neo-classical and psychological theories of value and distribution. Analysis of the price system, monopoly, competition, the agents of production, economic systems, and social control. Pr., 30 upper division credits in economics and business.
187. **Development of Economic Thought.** W,S. (5) **Mund.**
Study of the contributions of the classical and neo-classical economists and their contemporary critics. Primary sources will be used and attention given to the industrial, social, and political background of economic thought. Pr., 185.

Research Courses for Undergraduates and Graduates

- 193A, B, C. **Problems in Wholesaling, Retailing and Advertising.** A,W,S. (5, 5, 5) **Burd.**
Individual and group study. Required business contacts. Compiling, organizing, and interpreting data from original and library sources. Each student will specialize on one of the three fields. Pr., 134, 135, 136, consent.
- 194A, B. **Research in Transportation.** A,W. (3,3) **Farwell.**
Open only to qualified students in transportation who will be placed in part-time contact with transportation agencies. Pr., consent of instructor.
- 195A, B, C. **Research in Management and Accounting.** A,W,S. (3,3,3) **Gregory.**
Open to qualified undergraduate and graduate students. Pr., consent of instructor.
- 196A, B, C. **Research in Public Utilities or Public Finance.** A,W,S. (3,3,3) **Hall.**
Open to qualified undergraduate and graduate students. Pr., consent of instructor.
- 197C. **Research in International Trade.** S. (3) **Skinner.**
Open to qualified undergraduate and graduate students. Pr., consent of instructor.
- 199B, C. **Research in Real Estate and Business Fluctuations.** W,S. (3,3) **Demmery.**
Open to qualified undergraduate and graduate students. Pr., consent of instructor.

Courses for Graduates Only

- 200A, B, C. **Thesis Seminar.** A,W,S. (No credit.) **Staff.**
- 202A, B. **Graduate Seminar in Finance.** A,W. (5 to 7 each quarter) **Hall.**
For students interested in monetary and banking history and theory, and business finance. Pr., consent of instructor.
- 205C. **Graduate Seminar in Public Finance.** S. (5 to 7) **Hall.**
Pr., graduate standing, consent of instructor.
- 206B, C. **Graduate Seminar in Labor.** W,S. (5 to 7 each quarter) _____.
Theories and problems. Pr., one advanced course in labor and consent of instructor.
- 208A. **Graduate Seminar in Economics.** A. (5 to 7) **Mund.**
Systematic review of the theories of value, price, and distribution; special references to recent developments. Pr., 185, 187, or equivalent, consent of instructor.
- 210A, B, C. **French and German Economists.** A,W,S. (3,3,3) **Skinner.**
Pr., consent of instructor.
- *212. Seminar in Public Service Problems.**

*Not offered in 1940-1941.

- 214A. Graduate Seminar in International Economics. A. (5 to 7) Skinner.
Pr., graduate standing, consent of instructor.
- 215B. Seminar in Economic History. W. (5 to 7) Lockling.
Pr., graduate standing and consent of instructor.
258. Problems in Accounting Theory. S. (5) McConahey.
Intensive study of accounting theory through use of problems. Pr., 112, graduate standing, consent of instructor.
- Teachers' courses in Economics and Business. (See Educ. 75E, 75F.)

EDUCATION

Professors Powers, Bolton, Cole, Draper, Dvorak, Osburn, Stevens, Williams;
Associate Professors Corbally, Jessup.

1. Education Orientation. A,W,S. (2) Jessup.
Preview of the field of teaching. Conferences. For those contemplating teaching as a profession. Credit only to freshmen and sophomores. Required of all undergraduates planning to secure the normal diploma. Pr., an all-University grade-point average of at least 2.5.

I. Elementary Courses (Upper Division Credit)

9. Psychology of Secondary Education. A,W,S. (3) Powers.
Pr., 1, Psych. 1, and all-university grade-point average of at least 2.5.
30. Washington State Manual. A,W,S. (No credit.) Corbally, Jessup.
For all applicants for Washington teaching certificates.
60. Principles of Secondary Education. A,W,S. (3) Draper.
Problems of high school teaching. Conferences: visits to public schools. May be taken concurrently with 90. Pr., 1, 9, 70, and all-university grade-point average of at least 2.5.
70. Introduction to High School Procedures. A,W,S. (5) Williams.
Pr. 1, 9, and all-university grade-point average of at least 2.5.
- 71-72. Cadet Teaching. A,S. (Semester basis, 5-3) Corbally, Powers.
Course 72 may precede or follow 71. Pr., 1, 9, 60, 70, 90, 75 or approved equivalent, and all-university grade-point average of at least 2.5. Also register for Education 30, no credit. Three successive free hours should be provided in the schedule each quarter for cadet teaching. Cadets registering for autumn semester report at 113b Education Hall, Monday, September 30, from 8:30 to 11:30 a.m. for assignments.
- 71N-72N. Cadet Teaching for Vocational Home Economics Majors Only. A,W,S. (5-3) Corbally, Raitt.
Pr., as for 71-72. Students planning to take 71N in autumn or winter quarters must register for 72N in spring quarter of preceding year. Students taking 71N in spring quarter must register for 72N in winter quarter immediately preceding. Students must register for 30 either autumn or spring quarters, and must attend the weekly four o'clock lectures in 72 winter quarter.
- 71P-72P-73P. Cadet Teaching for Women Health and Physical Education Majors. A,W,S. (3-2-3) Corbally, Hutchinson.
Pr., as for 71-72. Eight credits; three quarters required. Teaching arrangements made by the school of physical education and hygiene for women and the director of cadets.
- 75B. Botany. A. (2) Frye.
Pr., two years of botany. To be taken concurrently with 71.

- 75C. Chemistry. A,W,S. (2) Smith.
Pr., at least 20 credits of college chemistry of average "B" grade.
- 75D. Civics. S. (2) Webster.
Attitude of approach, arrangement of material, methods of presentation.
- 75E. Commercial Course. S. (5) Draper.
Two credits to count as education; three credits as economics and business. Pr., 30 credits of the 54 required for a major in commercial teaching, including 15 credits in accounting.
- 75F. Commercial Course, Shorthand and Typewriting. S. (5) Hamack.
Study of curriculum, methods, objectives, standards, grading, examination, and demonstrational problems.
- 75H. English. A,S. (5) Sperlin.
Two credits count as education; three as English.
- 75K. French. S. (2) Frein.
Pr. Fr. 41, 101, 102, 103, 158, and 159.
- 75L. German. S. (2) Vail.
Pr., Ger. 110, or consent of instructor.
- 75M. History. S. (5) Gates.
Two credits count as education; three as history. Special reference to work of the high school. Open to seniors.
- 75NA. Home Economics. S. (3) Raitt.
Two credits only count toward normal diploma. Objectives, organization, curricula of home economics in elementary, junior, and senior high schools. Pr., 25 credits in home economics.
- 75NB. Home Economics. A. (3) Terrell.
Two credits only count toward normal diploma. Organization and methods for nurses, dietitians, internes, employees of hospitals and other institutions. Pr., 25 credits in home economics.
- 75O. Geography. S. (2) Earle.
Pr., Geog. 1, and five additional credits.
- Journalism. (See Journalism 125 for teachers' course in journalism.)
- 75P. Latin. S. (2) Stone.
Pr., 20 credits of college Latin. Course must be taken in combination with Latin 107 by special arrangement.
- 75Q. Mathematics. S. (3) Jerbert.
Two credits count as education; one credit as elective. Pr., Math. 109.
- Music. (See Music 116 for teachers' course in music.)
- Physical Education for Men. (See P.E. 141, 142, 143, for teachers' courses in Physical Education.)
- 75V. Health and Physical Education for Women. A. (2) Wilson.
Pr., P. E. 156, 162, 163, 164, at least five credits of which must be in residence.
- Piano. (See Music 167 for teachers' course in piano.)
- 75X. Speech. S. (5) Bixby.
Two credits count as education; three as electives in speech.
- Sociology. (See Soc. 164 for teachers' course in sociology.)

- 75Y. Spanish. S. (2) Umphrey.
Pr., Span. 101, 102, 103, 159.
- 75Z. Zoology. W. (2) Guberlet.
Pr., 20 credits in zoology.
90. Measurement in Secondary Education. A,W,S. (2) Dvorak.
Use of tests and scales for diagnosis, remedial education, motivation, and study of individual differences. May be taken concurrently with 60. Pr., 1, 9, 70, and all-university grade-point average of at least 2.5.

II. Intermediate Courses (Upper Division and Graduate Credit)

101. Educational Psychology. A. (3) Powers.
Systematic treatment of theoretical principles and experimental backgrounds.
104. Psychology and Training of Exceptional Children. S. (5) Dvorak.
Subnormal, superior, backward, eccentric, and delinquent children studied from the point of view of the teacher.
- *105. Modern Problems of Adolescence.
120. Educational Sociology. A,W,S. (3) Corbally.
Consideration of problems of education related to process of social evolution.
122. Diagnostic and Remedial Work in Education. W. (3) Osburn.
Materials and devices for locating pupils' difficulties. Special reference to scholastic progress.
- *134. High School Organization and Administration.
140. School Supervision. A. (4) Jessup.
Problems and technique of the improvement of school work through the in-service education of teachers.
141. Supervision of Elementary School Subjects. W. (4) Jessup.
- *145V. Principles and Objectives of Vocational Education.
146. Extracurricular Activities. S. (3) Draper.
Weekly conferences with instructor. Class limited to twenty students. Pr., 60.
147. Educational and Vocational Guidance. A. (3) Corbally.
153. Elementary School Curricula. S. (4) Jessup.
- 158A. Investigations in Reading. A. (3) Osburn.
Scientific studies of elementary school reading. Primarily for administrators and teachers with experience.
- 164-165. Principles and Technique of Curriculum Making. A,W. (3-3) Draper.
One hour a week of laboratory and field work in public schools. Pr., 60 and 70 or equivalent.
175. Improvement of Teaching. S. (3) Osburn.
Adaption of instruction to individual differences. Examination of laboratory studies; summarization of research.
- 180, 181, 182. History of Education. A,W,S. (3,3,3) Jessup.
Social interpretation of the historic beginnings of education.

*Not offered in 1940-1941.

183. **Historical Backgrounds of Educational Method.** A. (3) Williams.
 184. **Comparative Education.** S. (5) Jessup.
 Modern education in foreign countries.
 188. **Philosophy of Education.** A. (3) Jessup.
 191. **Advanced Educational Measurements.** W. (3) Dvorak.
 Pr., 90 or equivalent.
 193. **Character Education.** W. (3) Powers.
 Experimental background of the modern effort toward character development.
 197, 198, 199. **Individual Research.** A,W,S. (2 to 5 each quarter) Staff.
 Pr., consent of department.

III. Advanced Courses (Open to Graduates Only)

201. **Advanced Educational Psychology.** S. (3) Powers.
 Pr., courses in general and educational psychology.
 *209-210. **Seminar in Psychology of High School Subjects.**
 220. **Seminar in Educational Sociology.** S. (5) Corbally.
 222. **Seminar in Diagnostic and Remedial Work in Education.** S. (5) Osburn.
 *230. **Seminar in Administration. (Legislation.)**
 232. **Reconstruction in Education.** W. (5) Cole.
 Survey of educational trends in program of education. Extension of school service and the adjustment of subject instruction to life situations.
 *233. **Seminar in Administration. (School Buildings.)**
 *240. **Technique of Objective Supervision.**
 245,246,247. **Organization of Supervisory and Administrative Programs.** A,W,S. (5,5,5) Cole.
 Types of schools and changes being made in them. Supervision of instruction, and pupil accounting.
 *260-261. **Seminar in Secondary Education.**
 263. **Junior College.** S. (3) Dvorak.
 265, 266. **College Problems.** A,W. (5) Stevens.
 Higher education from the standpoint of the new instructor. History of administrative organization. Course will be adapted to individual needs through special assignments. One two-hour lab. period to be arranged.
 267, 268, 269. **Guidance and Counseling.** A,W,S. (5,5,5) Stevens.
 Counseling in colleges and public schools. Students must reserve time each week for duties in a counselor's office. Discussion and reports.
 270-271. **Problems in Modern Methods.** A,W. (3-3) Williams.
 275. **Improvement of College Teaching.** S. (5) Stevens.
 Effective methods. One two-hour lab. period to be arranged.
 287, 288, 289. **Seminar in Philosophy of Education.** A,W,S. (3,3,3) Williams.

*Not offered in 1940-1941.

290. Educational Statistics. A. (5) Dvorak.
Required of candidates for the doctor's degree in education.
291. Methods of Educational Research. A,W. (3) Dvorak.
Required for master's and doctor's degrees in education.
- 298, 299, 300. Individual Research or Thesis Work. A,W,S. (†) Staff.
Field of interest should be indicated by letter when registering.
Sections or "fields":
- A. Educational psychology.
 - B. Educational sociology.
 - C. Educational administration and supervision.
 - D. Elementary education and remedial education.
 - E. Secondary education: general; curriculum; guidance.
 - F. Classroom techniques.
 - G. History and philosophy of education and comparative education.
 - H. Educational measurements and scientific techniques.
 - I. College problems.

ELECTRICAL ENGINEERING

Professors Magnusson, Loew, Shuck; Associate Professors A. V. Eastman, Hoard, Lindblom, G. S. Smith; Assistant Professor Cochran; Instructor Wolfe.

101. Direct Currents. A,W,S. (4) Hoard, Smith, Eastman.
Short course in continuous-current machinery, for non-electrical students. To be taken with E.E. 102. Pr., Physics 98, Math. 41.
102. Direct Currents Laboratory. A,W,S. (2) Shuck, Smith, ———.
Continuous-current machinery, for non-electrical students. To be taken with E.E. 101. Pr., Physics 98.
103. Direct Currents. A. (3) Lindblom, Wolfe.
Short course in direct-current machinery for civil engineering students. To be taken with 104. Pr., Physics 98, Math. 41.
104. Direct Currents Laboratory. A. (1) Cochran, ———.
Direct-current machinery for civil engineering students. To be taken with 103. Pr., Physics 98.
105. Electric Wiring. A. (2) Shuck.
Short course for architects.
109. Direct Currents. A (4), W, S. (5) Smith, Wolfe.
Theory of electric and magnetic circuits; construction, operation, and characteristics of direct-current machines. To be taken with 110. Pr., Physics 98, Math. 41.
110. Direct Currents Laboratory. A (4), W, S. (5) Eastman, Cochran, ———.
Direct-current machinery. To be taken with 109. Pr., Physics 98.
111. Direct Currents. A,W. (4), S. (5) Shuck, Lindblom, ———.
Continuation of 109. Storage batteries. Direct-current systems. To be taken with 112. Pr., 109.
112. Direct Currents Laboratory. A,W,S. (4) Hoard, Cochran, Wolfe.
Experimental work on direct-current dynamo machinery. To be taken with 111. Pr., 110.

†To be arranged.

- **15. Elementary Direct Currents. (Extension night class)** **Shuck.**
Laws of the electric and magnetic circuits with application to direct-current machinery. Practical course for electricians.
- **20. Elementary Alternating Currents. (Extension night class)** **Shuck.**
Alternating-current theory with experimental work on alternating-current machinery. Pr., 15.
121. **Alternating Currents. A,W,S. (4)** **Shuck, Eastman, ———.**
Alternating currents for non-electrical students. To be taken with 122. Pr., 101.
122. **Alternating Currents Laboratory. A,W,S. (2)** **Shuck, Cochran, ———.**
Experimental work on alternating-current machinery. To be taken with 121. Pr., E.E. 102.
123. **Alternating Currents. W. (3)** **Smith, Wolfe.**
Short course for civil engineering students. To be taken with 124. Pr., 103, 104.
124. **Alternating Currents Laboratory. W. (1)** **Wolfe, ———.**
For civil engineering students. To be taken with 123. Pr., 103, 104.
141. **Illumination. W. (3)** **Shuck.**
Electric lamps; commercial photometry; adaptation of electric lighting to commercial requirements. Junior or senior elective. Pr., 109, 110.
152. **Electrical Machine Design. A,W,S. (3)** **Lindblom.**
Complete design of one direct-current generator or motor. Pr., 111, 112.
- **154. Design of Electric Apparatus. (4)** **Lindblom.**
Switchboards, transformers, alternators, alternating-current motors, etc. Pr., 152, 163.
- *159. Alternating Currents. W,S. (3)**
161. **Alternating Currents. W,S. (6)** **Hoard, Lindblom, Cochran.**
Theory of polyphase systems, magnetic hysteresis, transformers, induction motors, alternators. To be taken with 162. Pr., 111.
162. **Alternating Currents Laboratory. W,S. (4)** **Hoard, Shuck, ———.**
Experimental work with alternating-current machinery. To be taken with 161. Pr., 112.
163. **Alternating Currents. A,S. (6)** **Loew, Shuck, Lindblom.**
Theory of rotary converters, rectifiers, synchronous and commutator motors, and transmission lines. To be taken with 164. Pr., 161.
164. **Alternating Currents Laboratory. A,W. (4)** **Shuck, Hoard, Smith.**
To be taken with 163. Pr., 162.
171. **Electric Railways. A. (4)** **Hoard.**
Electrification of steam railroads. Fundamentals of direct-current and alternating-current systems of electrification. Pr., 161, 162.
- **173. Central Stations.**
175. **Power Transmission. W,S. (5)** **Loew.**
Theory, design, and operation of electric-power transmission lines. Pr., 163, 164.
181. **Vacuum Tubes. A,W. (4)** **Hoard, Eastman.**
Fundamentals, theory of rectifiers and amplifiers; photoelectric cells, thyatrons; applications to power and communication fields. To be taken with 182. Pr., 161.
182. **Vacuum Tubes Laboratory. A,W. (2)** **Cochran, Hoard.**
Experimental work with vacuum tubes. To be taken with 181. Pr., 162.

**Will be offered if a sufficient number of students elect the course.

*Not offered in 1940-1941.

183. **Radio.** W, S. (5) Eastman, Cochran.
Theory of vacuum-tube oscillators, modulators, detectors, and amplifiers; applications in the radio and other high-frequency fields. Pr., 181.
184. **Radio-Telephone Transmitter Practice.** A, W, S. (2) Eastman, Cochran.
Supervised study and practice in radio-telephone transmitter operation. Credit allowed only after student has passed U.S.F.C.C. 1st class radio-telephone license examination. Pr., 183.
185. **Telephone Transmission.** A, S. (5) Eastman, Cochran.
Theory of telephone transmission; reflection phenomena; standing and traveling waves; loading; measurement of line constants; filter design. Pr., 161.
- 188, 190, 192. **Research.** A, W, S. (2 to 5 each quarter.) Staff.
191. **Advanced Circuit Theory.** W, S. (3) Loew.
Operational calculus applied to the solution of electric circuits. Pr., 161, 162.
193. **Advanced Circuit Theory.** S. (3) Shuck.
Study of net-works under short circuit conditions with the use of symmetrical components. Pr., 161.
194. **Seminar.** S. (5) Magnusson.
For the year 1940-1941 seminar will be in field of hydro-electric power resources in State of Washington. Pr., 163, 164.
195. **Electric Transients.** A, W. (3) Magnusson.
Single and double energy transients; standing and traveling waves; short-circuit transients; surges; corona; lightning. Pr., 163.
196. **Electric Transients Laboratory.** A, W. (4) Smith, Cochran.
To be taken with 195. Pr., 164.
- *197. **Seminar.**
198. **Electric Transients Laboratory.** A, W, S. (2 to 5) Magnusson, Smith.
Continuation of 196. Study of electric transient phenomena by means of vibrator and cathode ray oscillographs, klydonograph, and voltage impulse recorders.
205. **Seminar.** S. (3) Eastman.
For 1940-1941, seminar in field of radio transmission.
- 210, 212, 214. **Research.** A, W, S. (2 to 5 each quarter) Staff.

ENGLISH

Literature: *Professors Griffith, Benham, Cox, Harrison, Heffner, Padelford, Taylor, Winther; Associate Professors Blankenship, Wagenknecht; Assistant Professors Cornu, Eby, Stirling, Zillman; Lecturer Sperlin; Instructors Burns, Ethel, Kahin, Kocher, Savage; Associate Butterworth. Drama: Professor Hughes; Assistant Professor Conway; Instructor Harrington; Associates Ferrall, Gray, Hicken; Theatre Assistants Bell, Colle, Davis. Speech: Professor Orr; Associate Professors Franke, Rahskopf; Assistant Professors Bird, Carrell; Instructor Pellegrini; Associates Baisler, Bixby, Burnett, Hill; Acting Associate Fitton. Freshman Composition: Associate Professor Lawson in charge Freshman Composition; Assistant Professor Hall in charge Engineering English; Instructors Brown, Gillette, Walters; Associates Adams, S. F. Anderson, V. Anderson, Beal, Burgess, Emery, Forrest, Mark, McKinlay, Nix, Norlin, Person, St. Clair, Vickner.*

*Not offered in 1940-1941.

Composition

- A. **Elementary Composition.** A,W,S. (Non-credit.) **Lawson in charge.**
Required of students who fail in examinations for entrance into 1 or 4.
- B. **Elementary Composition.** A,W,S. (Non-credit.) **Hall in charge.**
Fundamentals of writing. For those who fail in test for admission to Comp. 100. Passing grade in Composition B is equivalent to passing test for Comp. 100.
- 1, 2. **Composition.** A,W,S. (5,5) **Lawson in charge.**
Principles and practice of composition with conferences for personal criticism. Pr., satisfactory grade in freshman preliminary English test. (See page 79.)
- 1e-2e-3e. **English Composition and Literature.** A,W,S. (5-5-5) **Burgess, Walters.**
Elective course substituting for Comp. 1 and 2 and allowing, in addition, credits in literature. Group and conference methods of instruction.
- 4, 5, 6. **Composition.** A,W,S. (3, 3, 3) **Lawson in charge.**
For students in architecture, art, nursing education and drama. In content, this course is the same as 1 and 2.
- 9, 10. **Composition.** W,S. (3,2) **Lawson in charge.**
For students in pharmacy.
15. **Composition.** A. (5) **Lawson in charge.**
For students ranking very high in the freshman preliminary test as a substitute for 1 and 2.
37. **Argumentation.** A,W,S. (5) **Stirling in charge.**
Required in College of Economics and Business. Elective to others. Analysis, use of evidence, discovery of fallacies, organization of logical discussion.
- 51, 52, 53. **Advanced Composition.** A,W,S. (2, 2, 2) **Person.**
Writing of exposition, personal essays, and preparation of research papers. Upper division credit for upper division students. Pr., 2 or equivalent.
- 54, 55, 56. **Advanced Composition.** A,W,S. (2, 2, 2) **Ethel, Brown, Ranson, Person.**
Writing of description, book reviews, and critical articles. Upper division credit for upper division students. Pr., 2 or equivalent.
- 57, 58, 59. **Narrative Writing.** A,W,S. (3, 3, 3) **Savage.**
Short story, tale, and sketch. Upper division credit for upper division students. Pr., Comp. 2 or equivalent.
60. **Report Writing.** A. (3) **Adams.**
Technical reports for students in the College of Forestry. Upper division credit for upper division students. Pr., Comp. 1.
- 61, 62, 63. **Verse Writing.** A,W,S. (2, 2, 2) **Zillman.**
Pr., Comp. 1, 2.
- 74, 75, 76. **Dramatic Composition.** A,W,S. (3, 3, 3) **Savage.**
Study of principles with experimental creative work in dramatic writing. May be substituted for required courses in drama with the consent of department. Upper division credit for upper division students. Pr., 1 and 2 or equivalent.
- 110, 111, 112. **Advanced Verse Writing.** A,W,S. (2, 2, 2) **Zillman.**
Given in conjunction with 61, 62, 63. All the elementary credits must be earned before advanced credit will be given.
- 156, 157, 158. **Advanced Narrative Writing.** A,W,S. (5, 5, 5) **Savage.**
Pr., six credits advanced composition or permission of instructor.

- 184, 185, 186. Professional Creative Writing. A,W,S. (3 to 5 each quarter.) Savage.
Revision of manuscripts for emphasis, organization, and style. Student entering this course should have the preliminary work on his writing project completed. Pr., permission of instructor.

English For Students in the Colleges of Engineering and Mines

100. Technical Composition. A,W,S. (3) Hall in charge.
Logical organization of material, its effective presentation in form of articles, business letters, and reports. Pr., passing of test in the mechanics of English, given to sophomore engineers on the third Tuesday of the autumn quarter.
101. Modern Reading. A,W,S. (3 to 5) Hall.
For students in technology. Intended to direct reading in the non-technological fields. Conferences, written and oral reports. Students registered in this course may continue directed reading during vacations.
102. English for Engineers. A,W,S. (3) Hall.
For the technical student who wishes to come in contact with authors representative of the thought or the culture of the past or present. Student is given opportunity to improve his style of writing and to progress in accordance with his ability. Individual weekly conferences. Pr., Comp. 100.
103. English for Engineers. A,W,S. (3) Hall.
Continuation of Comp. 102.
- 107, 108, 109. Non-Technical Reading. A,W,S. (1,1,1) Hall.
Pr., Comp. 100.

Drama

- 1, 2, 3. Introduction to the Theatre. A,W,S. (2, 2, 2) Hughes.
Significant aspects of the modern theatre. Orientation course primarily for students expecting to major or minor in drama. Lectures and required reading.
- 46, 47, 48. Theatre Speech. A,W,S. (3,3,3) Harrington, Ferrall, Gray.
To prepare the speech of students for desirable usage in the theatre.
- 51, 52, 53. Elementary Acting. A,W,S. (3, 3, 3) Harrington, Ferrall, Gray.
Theory and practice. Includes pantomime, improvisation, and characterization. Pr., 46, 47, 48.
103. Scene Construction. A,W,S. (3) Hicken.
Principles and actual construction of stage scenery and properties. One hour lecture, four hours lab.
104. Scene Design. A,W,S. (3) Conway.
Theory and practice. One hour lecture, four hours lab. Pr., 103.
105. Theatrical Costume Design and Construction. A,W,S. (3) Conway.
Theory and practice. One hour lecture, four hours lab.
106. Make-up. A,W,S. (3) Conway.
Principles and practice. One hour lecture, four hours lab.
- 107, 108, 109. Puppetry. A,W,S. (2,2,2) Davis.
Practical course in educational and professional puppetry. History and principles of the marionette theatre. Design, construction, costuming, stringing, and manipulation of puppets. Portable puppet stage construction. With permission of department, this course may be repeated for credit.

- 111, 112, 113. **Playwriting.** A,W,S. (3, 3, 3) **Hughes.**
Advanced course for those who wish to write professionally for the stage. Course may be substituted for required courses in Drama with consent of department. Pr., two quarters of Comp. 74, 75, 76, or permission of instructor.
114. **Stage Lighting.** A,W,S. (3) **Hicken.**
A survey course, non-technical in character. Practical methods of lighting in play production.
115. **Advanced Stage Lighting.** W,S. (3) **Hicken.**
- 117, 118, 119. **Advanced Theatre Workshop.** A,W,S. (2,2,2) **Staff.**
Pr., one of: 103, 104, 105, or 116 or permission. Four hours laboratory.
- 121, 122, 123. **Advanced Acting and Directing.** A,W,S. (3, 3, 3) **Harrington, Ferrall, Gray.**
Emphasis on group acting. Practice in directing. Members of the class given first consideration for parts in public productions. Pr., 51, 52, 53.
- 127, 128, 129. **History of the Theatre.** A,W,S. (2, 2, 2) **Conway.**
Origin and evolution of theatre art in the Orient, Europe, and America. The physical playhouse, methods of production, great actors, stage machinery, scenery, lighting, costumes, and masks.
- 141, 142, 143. **Radio Acting and Production.** A,W,S. (2, 2, 2) **Bell.**
Technique of radio acting and methods of dramatic production for radio. Actual broadcasting experience. Pr., two quarters of acting.
- 144, 145, 146. **Radio Writing.** A,W,S. (3, 3, 3) **Bell.**
Principles of dramatic composition for radio with experimental production of scripts under actual broadcasting conditions. Pr., two quarters of advanced composition or one quarter of playwriting.
- 151, 152, 153. **Representative Plays.** A,W,S. (3, 3, 3) **Hughes.**
Origin and development of the drama in the Orient, Europe, and America. Representative plays of great playwrights of all important periods. Theories of the drama.
- 181, 182, 183. **Problems in Acting.** A,W,S. (2, 2, 2) **Harrington, Ferrall.**
Advanced theories of acting applied to individual problems and group work. Pr., 51, 52, 53, 121, 122, permission of the instructor.
197. **Theatre Organization and Management.** S. (2) **Hughes.**
Practical course for theatre directors. Theatre personnel, box-office methods, advertising, production costs, royalties, executive policies. Pr., senior or graduate standing.

Courses for Graduates Only

- 210, 211, 212. **Research in Drama.** A,W,S. (5, 5, 5) **Hughes in charge.**
Pr., permission of the instructor.

For other courses in Drama, see Literature 154, 170, 171, 217, 218, 219.

Literature

Composition 1 or equivalent is prerequisite to all literature courses except Lit. 20 and 50.

20. **Survey of American Literature.** A,W,S. (5) **Blankenship.**
50. **Survey of Nineteenth Century Literature.** A,S. (5) **Wagenknecht.**
Studies and lectures in the poetry and novels of nineteenth century English literature.

57. **Introduction to Poetry.** A,W,S. (5) Ethel, Kocher, Zillman.
With illustrations from the nineteenth century. Not open to students who have credit for 21, 66, 83, or 84.
58. **Introduction to Fiction.** A,W,S. (5) Griffith, Ethel, Burns.
Critical analysis of narrative poems, short stories, novels, plays. For majors in literature and drama and for others who desire to study the organization of narrative literature. Upper division credit for upper division students. Not open to students who have credit for Lit. 75.
- 64, 65. **Literary Backgrounds.** A,W,S. (5, 5) Burns, Cornu, Kahin, Kocher, Stirling, Wagenknecht.
English classics, especially Beowulf, Chaucer, Spenser, Shakespeare, Milton, Dryden, Pope, Johnson, Burns, emphasizing literary forms, their appreciation, and social relations. Grade of "A" or "B" grants upper division credit to an upper division student for the quarter in which the grade is earned.
73. **Introduction to Modern Literature.** A,W,S. (5) Cornu, Stirling, ———.
Essays on European and American thought. Readings in poetry, novel, and drama.
- 97, 98, 99. **The Bible as Literature.** A,W,S. (2, 2, 2) Wagenknecht.
Open to all. Upper division credit for upper division students.
- 104, 106. **Contemporary Literature.** A,W,S. (3, 3) Harrison.
Special studies in English and continental contemporary literature for advanced students.
117. **History of the English Language.** A,W,S. (5) Butterworth.
Pronunciation, vocabulary, and syntax. Open to sophomores who intend to major in English. Lit. 180 may be substituted for this course.
140. **Social Ideals in Literature.** W. (5) Benham.
Model commonwealths and such other literatures as illustrate the development of social and economic thought.
- 144, 145. **Eighteenth Century Literature.** A,W,S. (5,5) Cox, Cornu.
The classic period, Johnson and his age, and pre-romanticism.
- *147, 148, 149. **The English Novel.**
- 150, 151. **Old and Middle English Literature.** A,W,S. (5,5) Griffith, Butterworth.
Old English literature in translation (150); Middle English: Chaucer and contemporaries (151).
- 153, 154. **English Literature: 1476-1642.** W,S. (5,5) Padelford, Taylor.
The Renaissance, Spenser and his contemporaries (153); non-Shakespearean Elizabethan drama (154).
- 161, 162. **American Literature.** A,W,S. (5, 5) Harrison, Eby, Blankenship, Burns.
From the beginning to 1870.
- 164, 165, 166. **American Literature since 1870.** A,W,S. (3, 3, 3) Harrison.
The beginning of realism; tendencies from 1900 to 1915; contemporary fiction and poetry.
- 167, 168, 169. **Seventeenth Century Literature.** A,W,S. (5, 5, 5) Benham.
Survey of the period; Milton and his contemporaries; the Restoration.
- 170, 171. **Shakespeare.** A,W,S. (5, 5) Padelford, Taylor, Heffner, Kocher, Stirling.
Comedies and histories (170); tragedies (171). Pr., 64, 65.

*Not offered in 1940-1941.

- 174, 175. Late Nineteenth Century Literature. A,W,S. (5,5)
Poetry, novels, essays, and drama. Winther, Wagenknecht.
176. Late Nineteenth Century Literature: Browning. S. (5) Padelford.
Browning's longer poems.
- 177, 178. Early Nineteenth Century Literature. A,W,S. (5, 5)
Poetry, novels, essays, and drama. Cox, Ethel, Zillman.
- 180, 181, 182. Old English Language. A,W,S. (5, 5, 5) Butterworth.
Reading of Anglo-Saxon classics in the original; study of grammatical forms.
- *191. Major Conference.
- Teachers' courses. (See Educ. 75H.)

For courses in foreign literatures in translation, see Department of General Literature.

Courses for Graduates Only

- 201, 202. Graduate English Studies. A,W,S. (5,5) Heffner.
Introduction to graduate study by practice in research writing, bibliography, reading and studies in assigned periods of English and American literature. Required of candidates for the master's degree.
203. Literary Criticism. S. (5) Winther.
History of English criticism. Required of candidates for the master's degree.
- 204, 205, 206. Chaucer. A,W,S. (5, 5, 5) Griffith.
Problems of Chaucerian scholarship. Required of candidates for the doctor's degree.
- *208, 209, 210. English Drama to 1642.
- 211, 212, 213. Sixteenth Century Literature: Spenser. A,W,S. (5,5,5) Padelford.
- 217, 218, 219. Shakespeare. A,W,S. (5,5,5) Taylor.
- 221, 222, 223. Seventeenth Century Literature. A,W,S. (5,5,5) Benham.
- 224, 225, 226. American Literature. A,W,S. (5, 5, 5) Eby.
- *229. American Literature: Whitman.
- 230, 231, 232. Old English. A,W,S. (5, 5, 5) Butterworth.
Anglo-Saxon grammar, readings in Old English prose and poetry; Middle English language; Beowulf. Required of candidates for the doctor's degree.
- *233, *234. Advanced Old English.
- 238, 239, 240. Seminar in Early 19th Century Literature. A,W,S. (5, 5, 5) Cox.
- 241, 242, 243. Victorian Literature. A,W,S. (5, 5, 5) Winther.
- 244, 245, 246. Eighteenth Century Literature. A,W,S. (5, 5, 5) Cox.
- 250, 251, 252. Thesis Research. A,W,S. (†) Staff.
Student should not enroll for this course until he has chosen a thesis subject.

For other graduate courses that may be counted toward an English major for an advanced degree, see Liberal Arts 214, 215, 216.

*Not offered in 1940-1941.

†To be arranged.

Speech

19. **English Phonetics for Foreign Students.** A. (2) Carrell.
38. **Essentials of Argumentation.** A,W,S. (5) Pellegrini.
Bibliographies, briefs, and oral arguments. Upper division credit for upper division students.
40. **Essentials of Speaking.** A,W,S. (5) Orr in charge.
Elementary course in fundamentals of effective speaking.
41. **Advanced Speaking.** A,W,S. (5) Bixby, Bird, Franzke.
Continuation of 40, with special emphasis on problems of delivery. Upper division credit for upper division students. Pr., 40.
43. **The Speaking Voice.** A,W,S. (4) Orr, Rahskopf, Carrell, Hill, Burnett.
Fundamental training course with emphasis on mental, emotional, and physical coordinations essential to good voice. Upper division credit for upper division students.
44. **Voice and Articulation.** W,S. (3) Rahskopf.
Continuation of 43, special attention to problems of articulation and to physiological and acoustic aspects of voice production. Upper division credit for upper division students. Pr., 43.
50. **Elementary Lip Reading.** A. (2) Burnett.
Fundamental principles of lip-reading; sense training for speed and accuracy; study of relationship of lip-reading to the speaking situation.
51. **Advanced Problems in Lip Reading.** S. (2) Burnett.
Continuation of 50, special emphasis on complex elements of lip-reading. Pr., 50 or consent of instructor.
179. **Oral Reading of Literature.** A,W,S. (3) Orr, Pellegrini, Bixby.
Required of students seeking a normal diploma in English. Such students are examined for assignment to one of four groups: (a) exempted; (b) required to take 43 and 79; (c) to take 79 only; (d) to take 79 and 179. Upper division credit for upper division students. Pr., 43, unless a literature major.
101. **Varsity Debate.** W,S. (3) Orr, Bird, Franzke, Hill.
Only students chosen for the freshman and varsity debate squad may register for this course. Credits will be allowed upon the recommendation of the instructor in charge, provided that no more than three credits are earned in one year and that the total does not exceed twelve credits.
103. **Extempore Speaking.** S. (3) Bird.
Recommended to students in engineering and law. Not open to College of Arts and Sciences students nor to students who have credit for 40.
138. **Methods in Debate and Public Discussion.** W. (3) Pellegrini.
Study and practice of various types of debating, including the old traditional method and new modifications, such as cross-examination, symposium and the problem-solving debates. Particularly designed for teachers and speech majors. Pr., 38 or consent of instructor.
139. **Forms of Public Address.** A. (5) Rahskopf.
Study of the structure and style of the various forms of public address based on modern speeches. Pr., Speech 40.
161. **Radio Speech.** A. (3) Bird.
Special projects in the technique of speech in radio, viz., announcer's copy, talks, dialogue, interviews, group discussions, etc.

162. **Radio Production Methods.** W. (3) Bird.
Manual and recorded sound effects, music in relation to broadcasts, microphone placement, studio set-up, timing, cutting of scripts are among the factors considered. Laboratory experience in the rehearsal studio of the Campus Radio Studios.
163. **Radio Program Building.** S. (3) Bird.
Planning of the radio program. Problems of adaptation of literary forms for radio production, presentation of expository, informational, and persuasive material by radio.
179. **Advanced Interpretation of Literature.** S. (5) Orr.
Advanced training in the mental and vocal technique essential to artistic oral interpretation of the various forms of literature. Pr., 79.
186. **Backgrounds in Speech.** A. (5) Rahskopf.
Speech as a fundamental human activity considered from biological, acoustic, psychological and social aspects. Some attention to the development of speech as a field of study and the correlation of its various phases.
187. **Voice Science.** W. (5) Rahskopf.
Anatomy, physiology, physics, psychology of voice production. Pr., 43 or consent of instructor.
188. **Advanced Problems in Speaking.** W. (5) Orr.
Advanced training in effective methods of preparation and delivery. Pr., 40.
190. **Speech Correction.** A, S. (5) Carrell.
Nature, etiology, diagnosis of disorders of speech. Not open to students having credit for 193.
191. **Methods of Speech Correction.** W. (3) Carrell.
Methods of correcting speech defects. Clinical practice for qualified students.
192. **Speech Clinic.** A, W, S. (No credit) Carrell.
Individual work for students having speech defects they wish to correct. Sec. A, Articulation Problems; Sec. B, Foreign Dialect; Sec. C, Stuttering; Sec. D, Voice Problems.
- 193, 195, 196. **Clinical Training in Speech Correction.** A, W, S. Carrell.
(2 to 5 each quarter)
Training course in techniques and problems of speech correction. Involves observation in public schools and actual management of cases in the University Clinic, Traveling Clinic, and at cooperating hospitals. May be repeated for total not to exceed 15 credits. Pr., 190, 191, permission of instructor.
194. **Basic Methods of Teaching Lip-reading.** W. (5) Burnett.
Introduction to theory and methods of diagnosing hearing disabilities and teaching lip-reading. Laboratory practice. Pr., normal hearing.
- Speech-Teacher's Course.** (See Educ. 75X.)

Courses for Graduates Only

211. **Historical Principles of Public Address.** A. (5) Rahskopf.
Critical evaluation of public addresses based on a study of their development from ancient to modern times. Students read in translation the more important works of Aristotle, Cicero, Quintilian, Wilson, Campbell, Whately, and other modern critics.
212. **Research in Rhetoric and Public Address.** S. (5) Rahskopf.
214. **Research in Voice.** A. (5) Orr.
215. **Research in Theory of Interpretation.** W. (5) Orr.
216. **Research in Speech Pathology.** S. (5) Carrell.
220. **Thesis Research.** A, W, S. (†) Staff.

†To be arranged.

FISHERIES

Professor W. F. Thompson; Associate Professors Lynch; Assistant Professor Donaldson; Associate _____.

101. **Comparative Anatomy of Fishes.** A. (5) _____
Morphology. Emphasis on evolution of structures in reference to phylogeny. Pr., Zool. 1 and 2. Two lab. periods, three lectures.
102. **Classification and Identification of Soft-rayed Fishes.** W. (5) _____
Special attention given to salmon and trout. Two lab. periods, three lectures. Pr., 101.
103. **Classification and Identification of Spiny-Rayed Fishes.** S. (5) _____
Special emphasis on game and food fishes. Two lab. periods, three lectures. Pr., 102.
- 105, 106, 107. **Commercial Aquatic Invertebrates.** A,W,S. (5,5,5) Lynch.
Classification, life history, uses of commercially important invertebrates. Two lab. periods, three lectures. Pr., Zool. 1 and 2.
- 108, 109, 110. **Problems of Fisheries Science.** A,W,S. (1, 1, 1) Thompson, staff.
No prerequisite. Required of all majors not later than junior year.
- *125. **Spawning Habits of Game and Other Fishes.**
- *126. **Early Life History of Fishes.**
151. **Natural Fish Foods and Water Supplies.** A. (5) Lynch, Donaldson.
Fresh-water insects and crustacea and their relations to pond culture. Physical and chemical determinations of the suitability of water. Propagation of salt-water fishes. Three 2-hour lab. periods and three lectures. Pr., Zool. 1 and 2; Chem. 1, 2, or 21 and 22.
152. **Propagation of Freshwater Fishes; Methods of Hatching and Rearing.** W. (5) Lynch, Donaldson.
Methods of feeding and efficiency evaluation of diets. Design, structure, maintenance of hatcheries, pond systems, and aquaria. Three 2-hour lab. periods, three lectures. Pr., 151.
153. **Hatchery Biology.** S. (5) Lynch, Donaldson.
Algae, higher plants, and miscellaneous invertebrates in relation to fish. Sanitation, disease prevention. Stream improvement. Stocking policies. Three 2-hour lab. periods, three lectures. Pr., 152.
154. **Diseases of Fish.** A. (5) Guberlet.
Nature and cause of disease in fish. Two lab. periods, three lectures. Pr., Zool. 1 and 2; Fish. 101 and 102.
157. **Age and Growth of Game and Food Fishes.** A. (5) Donaldson.
Determination by means of length frequencies, scales, otoliths. Two 4-hour lab. periods, two lectures. Pr., 102.
158. **Migrations of Game and Food Fishes.** W. (5) Donaldson.
Marking experiments and racial investigations. Two 4-hour lab. periods, two lectures. Pr., 102.
- 165, 166, 167. **Elementary Problems.** A,W,S. (2 to 5 each quarter.) Staff.
Students assigned problems to be worked out under direction of an instructor. Pr., 15 credits in fisheries.
- 195, 196, 197. **Seminar.** A,W,S. (2 to 5 each quarter.) Thompson.
Reports and discussions of current fisheries literature. Pr., 15 credits in fisheries.

Courses for Graduates Only

- 201, 202, 203. **Research.** A,W,S. (†) Thompson and staff.
Pr., 25 credits in fisheries or its equivalent in zoology.
- 205, 206, 207. **Graduate Seminar.** A,W,S. (2 to 5 each quarter.) Thompson, staff.
Required of all graduate students. Maximum 6 credits. Open to graduates in zoology.

*Not offered in 1940-1941.

†To be arranged.

FORESTRY AND LUMBERING

Professors Winkenwerder, Grondal, Marckworth; Associate Professor Pearce; Assistant Professors Hanley, Wangaard, Zumwalt; Instructors Schmoe, Schrader.

- 1a. Dendrology. S. (3) Wangaard, assistants.
Identification, classification, distribution of the trees of North America.
- 1b. Dendrology. A. (3) Wangaard, assistants.
Continuation of 1a. Pr., 1a.
2. Introduction to Forestry. A. (2) Winkenwerder.
Orientation course required of all freshmen.
3. Introduction to Forestry. W. (2) Winkenwerder, assistants.
Continuation of but need not be preceded by 2.
4. Forest Protection. S. (3) Winkenwerder, assistants.
Factors influencing the spread of forest fires, methods of presuppression, detection and suppression. Required of all freshmen.
5. First Aid to the Injured. A. (2) Dr. Hall.
6. General Forestry. W. (3) Winkenwerder.
Survey of forestry as a whole for non-majors.
10. Wood Technology. A. (3) Grondal.
Identification, taxonomy, physical and chemical properties of wood. Pr., Physics 3 or 6, For. 1a, 10 credits in chemistry, Bot. 10 and 11.
11. Wood Structure. W. (3) Grondal, assistants.
Microstructure of wood; identification, xylotomy, and elementary microtechnique. Pr., 10.
15. General Lumbering. A. (4) Pearce.
Comparative methods of lumbering on the Pacific Coast and in other lumbering regions of the United States. Prerequisite to all courses in logging and milling.
40. Silviculture. S. (2) Zumwalt.
Field studies of forest types and silvicultural problems. Given at Pack Forest. Pr., 121.
60. Forest Mensuration. W. (4) Zumwalt, assistants.
Theory of scaling, volume and taper tables, sample plot methods, determination of contents of stands, growth, yield. Pr., 3, Math. 13.
62. Forest Mensuration. S. (6) Zumwalt, assistants.
Studies in scaling, volume tables, cruising, mapping, growth and yield. Given at Pack Forest. Pr., 1b, 60, G.E. 7.
65. Forest Recreation. S. (3) Schmoe.
Recreational needs, values, resources, objectives. Planning and developing outdoor recreational resources. Pr., 3 or 6.
104. Timber Physics. A, S. (5) Wangaard, assistants.
General mechanics, stresses, tests, theory of flexure, moisture and strength; mechanical properties of wood. Pr., Math. 13, Physics 3 or 6.
105. Wood Preservation. S. (3) Schrader.
Factors influencing development of fungi; classification and control of wood-destroying agencies; mechanical properties of treated wood. Pr., 11.
106. Wood Preservation Laboratory. S. (2) Schrader.
Evaluation of preservatives; methods of testing and inspection of treated material. Must be preceded or accompanied by 105.

110. **Characteristics of Trees.** S. (2) **Schmoe.**
Identification, distribution, life habits, and uses of trees of the Pacific Northwest. Offered only to non-majors in forestry.
115. **Forest Protection.** A. (3) **Schmoe.**
Fire plans, relation of forestry practice in the control of insect and fungus attacks. Pr., 4.
119. **Forest Administration.** W. (3) **Marckworth.**
Objects, principles, and methods of administering private and public forest industries. Pr., E.B. 3 or 4.
121. **Silvics.** W. (3) **Zumwalt.**
Relation of trees and forests to soil, moisture, light, and temperature as a foundation for forest practice; forest ecology. Pr., 1b, 3, Bot. 11.
122. **Silvicultural Methods.** A. (5) **Zumwalt, assistants.**
Type and site classification; intermediate cuttings; final cuttings; natural and artificial regeneration. Pr., 40, 121.
126. **Forest Economics.** A. (4) **Marckworth.**
Position of forests in the economic structure of the U. S. and other countries. Pr., E.B. 3 or 4.
140. **Construction.** W. (4) **Pearce, assistants.**
Machinery, specifications, cost estimates, maintenance and methods of constructing roads, trails, wooden bridges, telephone lines; land clearing. Pr., 104, G.E. 7, C.E. 56.
151. **Forest Finance.** A. (4) **Marckworth.**
Mathematics of forest finance and operations; cost of growing timber; valuation of land for forest production. Pr., 122.
152. **Forest Organization.** W. (4) **Marckworth.**
Principles and regulation; sustained yield management; forest working plans. Pr., 151.
153. **Forest Management.** S. (16) **Marckworth.**
Field trip. Lectures, assigned readings and extensive field work on large scale tracts of timber. Required of management majors. Pr., 119, 152.
154. **Wild Life Management.** A. (3) **Schmoe.**
Interrelations between forests and wild life. Life histories and habits of animals involved, their natural and existing environment and relationships between the animals and this environment. Pr., 3.
155. **Range Management.** W. (3) **Zumwalt.**
Correlation of grazing with other forest uses; range regulation and economics. Pr., 1b, Bot. 10, and 11; junior or senior standing.
158. **Forest Utilization.** W. (5) **Wangaard.**
Classification and utilization of secondary and derived forest products from the viewpoint of forest economics. Pr., 10.
- 160, 161, 162. **Undergraduate Studies.** A,W,S. (2 to 5 each quarter.) **Staff.**
Enables students to prepare themselves for work in fields for which there is not sufficient demand to warrant the organization of regular classes. Opportunities are offered in city forestry, tree surgery, wood fibers, microtechnique in the study of wood, research methods, advanced work in any of the regular forestry subjects. Instructor assigned according to nature of work.
171. **Forest Geography.** W. (4) **Pearce.**
Economic geography of the forest regions of the world. Forest resources, management, products, industries, trade. Pr., senior standing.

183. **Milling. A. (5)** **Grondal.**
Organization, planning, operation, and administration of timber conversion plants. Pr., 15, 104, 158, M.E. 82.
184. **Manufacturing Problems. S. (5)** **Schrader.**
Lumber producing regions; economics and geography of utilization; selling and distribution of lumber; financing methods. Pr., E.B. 62, For. 183.
185. **Forest Engineering. A. (5)** **Pearce.**
Logging plans and costs; correlation of logging engineering methods with condition of stand, topography, forest management, etc. Pr., senior standing.
186. **Logging Engineering. W. (5)** **Pearce.**
Logging machinery and equipment. Machine costs, output and depreciation. Solution of machine and equipment problems. Pr., 185, C.E. 57, M.E. 82.
187. **Forest Engineering Field Trip. S. (16)** **Pearce.**
One week field study of types of logging and log transportation methods; costs and appraisals. Six weeks collecting data for plan to open new operation; four weeks compilation. Pr., 186.
188. **Theory and Practice of Kiln Drying. W. (3)** **Grondal.**
Wood-liquid relationships and hygrometry; application of gas laws. Problems in the design of dry kilns. Pr., 11, 158.
189. **Wood Pulp. S. (5)** **Grondal.**
Design of waste conversion plants; wood pulp manufacture. Pr., 11, 158, 183, 188.
- 193, 194. **Seminar. A,W. (3, 3)** **Staff.**
Review and advanced work in dendrology, mensuration, silviculture, and lumbering. Pr., senior standing.

Courses for Graduates Only

202. **Thesis. A,W,S. (3 to 6 each quarter.)** **Staff.**
Total requirement nine credits; instructors assigned according to nature of work.
203. **Advanced Wood Preservation. A. (3)** **Grondal.**
Theory of penetrance; design of wood preservation plants. Fire proofing and fire proofing compounds. Pr., 105, 106.
204. **Forest Management Plans. A,W,S. (3 to 5 each quarter)** **Marckworth.**
Development of data covering a working circle; valuation of forest area; organizing forest property to conserve earning and productive power. Pr., 153.
208. **Graduate Seminar. W. (3)** **Staff.**
Reviews, assigned readings, reports and discussions on current periodical literature, Forest Service and state publications.
- 210, 211, 212. **Graduate Studies. A,W,S. (3 to 5 each quarter.)** **Staff**
For students who wish to prepare themselves in fields in which the faculty of the department is prepared to give instruction but for which there is not sufficient demand to organize regular courses. Pr., graduate standing.
- 213, 214, 215. **Research. A,W,S. (3 to 5 each quarter.)** **Staff.**
Ample opportunity is offered for research in special phases of forestry.
220. **Advanced Forest Engineering. W. (5)** **Pearce.**
Logging management, analysis of costs. Economic selective logging and valuation. Stumpage and logging appraisal; financial reports. Pr., graduate standing.
221. **Forest History and Policy. W. (3)** **Marckworth.**
Forest policy of the U. S.; forestry in the states and island possessions; the rise of forestry abroad.

GENERAL ENGINEERING

Professors Wilcox, Warner; Assistant Professors Brown, Jacobsen, Jensen, Rowlands; Instructors Boehmer, Cooper, Douglass, Engel, Norrie, Peterson; Associates Hiltner, Placek, —.

1. **Engineering Drawing.** A,W,S. (3) Warner, Boehmer.
Fundamental principles of orthographic projection; theory of related views; types of graphical representation. Should be preceded by or accompanied by solid geometry.
2. **Engineering Drawing.** A,W,S. (3) Warner, Rowlands.
Fundamental requirements of working drawings; practice in their reading and execution. Pr., 1.
3. **Drafting Problems.** A,W,S. (3) Warner, Boehmer.
Detailed analysis and solution of engineering problems by use of drafting room methods, descriptive geometry. Pr., 1, 2.
7. **Engineering Drawing.** W,S. (3) Warner, Chittenden.
Special short course for forestry students.
11. **Engineering Problems.** A,W,S. (3) Wilcox, Brown.
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 principally with problems in dynamics. Student is assisted in orienting himself in his engineering work. Pr., high school physics, advanced algebra.
12. **Engineering Problems.** A,W,S. (3) Wilcox, Jensen.
Elementary mechanics, statics, and graphics. Continuation of 11. Pr., 1, 11, Math. 31.
21. **Plane Surveying.** A,W,S. (3) Engel.
Surveying methods, use of instruments, computations, mapping, U. S. public land surveys. Pr., 1, 2, or equivalents, and trigonometry.
151. **Inventions and Patents.** A. (1) Kobe.
Law and procedure for patenting inventions, employer-employee relationship, trademarks. Pr., jr standing.

GENERAL LITERATURE

Professor Benham.

101. **Introduction to Criticism and Literature.** S. (5) Benham.
The relation to life in the light of recent critical, philosophical, psychological, and social scholarship. (May receive credit in English.)
- 191, 192, 193. **Major Conference.** A,W,S. (3, 3, 3) Benham.
A synthetic view of the literatures of the world as they have affected English literature. Course conducted by means of lectures and readings in English literature and other literatures in translation.

GENERAL STUDIES

Advisory Committee: *H. B. Densmore* (Greek), Chairman; *Russell Blankenship* (English); *Carl Dakan* (Economics and Business); *Grace Denny* (Home Economics); *G. E. Goodspeed* (Geology); *C. Leo Hitchcock* (Botany); *Merrill M. Jensen* (History); *E. B. Stevens* (Education); *E. R. Wilcox* (General Engineering); *Curtis T. Williams* (Education).

- 21-22-23. **American Social Trends.** A,W,S. (5-5-5) Jensen.
Non-technical introduction to the various social sciences in terms of American experiences and institutions. Lectures, discussion sections, supervised reading and individual projects.
- 191, 192, 193. **Senior Study.** A,W,S. (†)
Seniors working for a degree who need extra time for their major project may enroll in these courses for credit to be arranged on consultation with their advisers.

†To be arranged.

GEOGRAPHY

Professor Martin; Associate Professor Seeman; Assistant Professors Church, Earle; Instructor Pierson.

1. **Survey of World Geography.** A,W, S. (5) Earle.
World regions; man's changing relation to his habitat; background for social sciences. Not open to students who have had 7 or 70.
2. **Physical Geography.** A,W, S. (5) Seeman.
Physical basis of geography. Major and minor land forms; types and uses of soils; underground and surface waters; mineral products. Use and interpretation of topographic maps. Lab., field trips.
7. **Economic Geography.** A,W, S. (5) Martin, Seeman.
Resources of the world; factors locating industries; commodities in international trade. Not open to students who have had 1 or 70.
11. **Weather and Climate.** A,W, S. (5) Church, Earle, Pierson.
World distribution of temperature, pressure, winds, precipitation. Climatic cycles. Interpretation of weather maps.
70. **World Geography.** A. (5) Martin, Pierson.
Economic-political geography especially designed for journalism students. Not open to students who have had 1 or 7.
101. **Survey of World Regional Geography.** A,W, S. (5) Earle.
Same as 1, but with additional work and readings. Not open to those who have had 1, 7, or 70. Pr., junior standing.
102. **Geography of United States.** A,W, S. (5) Martin, Seeman, Church.
Regional specialization; sectionalism, growth of cities, internal problems. Pr., 1 or 101, 7, or junior standing.
103. **Geography of Asia.** A. (5) Earle.
Countries and natural regions. Distribution of resources; population problems. Transportation and trade. Pr., 1, or 101, 7, or permission.
104. **Geography of Europe.** S. (5) Martin.
Survey by countries. Localization of manufactures. Geographic bases for commerce. Pr., 1 or 101, 7, or permission.
105. **Geography of South America.** S. (5) Seeman.
Economic and social development; raw materials and potential markets; inter-American relations. Pr., 1 or 101, 7, or permission.
106. **Geography of Africa-Australasia.** W. (5) Earle.
European colonization and development. The native problem. Resources, plantation agriculture, tropical trade. Pr., 1 or 101, 7, or permission.
108. **Geography of Canada and Alaska.** S. (3) Pierson.
Natural regions, resources, economic and social development; problems of northern settlement. Pr., 1 or 101, 7, or permission.
110. **Resources of the Pacific Northwest.** S. (3) Pierson.
Geography and resources of the Northwest; rural and urban development; industry and commerce; regional problems.
111. **Climatology.** A,W, S. (5) Church, Earle, Pierson.
Same as 11, but with additional work and readings. Not open to those who have had 11. Pr., junior standing.

112. **Meteorology.** W. (5) Church.
Fundamentals of the physics of the atmosphere. Pr., 11, or 111.
115. **Geography of Middle America.** W. (3) Seeman.
Regions and resources of Mexico, Central America, the West Indies. Transportation and trade. American policy in the Caribbean. Pr., 1 or 101, 7, or permission.
121. **Regional Climatology.** A. (5) Church.
Descriptive analysis of climatic characteristics of continents. Controls of climate. Types and distribution. Climatic classifications. Pr., 11, 111, or permission.
122. **Synoptic Meteorology.** W. (3) Church.
The troposphere. Radiation, temperature, clouds, fog, thunderstorms, ice formation on aircraft. Engineering juniors and seniors only.
125. **Geographic Background of History.** W. (3) Martin.
Use of geographic data in interpretation of American history. Pr., 10 credits of history or geography.
140. **Geography in the Social Studies.** W. (3) Earle.
The place of geography in the social science curriculum. Pr., 10 credits in geography, or permission.
152. **Air Mass Analysis.** S. (3) Church.
The frontal theory. Vertical and horizontal properties of air masses. Life cycle of extra-tropical cyclones. Practice forecasting. Pr., 112 or 122.
153. **Meteorological Laboratory.** S. (2) Church.
Construction and analysis of weather charts based on frontal and isentropic methods. Practice forecasting. To be taken concurrently with 152.
155. **Influences of Geographic Environment.** S. (5) Earle.
Development of geographic theory; studies of occupance; urbanization; human adjustment. Pr., 20 credits of geography, or permission.
160. **Cartography.** W. (5) Pierson.
Map projections, areal distribution, scales, sketch mapping, block diagrams.
170. **Conservation of Natural Resources.** W. (5) Martin.
Public policy in the management of soils, forests, minerals, fisheries, etc. Land reclamation; problems in resource utilization.
175. **Problems in Political Geography.** A. (5) Seeman.
Geographic aspects of current international issues. Territorial problems. Pr., 10 credits of geography, permission.
192. **Research Problems in Meteorology and Climatology.** A,W,S. (†) Church.
Pr., permission.
195. **Individual Conference and Research.** A,W,S. (2 to 5) Staff.
For advanced undergraduates. Pr., permission.
199. **Preseminar in Geography.** S. (5) Martin.
Training in research methods; preparation and presentation of a paper. Pr., permission.

Teachers' Course in Geography. (See Educ. 75-O.)

†To be arranged.

Courses for Graduates Only

200. Seminar. A. (3), S. (5) Earle, Martin.
The special topic autumn quarter will be geography source materials. The work spring quarter will consist of preparation and presentation of a paper on an approved topic.
201. Research. A,W,S. (†) Staff.
207. World Resources and Industries. A,W,S. (†) Martin, Seeman.
Readings and research.
211. Research in Meteorology. A,W,S. (†) Church.
220. Land Utilization. S. (5) Pierson.
Resource inventory, land classification, conservation, and theory of use.

GEOLOGY

Professors Goodspeed, Weaver, Fuller; Associate Professor Mackin; Assistant Professors Barksdale, Coombs.

1. Survey of Geology. A,W,S. (5) Mackin, Barksdale.
Lectures, laboratory, field trips.
5. Rocks and Minerals. A. (5) Goodspeed.
Pr., at least a high school course in chemistry.
6. Elements of Physiography. W. (5) Mackin.
Processes and agencies affecting the earth's surface; relation of topography to structure, etc. Pr., 1 or 5.
7. Historical Geology. S. (5) Weaver.
Origin and evolution of the earth, with emphasis on the general history of North America. Pr., five credits of geology or Zool. 1 and 2.
101. History of Geology. A. (3) Barksdale.
The rise of geology as a science. Required of all majors in geology. Pr., 15 credits in geology.
105. Petrology as Applied to Engineering. A. (5) Goodspeed, Coombs.
Same as 5, but with additional work, readings. For students in civil, electrical, or mechanical engineering. Pr., junior standing.
106. Elements of Physiography. W. (5) Mackin.
Same as 6, but with additional work and readings. Pr., junior standing.
107. Historical Geology. S. (5) Weaver.
Same as 7, but with additional work and reading. Pr., 5 credits in geology or Zool. 1 and 2, and junior standing.
112. Physiography of Eastern United States. A. (5) Mackin.
Physical history of surface forms in the physiographic provinces of the eastern United States. Pr., 5, 6, 7.
- *113. Physiography of the Western United States.
114. Map Interpretation: Constructional Landforms. W. (5) Mackin.
- *115. Map Interpretation: Destructional Landforms.

†To be arranged.

*Not offered in 1940-1941.

116. **Glacial Geology.** S. (3 to 5) Mackin.
121. **Mineralogy.** S. (5) Goodspeed, Coombs.
Elements of crystallography and blowpipe analysis. Descriptive and determinative mineralogy. Pr., 5, and at least high school chemistry.
122. **Field Methods.** S. (5) Barksdale.
Methods of geologic and topographic surveying and recording in geologic field work. Pr., 5, 6, 7.
123. **Optical Mineralogy.** A. (3 or 5) Coombs.
Principles in the use of the petrographic microscope and recognition of common minerals in thin section. Pr., 5, 121 (except for U.D. chemistry students).
124. **Petrography and Petrology.** W. (3 or 5) Coombs.
Systematic study of rocks both in the hand specimen and in thin section with the petrographic microscope. Pr., 5, 123.
125. **Petrography and Petrology.** S. (3 or 5) Goodspeed.
Continuation of methods in 124. Special problems of petrogenesis and field petrology. Pr., 123, 124.
126. **Sedimentary Petrography.** W. (2 or 5) Coombs.
Principles of correlation of sedimentary rocks by their mineral constituents. Pr., 125.
127. **Ore Deposits.** W. (5) Goodspeed.
Form, structure, mineralogy, petrology, and mode of origin of ore deposits. Pr., 5 or 105, 121, 124.
- *128. **Mineral Resources—Non-Metals.**
- *129. **Mineral Resources—Metals.**
130. **General Paleontology.** W. (5) Weaver.
Principles of paleontology and a general systematic study of fossils. Pr., 7, or Zool. 1 and 2.
131. **Stratigraphy.** A. (3) Barksdale.
Origin, deposition, and methods of correlation of sedimentary strata. Pr., 7, 125.
132. **Invertebrate Paleontology.** S. (5) Weaver.
Important type fossils of each geologic period. Pr., 7, or Zool. 1 and 2.
133. **Mesozoic Geology.** W. (5) Weaver.
Geological history of the Mesozoic era and its fauna from a world-wide standpoint with special emphasis upon Europe. Pr., 130, 132.
134. **Tertiary Geology.** S. (5) Weaver.
Tertiary formations and their faunas, with special emphasis upon Europe and correlation with North and South America. Pr., 130, 132.
- *135. **Study of Ammonites.**
- *136. **Geology of South America.**
137. **Tertiary Faunas of Washington.** W. (5) Weaver.
142. **Structural Geology.** W. (5) Barksdale.
Interpretation of rock structures and their genesis. Pr., 5, 6, 7.
143. **Structural Geology.** S. (2 or 3) Barksdale.
Continuation of 142, with special emphasis on the broader problems of earth structure. Pr., 142.

*Not offered in 1940-1941.

*150. Elements of Seismology.

*160. Principles of Geomorphology.

181. Preparation of Geologic Reports and Publications. S. (3) Coombs.
The procedure in preparing and illustrating a geological report. Pr., senior standing in geology.

190. Undergraduate Thesis. A,W,S. (†) Staff.
Preparation of thesis in geology or any of its branches. Thesis must be submitted at least one month before graduation. Pr., senior standing. Five credits allowed for thesis.

Course Open to Approved Seniors and Graduates

200. Field Studies. A,W,S. (†) Staff.
Advanced work in geology or a general seminar. Open to advanced undergraduates upon permission of instructor.

Courses for Graduates Only

Two modern languages, a Teutonic and a Romanic, are necessary for graduate work in geology.

201. Advanced Petrography and Petrology of Igneous Rocks. A,W,S. (†) Goodspeed.

202. Advanced Petrography and Petrology of Metamorphic Rocks. A,W,S. (†) Goodspeed.

212. Advanced Studies or Field Work in Physiography. A,W,S. (†) Mackin.

220. Advanced or Research Work in Mineralogy, Petrography, and Petrology. A,W,S. (†) Goodspeed, Coombs.

227. Advanced or Research Work in Economic Geology. A,W,S. (†) Goodspeed.

230. Advanced or Research Work in Paleontology and Stratigraphy. A,W,S. (†) Weaver.

240. Advanced Studies in Structural Geology. A,W,S. (†) Barksdale.

GERMANIC LANGUAGES AND LITERATURE

*Professors Vail, Eckelman, Lauer, Meisnest; Assistant Professor Meyer;
Instructors Ankele, Schertel; Associates Wesner, Wilkie.*

Students of mathematics and the applied sciences should take German 1-2, 3, an additional course in second-year German, 60, and the upper-division scientific courses for specialized reading.

Students of history and the social sciences should elect German 10 and the courses listed in the 120's.

Credit is allowed for any quarter in any course except German 1-2.

1-2. First Year. A,W,S. (5-5) Staff.
Stage pronunciation, grammar, reading of easy prose, oral and aural training.

3. First Year Reading. A,W,S. (5) Staff.
Modern prose, oral and aural training, continuance of grammar and vocabulary studies. Pr., 1-2, or one year in high school.

*Not offered in 1940-1941.

†To be arranged.

4. **Second Year Reading.** A,W,S. (5) Staff.
Pronunciation, vocabulary building, modern prose, aural and oral training. Pr., 3, or two years high school.
5. **Second Year Reading.** A,W,S. (3) Staff.
Vocabulary building, modern prose, oral and aural training. Pr., 3, or two years high school. Not open to students having had 4.
6. **Second Year Reading.** A,W. (2) Staff.
Vocabulary building, modern prose, and aural training. Pr., 3, or two years high school. Not open to students having had 4.
7. **Second Year Grammar Review.** W. (3) Wesner.
Systematic grammar review with some elementary composition. For second-year students wishing to develop correctness of expression and accuracy in reading. Especially valuable as preparation for 110, 111, 112. Pr., 4, 5, or 6.
10. **Advanced Second Year Reading.** A,W. (3) Ankele.
Pronunciation, modern prose, vocabulary building, oral and aural training. Pr., 4, 5, or 6.
30. **Conversation Based on Rapid Reading.** S. (3) Ankele.
Second year reading. Special emphasis upon oral and aural training. For students interested primarily in acquiring a speaking knowledge of the language. Pr., 4, 5, or 6.
60. **Lower Division Scientific German.** A,W,S. (3) Meyer, Wesner, Wilkie.
Introduction to general scientific German. Outside and class reading. Vocabulary building. Students making a grade of "B" in this course may go directly to Upper Division Scientific German, if they desire. Pr., 4, 5, or 6.
61. **Intermediate Scientific German.** W,S. (2) Wilkie.
Continuation of 60.
100. **Literature in Translation: Main Currents in German Literature.** A. (5) Wilkie.
The Middle Ages to the 19th century. Major tendencies and movements as reflected in personalities and masterpieces. No knowledge of German required. Open to freshmen and sophomores. Lectures, discussions, reports.
101. **Literature in Translation: The Novel.** W. (3) Eckelman.
A nineteenth century survey of the German novel. Its reflection of the main currents of thought. Discussion, special reports. No knowledge of German required. Open to freshmen and sophomores.
- *102. **Literature in Translation: Goethe.**
- *103. **Literature in Translation: The Drama.**
104. **Literature in Translation: Frenssen and Thomas Mann.** S. (3) Schertel.
Study of conflicting tendencies in German thought and letters during the 20th century. Social and economic backgrounds. Interpretation of *Jorn Uhl*, *Buddenbrooks*, *Magic Mountain*, and *Joseph and His Brothers*. No knowledge of German required. Open to freshmen and sophomores.
- 110, 111, 112. **Grammar and Composition.** A,W,S. (3, 3, 3) Vail.
Grammar and syntax, translation and original composition, dictation, oral work, letter writing, themes. Primarily for majors and minors. Pr., eight credits of second-year German.
- 113, 114, 115. **Upper Division Scientific German.** A,W,S. (2 or 3 each quarter) Schertel.
Scientific monographs, technical periodicals. Each student reports on reading in his own field in weekly conferences. Pr., 60, grade "B," or 61, or equivalent.

*Not offered in 1940-1941.

116. Upper Division Scientific German for Pre-medics. W, S. (3) Schertel.
Readings in medical German. Pr., 60, grade "B," or 61, or equivalent.
118. Phonetics. S. (2) Meyer.
Systematic study of the nature, production, and classification of the German speech sounds. Stage pronunciation, phonetic transcription, oral practice. Pr., 3.
119. History of the German Language. S. (5) Meyer.
From early Germanic to the present day: sound changes, and the development of dialect and standard German. Open to senior and graduate majors and minors, and to junior majors.
120. Introduction to Schiller. A. (3) Ankele.
An outline of his life, selected dramas, and other works. Discussion, oral and written reports. Pr., eight credits of second-year German, or equivalent.
- *121. Introduction to Goethe.
- *122. Introduction to Keller.
123. Introduction to Heimatkunst. W. (3) Eckelman.
Reading of earlier works of Frenssen, Lons and others. Pr., eight credits of second-year German, or equivalent.
124. Nineteenth Century Novelle. S. (3) Wesner.
Reading of *Novellen* by C. F. Meyer. Pr., eight credits of second-year German, or equivalent.
- *125. Recent Novellen.
135. Modern Novels. S. (3) Eckelman.
Reading from the best prose literature after 1880. Literary topics, oral and written. Pr., 120, or equivalent.
- *137, 138. Modern Drama.
- *139. Studies in German Literature.
- 140, 141. History of German Literature. A, W. (3, 3) Vail.
Survey of German literature from the beginning to the Age of Goethe. Assigned readings in chief masterpieces, background studies. Pr., 120 or equivalent.
- *142. Lyrics and Ballads.
143. Expressionism and Twentieth Century Realism. A. (3) Eckelman.
The reading of selected dramas and *Novellen* from these movements. Oral discussion and assigned topics. Pr., 120 or equivalent.
150. Lessing. Life and Dramatic Works. S. (3) Vail.
Comprehensive study of Lessing's dramas and critical writings. Pr., 120 or equivalent.
- *152. Goethe's Lyric Poetry.
- *153. Goethe's Dramatic Works.
165. Schiller's Historical Dramas. W. (3) Vail.
Reading of the historical dramas and study of their dramatic technique. Pr., 120, or equivalent.
- *166, 167. Goethe's Faust, Parts I and II.
- *180, 181, 182. Nineteenth Century Literature.

Teachers' Course in German. (See Educ. 75L.)

*Not offered in 1940-1941.

For courses in comparative philology, consult the offerings in the Department of Scandinavian Languages.

Courses for Graduates Only

- *200, 201, 202. Goethe's Lyrics and Letters.
- *203, 204, 205. Storm and Stress Period.
- *206, 207, 208. The Romantic School.
- *209, 211, 212. Schiller.
- 220. Interrelations of German and English Literature. A. (3) Vail.
A survey, particularly of the influence of English literature upon the subject matter, form, and spirit of the German literature of the eighteenth century.
- *221, 222. Interrelations of German and English Literature.
- *230. Reformation.
- *235. Pietism and Sentimentalism.
- 240. The Literature of the Middle High German Period. W. (3) Eckelman.
- 243. The Baroque Literature of the 17th Century. S. (3) Eckelman.
- *250. Middle High German.
- 251. Middle High German Literature in the Original. W. (5) Meyer.
- *255. Old High German.
- *256. Old High German Literature in the Original.
- 258. Gothic. A. (5) Meyer.
Grammar and reading of selections from the Gothic Bible.
- *259. Old Saxon.
- *270. Renaissance.

HISTORY

Professors Holt, Levy, Lucas; Associate Professors Dobie, Quainton; Assistant Professors Costigan, Gates, Jensen, Katz; Lecturer Kimmel; Associate Davis.

1-2. Medieval and Modern European History. A,W,S. (5-5)

Lucas, Quainton, Dobie.

General survey from the Roman world empire of Augustus to our own times. Both 1 and 2 given each quarter.

3, 4. Survey of Western Civilization. A,W. (5,5)

Lucas, Katz.

Introduction to the social sciences.

5-6. English Political and Social History. A,W. (5-5)

Costigan.

By special work, upper division students may receive upper division credit. Pre-law students may substitute 106-107 for 6.

*10. Representative Americans.

*20. Great Europeans of the Nineteenth Century.

* Not offered in 1940-1941.

- 21-22-23. **American Social Trends.** A,W,S. (5-5-5) **Jensen.**
Survey of social trends from the earliest times to the present. Lectures, discussion sections, supervised reading, and individual projects.
- 57-58-59. **American History from 1607 to the Present Time.** A,W,S. (3-3-3) **Holt.**
Not open to freshmen.
- 72-73. **Ancient History.** W,S. (5-5) **Katz.**
The Ancient Mediterranean world, Greece and Rome. By special work, upper division students may receive upper division credit. Not open to freshmen.
98. **History of American Industrial Society.** A. (5) **Gates.**
Industry, finance, commerce, and the development of urban institutions.
- *99. **History of American Rural Civilization.**
100. **Greece in the Age of Pericles.** W. (3) **Katz.**
101. **Alexander the Great, and the Hellenistic Period.** S. (3) **Katz.**
- *103. **Age of Caesar and Cicero: History and Culture.**
- *104. **The Roman Empire.**
- 106-107. **English Constitutional History.** W,S. (5-5) **Costigan.**
Development of legal and governmental institutions of the English people to the present time. Pr., 5.
111. **Greek and Roman Political Institutions.** A. (5) **Katz.**
114. **The Culture of the Renaissance.** A. (5) **Lucas.**
- *115. **The Reformation.**
- *117. **France from the Reformation to the French Revolution.**
118. **Medieval Civilization: The Dark Ages from the Barbarian Invasions to The Age of Feudalism (350-1000).** W. (5) **Lucas.**
- *119. **Medieval Civilization: Economic Aspects of the Middle Ages from the Decline of Rome to the Renaissance.**
120. **Medieval Civilization: Art, Letters, Religion, Education and Thought.** S. (5) **Lucas.**
- *124. **Economic History of Europe Since the Industrial Revolution.**
- *125. **Great European Treaties, 1453-1925.**
129. **The French Revolution and Napoleonic Era.** A. (5) **Quainton.**
130. **Europe 1814-1870.** W. (5) **Quainton.**
131. **Europe 1870-1914.** S. (5) **Quainton.**
132. **History of Modern Colonial Empires.** S. (5) **Dobie.**
133. **Europe Since 1914.** A. (5) **Levy.**
135. **History of Modern Military Systems from Gustavus Adolphus to the Present.** W. (3) **Kimmel.**
Pr., junior standing or permission.
- *140. **American Colonial History.**

*Not offered in 1940-1941.

***141. American Revolution and Confederation.**

144. History of the United States, 1789-1829. W. (5) Gates.

145. History of the United States, 1829-1860. S. (5) Gates.

147. History of the Civil War Period. A. (5) Holt.

148. History of the Reconstruction Period. W. (5) Holt.

149. History of National Development: From the close of the Reconstruction Period to 1900. S. (5) Holt.

***150. History of National Development: From 1900 to the Present.**155. History of Canada. S. (5) Dobie.
Canadian development to the present time.

158. The United States in World Affairs: 1776-1861. A. (5) Gates.

159. The United States in World Affairs: 1861 to the Present Day. W. (5) Gates.

165. History of the West and Pacific Northwest. A. (5) Jensen.

166. Constitutional Law in Europe. W. (3) Levy.

***170. Constitutional History of the United States: From the Colonial Foundations to 1801.**

171. Constitutional History of the United States: From 1801 to the Present. S. (5) Jensen.

***180. History of the British Empire since 1783: Britain in Africa and the Pacific.**

181. History of the British Empire since 1783: British Commonwealth of Nations. W. (5) Dobie.

182. England in the Nineteenth Century. A. (5) Costigan.

185. England in the Eighteenth Century. S. (5) Costigan.

190. Introduction to Roman Law. A. (5) Levy.

191. Comparative Law. W. (3) Levy.

A brief summary of the development, character, and judicial organization of French and German legal systems. Introduction to comparative methods in such problems as specific performance in the law of contracts, coincidence between delivery and payment, offer and acceptance, etc.

192. Introduction to Modern Civil Law. S. (5) Levy.
Main features of the law of persons, property, contracts, torts, and succession in the world today, as developed on the basis of Roman law.**Teachers' Course in History.** (See Educ. 75M.)*Courses for Graduates Only*201. Historiography. A. (5) Katz.
Normally the first graduate course in history. Required of all majors and minors.***207. Seminar in Greek and Roman History.**

208, 209. Seminar in Greek and Roman History. W, S. (3,3) Katz.

* Not offered in 1940-1941.

- *211-212-213. Seminar in European History (1300-1600).
 216, 217. Seminar in Philosophy of History. W, S. (3,3) Costigan.
 218, 219. Seminar in British Empire. A, W. (3,3) Dobie.
 221-222-223. Seminar in American History. A, W, S. (3-3-3) McMahon.
 225-226. Seminar in American History. W, S. (3-3) Gates.
 Subject for 1940-1941: American Foreign Relations, 1790-1914.
 227-228-229. Seminar in American History. A, W, S. (3-3-3) Jensen.
 231, 232, 233. Seminar in European History (1600-1815). A, W, S. (3,3,3) Quinton.
 234. Seminar in Roman Law. W. (3) Levy.
 300, 301, 302. Individual Research or Thesis Work. A, W, S. (†) Staff.

HOME ECONOMICS

Professors Raitt, Denny, Fish, Rountree; Associate Professors Bliss, Dresslar, Payne; Assistant Professors Ingalls, Terrell, Tilden, Westerman; Lecturer Wade; Instructors Dorrance, Sawyer, Starr, Thorne.

7. Introduction to Home Economics. A. (2) Raitt.
 Function of home economics, history, present status in technological and relational aspects, place in curriculum, professional opportunities, personal accounts, and budgets.
 9. Nutrition for Student Nurses. A, W, S. (6) Bliss.
 Composition and nutritive value of foods; food preparation; physiological needs in relation to food. Open to student nurses only. Pr., Chem. 21.
 12. Costume Design and Construction. A, W, S. (5) Payne, Ingalls, Starr.
 General enough to be of practical value if only one course is taken, yet basically organized as a foundation for the costume design courses which follow. Not open to freshmen.
 15. Food Preparation. A, W, S. (5) Dresslar, Tilden.
 General enough to be of practical value if only one course is taken, yet basically organized as a foundation for all the food preparation which follows. Technics presented by demonstration followed by laboratory practice. Not open to freshmen.
 24. Textiles for Non-Majors. A. (2) Dorrance.
 Textile fibers and fabrics, characteristics, varieties, uses, and care.
 25. Textiles. A, W, S. (5) Denny.
 Textile products and their uses, economic and esthetic values. Relation of raw material, construction, and finish to quality and cost of fabrics. Not open to freshmen.
 26. Institution Textiles. S. (3) Denny.
 Textile supplies for institutions. Methods of purchase, specifications, testing, storage, care.
 41. Home Furnishings for Non-Majors. S. (3) Dorrance.
 Furnishing of homes in terms of artistic structure, color harmony, cost, and upkeep.
 47. Home Furnishing. A, W, S. (5) Denny.
 Economic and esthetic values in present day furnishing, appreciation of rare rugs and old silver, historic furniture, tapestry, china, and pictures. Pr., Art 9.
 101, 102. Needlecraft. A, W. (2,2) Payne.
 Interpretation of the needle arts of various nationalities. Application of authentic and original designs. Study of historic laces and embroideries is carried through the courses. Pr., 12, Art 9.

*Not offered in 1940-1941.

†To be arranged.

104. **Nutrition for Non-Majors.** S. (2) Rowntree.
For physical education majors, pre-medics, social service workers and others for whom a specific nutritional knowledge is essential. Pr., Physiol. 7, high school or college chemistry, junior standing, or permission of instructor.
105. **Diet Therapy for Graduate and Student Nurses.** W, S. (5) Westerman.
Pr., graduate nurse; or Home Econ. 9, Chem. 1, 2, 137, Physiol. 53, 54.
106. **Nutrition for Public Health Nurses.** A. (5) Westerman.
Pr., graduate nurse.
- 107-108. **Nutrition.** A,W. (5-3) Rowntree.
Fundamental principles of human nutrition. Pr., Chem. 135-136. Pre-medical students and chemistry majors may enroll with the instructor's consent. Prerequisite to all advanced courses in nutrition.
109. **Cost-of-Living Studies and Family Budgets.** W. (3) Fish.
Cost-of-living and consumption studies; economic factors influencing family standards, expenditures and levels of living; attempts through social control to raise levels of living. Of special interest to social workers.
- *110. **Food Study for Technology.**
111. **Nutrition for Technology.** S. (5) Rowntree.
Fundamentals of nutrition. Special emphasis on the changes in nutritive value produced through commercial preparation and processing. Pr., Chem. 132.
112. **Costume Design and Construction.** A,W. (3) Staff.
Study and construction of children's clothing and wool dresses with choices based on personality, principles of design, and social and economic factors. Pr., 12, Art 9.
113. **Costume Design and Construction.** W, S. (3) Ingalls.
Design of clothing by modeling garments in muslin. Final problem in silk. Psychology of dress, factory-made clothing, fashion, and sources of consumer information. Pr., 112.
114. **Costume Design and Construction.** S. (3) Dorrance.
Application of the basic principles of coat and suit construction. Selection and purchase of clothing as related to the budget. Pr., 113.
115. **Food Preparation.** A,W. (3) Dresslar, Tilden.
Relation of the fundamental sciences to the processes and technics of food preparation. Introduction to investigation methods. Pr., 15, Chem. 1-2, Physiol. 7.
116. **Food Preparation.** W,S. (5) Dresslar, Tilden.
Adapted for teacher-training majors. Pr., 115.
120. **Advanced Food Preparation.** W,S. (3) Tilden.
Contribution of various countries to the art of food preparation. Food supply and selection at different economic levels. Adapted for institution administration majors. Pr., 115.
121. **Institution Food Preparation.** A,S. (5) Tilden.
A study of large quantity manipulation, cost accounting, standardization of formulas, menu planning. Pr., 120.
122. **Institution Purchasing.** W. (3) Terrell.
Factors influencing quality, grade, and cost of food with a view to developing accurate judgments in food purchase. Pr., 120.
123. **Institution Management I.** W. (3) Raitt.
Organization, housing, and furnishing standards for institutions. Open to students accepted for the professional curriculum; others by permission of instructor. Pr., E.B. 1-2.
124. **Institution Management II.** W, S. (3) Terrell.
Efficiency analysis. Scientific principles applied to actual practice. Two-hour conference and six hours lab. a week. Open to students accepted for the professional curriculum; others by permission of instructor. Pr., 121.

* Not offered in 1940-1941.

126. **Demonstration Cookery.** S. (3) Dresslar.
Study, observation, and experience in the technic of the demonstration as an effective method in teaching and business. Pr., 116 or 120.
131. **Clothing Selection.** W,S. (2) Ingalls.
Choice of clothing, emphasizing appropriateness to personality and occasion as well as judgment of quality and cost. Two lectures a week. No credit to those who take 12.
133. **History of Costume.** S. (5) Payne.
Fashion as an expression of esthetic, social, and economic life. Of special interest to students in dramatics and professional costume design. A large collection of national costumes enriches the course. Pr., 112.
141. **Home Selection and Management.** A,W,S. (5) Fish.
Housing standards, materials, costs, financing, social problems, principles of scientific management; managing family resources; developing a satisfying home. Pr., or parallel, Physics 89-90 or Chem. 1-2, or permission of instructor.
144. **Income Management.** A,W,S. (3) Fish.
Planning personal and family expenditures in accordance with needs and aims in living; problems of choice-making and spending; factors influencing real income; guides and standards for planning expenditures; considerations for savings and investment program. Pr., 1 or 4, or permission of instructor.
145. **Family Relationships.** W,S. (3) Raitt.
Organization of the household. Basic principles and desirable attitudes in family relationships. Pr., E.B. 1 or 4, Soc. 112, junior standing.
148. **Home Management House.** A,W,S. (2) Thorne.
Organization, financial management, records, housekeeping, food preparation and service, and hospitality. For home economics majors. Pr., fifth year.
- 160, 161. **Advanced Costume Design and Construction.** A,W. (5, 5) Dorrance, Payne.
Creative designing of costumes by flat pattern and modeling methods. Open to students accepted for the professional curriculum and others by permission of instructor. Pr., 114, Art 169.
175. **Institution Equipment.** S. (3) Terrell.
Construction, operation, and care of equipment; routing of work. One-hour conference and eight hours laboratory work a week. Open to students accepted for the professional curriculum and others by permission of instructor. Pr., or parallel, 124.
181. **Consumer Problems.** A,W,S. (3) Fish.
The consumer's position in present-day markets; protection through legislation and other forces of social control; factors influencing consumer demand; standardization and informative labeling; advantages offered consumers by different types of retail stores; installment buying and consumer credit; how consumers may influence and be influenced by marketing policies, costs, and trends. Pr., E.B. 1 or 4, or permission of instructor.
187. **Experimental Cookery.** A. (3) Dresslar.
Study of fundamental principles of the entire field of cookery through reading and laboratory experimentation. Pr., senior or graduate standing, permission of the instructor.
188. **Advanced Textiles.** A. (3) Denny.
Technics and evaluation of testing methods, analysis of fabrics, textile legislation, standardization, consumer education. Pr., 25, E.B. 4.
189. **Hand Weaving.** S. (2) Starr.
Hand weaving as a medium of artistic expression. Color, design, texture, technic of weaving, interpretation of drafts. A collection of modern and traditional weaving of many countries is available for study. Pr., Art 9, H.E. 25.
190. **Child Nutrition and Care.** W,S. (5) Rowntree.
Problems of maternity and infancy, methods of improving physical and mental health of children. Laboratory work in University Child Nutrition Service. Pr., 107.

191. Diet Therapy. S. (3) Rowntree.
Open to students accepted for the professional curriculum, and others by permission of instructor. Pr., 108.
195. Research in Home Economics. A,W,S. (5) Staff.
An assigned problem in household management as a research project under various staff members. Pr., fifth year.
- 196, 197. Supervised Field Work in Institution Administration. W,S. (15, 15) Terrell.
Six months of supervised field work in the senior year. Pr., 195 credits.
The following are acceptable:
A. Hospital internship approved by the American Dietetic Association.
B. Administrative internship under the auspices of members of the Home Economics staff and approved by the American Dietetic Association.
C. Nursery School Service.
D. Field work in other lines as adequate supervision may be established.
198. Historic Textiles. W. (3) Denny.
A collection of rare materials is available for study of tapestry, rugs, lace, embroidery, damask, brocades, and velvets, in their historic settings. Pr., 25, 47, Art 9, 10, 11, or equivalent.
- Teachers' Course in Home Economics. (For junior and senior high school. See Educ. 75NA.)
- Teachers' Course in Home Economics. (For institution administration. See Educ. 75NB.)

Courses for Graduates Only

200. Investigation Cookery. A. (3) Dresslar.
Introduction to methods of research, study of problems in food supply and preparation based upon related sciences. Pr., 116 or 120.
- *202. Home Economics Education.
204. Introduction to Research in Nutrition. A. (5) Rowntree.
Elementary research carried on cooperatively in basal metabolism studies, animal experimentation, nitrogen, calcium and hemoglobin determination. Must parallel 214. Pr., 108.
- 205, 206. Research in Nutrition. W,S. (†) Rowntree.
Individual research in mineral or energy metabolism, animal feeding, or dietary studies. Pr., 204.
- 207, 208, 209. Research in Textiles. A,W,S. (†) Denny.
Pr., graduate standing. Confer with instructor before registering.
- 211, 212. Research in Costume Design. A,W. (†) Payne.
Pr., 114, 133.
214. Readings in Nutrition. A. (3) Rowntree.
Library research. Pr., 108.
215. Readings in Nutrition. W. (3) Rowntree.
Library research. Pr., 214.
- 220, 221, 222. Research in Institution Administration. A,W,S. (†) Terrell.
Problems dealing with food service and housing units in various types of institutions. Pr., 121, 122, 123, 124, 175, or equivalent.
245. Social and Economic Problems of the Consumer. A. (†) Fish.
Readings and a survey of research in the field of consumption. Pr., 144, 145, 181.
250. Thesis. A,W,S. (9) Staff.

*Not offered in 1940-1941.

†To be arranged.

JOURNALISM

Professors McKenzie, Jones; Associate Professors Benson, Christian, Kennedy; Assistant Professors Everest, Mansfield; Associate Bergh.

1. **Journalism as a Profession.** A. (1) McKenzie.
Required in the freshman year of pre-journalism majors.
2. **The Newspaper and Society.** W. (1) McKenzie.
Required in the freshman year of pre-journalism majors. Pr., 1.
51. **Preliminary News Writing.** A,W,S. (5) Christian, Benson, Mansfield.
Not open to freshmen; for majors and minors only. Required in the sophomore year of pre-journalism majors.
- 90,* 91, 92. **Contemporary Affairs.** W,S. (2, 2) Christian.
Current state, national, and world movements. Not open to freshmen.
125. **Principles of High School Journalism.** S. (5) Benson.
Introductory course primarily for teachers of high school and junior college journalism. Covers problems involved in editorial, advertising, circulation and mechanical production of school publications. Pr., 51.
130. **Fundamentals of Advertising.** A. (5) Jones.
The theory of advertising display, attention devices, media.
131. **Display Advertising.** W. (5) Jones.
Layouts and copy for publications advertising. Pr., 130.
132. **Advertising Typography.** S. (3) Jones.
Laboratory course in display advertising. Pr., 130, 131.
- 147-148-. **Fundamentals of Journalism.** A. (5-5) Staff.
Business management, contemporary affairs, reporting, copy reading.
- 149-150-151-. **Fundamentals of Journalism.** W. (5-5) Staff.
Advertising, reporting, contemporary affairs, law of the press, copy reading.
- 152-153-154. **Fundamentals of Journalism.** S. (5-5-5) Staff.
History of American journalism, public relations, advertising, contemporary affairs.
160. **Editorial Writing.** S. (3) Jones.
A study of leading editorial pages; daily assignments. Pr., 51.
- 171-172. **Magazine and Feature Writing and Trade Journalism.** A,W. (3-3) Jones.
Articles graded according to probable marketability.
- 173, 174-175. **Short Story Writing.** A,W,S. (5, 5-5) Mansfield.
Critical appreciation and practical work in the writing of short stories. Not open to lower division students. Signature of instructor necessary before registration for autumn quarter.
- 191, 192, 193. **Advanced Journalism.** A,W,S. (2, 2, 2) Staff.
Research and conference course, continuing junior journalism studies in journalistic problems. Pr., 147-154. Registration by special permission of instructors only.
195. **Independent Supervised Study.** A,W,S. (5 to 10) McKenzie.
Open to journalism majors who have completed their third year.
199. **Problems of Journalism.** A,W,S. (2 to 5) McKenzie.
Actual research in the field. Open to seniors and graduate students only.
201. **Propaganda.** S. (5) McKenzie.
Study of the crystallization of public opinion and of propaganda techniques.
- 225, 226, 227. **Advanced Short Story Writing.** A,W,S. (2 to 4 each quarter) Mansfield.
Class restricted to a maximum of eight students; admitted by special permission of instructor. Pr., 173, 174, 175.
250. **Research in Journalism.** A,W,S. (3 to 5 each quarter) Staff.
Admission by consent of instructor.

* Not offered in 1940-1941.

LAW

Professors Falknor, Ayer, Beardsley, Harsch, Levy, Luccock, McAllister, Nottelmann, O'Bryan, Richards, Sholley; Associate Professor Shattuck; Lecturers Shefelman, Thorgrimson.

FIRST YEAR

All first-year subjects are required

- | | |
|---|------------|
| ‡101. Contracts. A. (4); W, S. (3-3) | Shattuck. |
| Goble and Patterson, Cases on Contracts. | |
| ‡102. Torts. A. (4); W, S. (3-3) | Richards. |
| Bohlen, Cases on Torts, 3rd ed. | |
| ‡104. Property I. A, W, S. (3-3-3) | Harsch. |
| Fraser, Cases on Property, Vols. I and II. | |
| ‡105. Criminal Law and Procedure. A, W. (3-3) | O'Bryan. |
| Harno, Cases on Criminal Law, 2nd ed., supplemented by Washington statutes and cases. | |
| 112. Agency. S. (4) | Ayer. |
| Steffen, Cases on Agency. | |
| 130. Legal Bibliography. W. (3) | Beardsley. |
| Beardsley, Legal Bibliography and the Use of Law Books. | |

SECOND YEAR

All second-year subjects are required

- | | |
|---|-------------|
| ‡110. Sales. A, W. (3-3) | Ayer. |
| Casebook to be announced. | |
| 111. Wills and Administration. S. (3) | Richards. |
| Mechem and Atkinson, Cases on Wills and Administration, 2nd ed. | |
| 113. Domestic Relations. A. (3) | Richards. |
| Shattuck, Washington Materials on Domestic Relations. | |
| ‡114. Equity. W, S. (4-4) | Nottelmann. |
| Walsh, Cases on Equity. | |
| ‡115. Evidence. A, W. (4-4) | Falknor. |
| Morgan and Maguire, Cases on Evidence. | |
| ‡116. Bills and Notes. W, S. (3-3) | Sholley. |
| Aigler, Cases on Negotiable Paper and Banking. | |
| 119. Constitutional Law I. A. (5) | Sholley. |
| Dowling, Cases on Constitutional Law. | |
| 127. Code Pleading. S. (3) | O'Bryan. |
| Throckmorton, Cases on Code Pleading. | |

‡No examination for credit until completion of entire course.

THIRD YEAR

All third-year subjects are required

117. **Legal Administration and Ethics.** W. (3) Shefelman.
Cheatham, Cases and Materials on the Legal Profession.
120. **Constitutional Law II.** A. (3) McAllister.
Casebook to be announced.
121. **Administrative Law.** S. (4) McAllister.
Casebook to be announced.
- ‡123. **Property II.** W, S. (3-3) Luccock.
Casebook to be announced.
- ‡126. **Trusts.** A, W. (3-3) Nottelmann.
Scott, Cases on Trusts, 2nd ed.
142. **Practice and Procedure I.** A. (3) O'Bryan.
McBaine, Cases on Trial Practice, supplemented by Washington Code of Procedure and Washington cases.
In 142 and 144, Moot Court meets once each week. Each student is required to bring his case to issue, introduce the evidence, and try the case before the court or jury.
144. **Practice and Procedure III.** W. and S. (3) O'Bryan.
Mechem and Atkinson, Cases on Wills and Administration, 2nd ed., supplemented by the Washington Probate Code and Washington cases.
- ‡145. **Credit Transactions.** A, W. (4-2) Shattuck.
Casebook to be announced.
- ‡149. **Business Associations.** W, S. (4-4) Ayer.
Ballantine and Lattin, Cases and Materials on the Law of Corporations. Cases assigned on other business organizations.

FOURTH YEAR

Required Courses

118. **Conflict of Laws.** S. (5) Sholley.
Cheatham, Dowling, Goodrich, Cases on Conflict of Laws.
124. **Community Property.** S. (3) Luccock.
Casebook to be announced.
135. **Legislation.** W. (4) Harsch.
Casebook to be announced.
146. **Taxation.** A. (4) McAllister.
Magill and Maguire, Cases on Taxation, 2nd ed., 1927.
199. **Seminars and Individual Research Courses.**
Ten hours required of the following one-quarter seminars, each carrying five hours of credit.
- *199A. **Trusts.**
- 199B. **Banking Law and Advanced Problems in Security.** S. (5) Shattuck.
- *199C. **Public Utility Regulation.**
- *199D. **Income Taxation.**
- *199E. **Corporate Reorganization.**

‡No examination for credit until completion of entire course.

*Not offered in 1940-1941.

*199F. Corporation Practice.

*199G. Comparative Law.

199H. Government Regulation of Business. W. (5)

McAllister.

*199I. Civil and Criminal Procedure.

*199J. Labor Law.

ELECTIVE FOURTH-YEAR COURSES

Sixteen hours of electives to be selected. Of this sixteen, an additional five hours of seminar or individual research may be undertaken with permission of the dean.

‡122. International Law. A,W. (3-3)
Casebook to be announced.

Martin.

*125. Trade Regulation.

*128. Damages.

*129. Drafting of Legal Instruments.

*131. Quasi-Contracts.

132. Legal Accounting. A. (3)

McConahey.

Graham and Katz, Accounting in Law Practice and Assigned Cases.

133. Public Utilities. A. (5)

Nottelmann.

Welch, Cases on Public Utility Regulation.

134. Federal Jurisdiction and Procedure. W. (4)

Luccock.

Dobie, Cases on Federal Procedure (1935).

*136. Insurance.

*137. Water Rights.

*138. Future Interests.

139. Administration of Debtors' Estates. A. (4)

Luccock.

Hanna and McLaughlin, Cases on Administration of Debtors' Estates.

*140. Mining Law.

141. Admiralty. S. (4)

Shefelman.

Sayre, Cases on Admiralty.

*143. Practice and Procedure II.

147. Municipal Corporations. S. (4)

Thorgrimson.

Tooke, Cases on Municipal Corporations, 2nd ed.

190. Roman Law. A. (3)

Levy.

Radin, Handbook of Roman Law.

191. Comparative Law. W. (3)

Levy.

Rheinstein, Cases and Materials on Comparative Law of Sales.

199K. Research Problems in Law. A,W,S. (1 to 3)

Staff.

Properly qualified third and fourth year students may, with the consent of a member of the law faculty and the dean of the school, receive from one to three credits for individual research in any of the major fields covered by the curriculum.

*Not offered in 1940-1941.

‡No examination for credit until completion of entire course.

LIBERAL ARTS

Professor Cory; Instructor Lutey.

1. **Introduction to Modern Thought.** A, S. (5, 5) **Cory, Lutey.**
Study of man's place in the universe in the light of contemporary thought; cosmic origins; the origin and nature of life; mind and behavior; values. Upper division students may obtain upper division credit on the basis of extra reading and conferences.
11. **Introduction to the Study of the Fine Arts.** W. (5) **Cory, Lutey.**
The appreciation of masterpieces of architecture, painting, sculpture, poetry, and music; a study of the problems common to them; the philosophy of art; the relations of beauty and truth and morality. Upper division students may obtain upper division credit on the basis of extra reading and conferences.
- 214, 215, 216. **Realism in Philosophy, Literature and the Arts.** A, W, S. (2 to 8 each quarter) **Cory.**

LIBRARIANSHIP

Professors Worden, C. W. Smith, Beardsley; Associate Professor Alfonso; Assistant Professor Andrews; Lecturer J. S. Richards; Reviser Edwards.

- ‡170. **Introduction to Children's Work.** A, W. (3) **Andrews.**
A basic course.
- §172. **Introduction to Library Work.** A. (2) **Worden.**
Library organization, problems of different types of libraries, and current library topics.
- ‡175. **Classification, Cataloging, Subject Headings.** A, S. (4) **Alfonso.**
- ‡184. **Classification, Cataloging, Subject Headings.** W. (3) **Alfonso.**
- §191. **Classification, Cataloging, Subject Headings.** S. (3 or 5) **Alfonso.**
- ‡177. **Bibliography and Reference.** A, S. (3) **Smith, Alfonso.**
Includes trade bibliographies and government documents.
- §185. **Bibliography and Reference.** W. (3 or 4) **Smith, Alfonso.**
Continuation of 177.
- §194. **Bibliography and Reference.** S. (2 or 4) **Smith, Alfonso.**
Continuation of 185.
- §178. **History of the Book.** W. (3) **Richards.**
- §179, §188, §196. **Books for Libraries.** A, W, S. (4, 2 or 3, 3) **Worden.**
Study of the book field, and the problems of selecting books.
180. **Story Telling.** A, §S. (3) **Andrews.**
Study of folk and fairy tales, myths, epics, and short stories as source material for story telling. Open to juniors and seniors in autumn.
- §181. **Advanced Children's Work.** W. (2) **Andrews.**
Organization of a children's department; problems of book buying and administration. Pr., 170.
- ‡182. **School Library Administration.** A, W, S. (3) **Andrews.**

‡ Open to seniors and graduates who wish to qualify for teacher-librarian positions in high schools.

§ Open only to students registered in the school.

- §183. Selection of Books for Children. W. (3) Pr., 170. Andrews.
- §186. Practice. S. (5) Worden.
Four weeks (40 hours a week) of practice work under expert supervision in neighboring Northwest libraries.
- §189. Organization and Administration of Small Libraries. W. (2) Worden.
- §190. Selection of Books for Children. S. (3) Pr., 183. Andrews.
- §192. Administration. S. (2) Worden.
Problems of library management, buildings, equipment, finance, publicity.
- †195. Book Selection for High School Libraries. A,W,S. (3) Andrews.
- §240. Advanced Legal Bibliography. A. (4) Beardsley.
Bibliographical data and use of federal and state law reports and statutes; quasi-legal and commissioners' reports of the states, for association records, legal periodicals, indexes and digests, legal regional bibliographies, cooperative bibliographies of law collections.
- §241. Order and Accessioning of Law Books. A. (5) Beardsley.
Study of aids to law book selection, ordering and accessioning of law books, processing, micro-photography of legal material, etc.
- §242. Legal Reference and Research. W. (5) Beardsley.
Study of bibliographical lists, law reference questions, briefing, annotations, local legal history.
- §243. Law Library Administration. S. (5) Beardsley.
Staff problems, patrons and public relations, circulation problems and procedure, law library architecture and planning, book arrangements, equipment, rules, publicity, publications, budgets, reports, professional societies, regional service, cooperative buying.

Second-Year Library Work with Children

(Not offered in 1940-1941)

- *201, 202, 203. Children's Literature.
- *204, 205, 206. Administration of Children's Libraries.
- *207, 208, 209. Traditional Literature.
- *210, 211, 212. School Work.
- *213, 214, 215. Field Work. (Not required of students with library experience.)

MATHEMATICS

Professors Carpenter, Ballantine, Gavett, Moritz, Winger; Associate Professors Cramlet, Jerbert, McFarlan; Assistant Professors Jacobsen, Mullemeister, Neikirk, Taub; Acting Assistant Professor Birnbaum; Instructors Beaumont, Haller, Zuckerman; Associate Kingston.

1. Advanced Algebra. A,W,S. (5) Staff.
Algebra from quadratics on. Pr., one year high school algebra.
2. Solid Geometry. A,W,S. (5) Staff.
Pr., one year of plane geometry.
3. Survey of Mathematics. S. (5) Staff.
Introduction to mathematical thought and procedure. Elementary processes and their applications. Not for majors. Pr., one year algebra and one year plane geometry.
4. Plane Trigonometry. A,W,S. (5) Staff.
Primarily for students in the College of Arts and Sciences. Pr., one and one-half years algebra and one year plane geometry.

*Not offered in 1940-1941.

§Open only to students registered in the school.

†Open to seniors and graduates who wish to qualify for teacher-librarian positions in high schools.

5. **College Algebra.** A,W. (5) Staff.
Primarily for students in the College of Arts and Sciences. Pr., Math. 1 or one and one-half years high school algebra.
6. **Analytic Geometry.** W, S. (5) Staff.
Primarily for students in the College of Arts and Sciences. Pr., 4.
11. **Theory of Investment.** A,W,S. (5) Staff.
Interest, annuities, amortization, capitalization and depreciation, sinking funds, etc. Pr., one year algebra.
12. **Mathematics of Finance and Insurance.** W, S. (5) Staff.
Pr., 11.
13. **Elements of Statistical Method.** A,W,S. (5) Birnbaum.
Pr., one year algebra, one year plane geometry.
21. **Mathematics for Foresters.** A,W. (5) Staff.
Pr., one and one-half years algebra, one year plane geometry.
- 31, 32, 33. **Engineering Freshman Mathematics.** A,W,S. (5, 5, 5) Staff.
Pr., one and one-half years algebra, one year plane geometry; each course prerequisite to the following course.
- 41, 42, 43. **Engineering Calculus.** A,W,S. (3, 3, 3) Staff.
Pr., 33 for 41; 41 and solid geometry for 42; 42 for 43.
- 54, 55, 56. **Mathematics for Architects.** A,W,S. (3, 3, 3) Jerbert.
Pr., one and one-half years algebra, one year plane geometry; each course prerequisite to the following course.
- *101. **Advanced Trigonometry.**
- 102, 103, 104. **Advanced Analytic Geometry.** A,W,S. (2, 2, 2) Carpenter.
Poles and polars, the general conic, abridged notation, planes, lines and surfaces in three dimensions. Pr., 6 for 102, 2 and 102 for 103, 103 for 104.
- 107, 108, 109. **Calculus.** A,W,S. (5, 5, 5) Staff.
Differential and integral. Pr., 6; each course prerequisite to the following course.
- *111, 112. **Introduction to Actuarial Science.**
- *113. **Mathematical Statistics.**
- 114, 115, 116. **Ordinary and Partial Differential Equations.** A,W,S. (3, 3, 2) Carpenter.
Pr., 109 or 42; each course prerequisite to the following course.
- 117, 118, 119. **Projective Geometry.** A,W,S. (3, 3, 3) Winger.
For teachers and professional mathematicians. Pr., calculus, unless taken concurrently.
- *121, 122, 123. **Theory of Equations.**
- *124, 125, 126. **Algebraic Curves.**
- 127, 128, 129. **Elementary Theory of Numbers.** A,W,S. (2, 2, 2) Zuckerman.
Divisibility properties, congruences, quadratic residues, and related topics. Pr., 109.
- *131. **Selected Topics in Mathematics.**
- 141, 142, 143. **Calculus of Probabilities and Statistics.** A,W,S. (3, 3, 3) Birnbaum.
Presentation of the theory of probabilities from its elementary concepts up to applications to statistics and actuarial science. Pr., 109 or permission, each course prerequisite to the following course.
- 150, 151. **Advanced Analysis.** W, S. (2, 3) Haller.
Selected topics in advanced differential calculus. Pr., 109 or 114; 150 pr. to 151.
- *164, 165, 166. **Partial Differential Equations of Mathematical Physics.**
- Teachers' Course in Mathematics.** (See Educ. 75Q.)

*Not offered in 1940-1941.

Courses for Graduates Only

All courses numbered above 200 require a full year's work in differential and integral calculus as a prerequisite, and the consent of the instructor in charge.

*201, 202, 203. Projective Differential Geometry.

*204, 205, 206. Modern Algebra.

207. Topology. A. (3) Ballantine.
From the point of view of point set theory.

208. Topology. W. (3) Ballantine.
From the combinatorial approach.

*209. Finite Differences.

214, 215, 216. Higher Calculus. A,W,S. (3, 3, 3) Moritz.
Two lectures and one seminar period per week, with readings from Wilson's and Goursat's treatises in the calculus.

*217, 218, 219. Finite Collineation Groups.

*224, 225, 226. Functions of a Real Variable.

*227, 228, 229. Theory of Numbers.

*234, 235, 236. Analytical Dynamics.

237, 238, 239. Invariant Theory. A,W,S. (3, 3, 3) Cramlet.
Text: Weyl, The Classical Groups, their invariants and representations. Pr., Higher Algebra.

241, 242, 243. Functions of Complex Variables. A,W,S. (2, 2, 2) Jerbort.
Analytic functions, conformal representation, definite integrals with imaginary limits, periods of definite integrals, doubly periodic functions, analytic extension, and other topics. Pr., 116.

*244, 245, 246. Calculus of Variations.

*247, 248, 249. Metric Differential Geometry.

*251, 252, 253. Harmonic Analysis.

*254, 255, 256. Riemannian Geometry.

257, 258, 259. Theory of Relativity. A,W,S. (3, 3, 3) Taub.
Special and general theories of relativity, with lectures based on Tolman's text.

261, 262, 263. Integral Equations. A,W,S. (2, 2, 2) McFarlan.
Theories of Fredholm and Hilbert-Schmidt, with applications. Boundary value problems.

*264, 265, 266. Continuous Groups.

*267, 268, 269. Orthogonal Functions.

*271, 272, 273. Advanced Differential Equations.

*274, 275, 276. Advanced Projective Differential Geometry.

*Not offered in 1940-1941.

MECHANICAL ENGINEERING

Professors Eastwood, McMinn, Schaller, Wilson, Winslow; Associate Professors Edmonds, McIntyre, Tymstra; Instructors Crain, Sullivan; Associate Snyder.

53. **Manufacturing Methods.** A,W,S. (1, 1, 1) Schaller
Principles of the founding of ferrous metals.
54. **Manufacturing Methods.** A,W,S. (1, 1, 1) Schaller, Sullivan.
Arc and oxy-acetylene welding, flame cutting, heat treating.
55. **Manufacturing Methods.** A,W,S. (1, 1, 1) Sullivan, Schaller.
Fundamental theory and practice of machining operations on metal.
81. **Mechanism.** A,W,S. (3, 3, 3) McIntyre, Edmonds, Tymstra, Crain.
Operation of machines involving the transmission of forces and the production of determinate motions. Pr., G.E. 3, Math. 32.
82. **Steam Engineering.** A,W,S. (3, 3, 3) Eastwood, McMinn, Edmonds, Tymstra, Crain.
Various apparatus used in modern steam plants. Not open to freshmen. Pr., G.E. 2.
83. **Steam Engineering Laboratory.** A,W,S. (3, 3, 3) Wilson, McIntyre, Edmonds.
Calibrations of instruments; horse-power tests; complete engine and boiler test. Preceded or accompanied by 82.
104. **Manufacturing Methods.** W,S. (1) Schaller.
Founding, welding, and machining of non-ferrous metals. Pr., 53, 54, 55.
105. **Advanced Manufacturing Methods.** (1) A. Sullivan
Individual problems of machine tooling. Pr., 53, 54, 55.
106. **Advanced Manufacturing Methods.** W. (1) Sullivan.
Study of machining problems from the standpoint of production. Pr., 105.
107. **Production Planning.** S. (1) Schaller.
Design and equipment of a representative manufacturing plant. Pr., 106.
108. **Production Management.** A,S. (3) Schaller.
Study of location, operation, and organization of manufacturing plants.
109. **Factory Cost Analysis.** W. (3) Schaller.
Analyzing shop operations from the standpoint of manufacturing costs.
110. **Heating and Ventilation.** S. (2) Eastwood.
Abridged for architecture students. Pr., junior standing in architecture.
- 111, 112. **Machine Design.** A,W,S. (3, 3) McMinn, McIntyre, Edmonds, Tymstra, Crain.
Design of machine details. Pr., C.E. 92.
- 113, 114. **Machine Design.** A,W. (2,2) Winslow.
Advanced problems in machine design. Pr., 112.
- *115. **Steam Engine Design.**
- 123, 124. **Engines and Boilers.** A,W. (2, 3) Winslow.
Analysis of power, speed regulation and forces in various types of engines. Steam boiler designs and specifications. Pr., 83; C.E. 91.
- *140. **Time Study and Job Analysis.**
- 151, 152, 153. **Experimental Engineering.** A,W,S. (3,3,3) Wilson, McIntyre, Edmonds.
Continuation of 83, involving more extended and complete investigations. Pr., 83.
167. **Engineering Materials.** A,W,S. (3) McMinn.
Properties of the various materials used in engineering construction. Recitation and laboratory. Pr., C.E. 92.

*Not offered in 1940-1941.

182. **Heating and Ventilation.** W. (3) Eastwood.
Various systems of heating and ventilating methods with designs. Pr., 82, junior standing in engineering.
183. **Thermodynamics and Refrigeration.** A, S. (5) Eastwood.
Principles underlying transformation of heat into work. Special application to engineering. Pr., 82, junior standing in engineering.
184. **Power Plants.** S. (5) Winslow.
Design of steam power plants, involving their location, building, prime movers, and power transmission. Pr., 83, 123.
185. **Naval Architecture.** S. (3) Rowlands.
Theory of naval architecture. Displacement; stability; strength; construction. Pr., junior standing.
- 191, 192, 193. **Research.** A, W, S. (2 to 5 each quarter.) Staff.
195. **Thesis.** A, W, S. (2 to 5 each quarter.) Wilson.
Investigation, design, or experiment, under direction of the professor in charge. To be taken in the senior year.
198. **Gas Engineering.** A, W, S. (3, 3, 3) Wilson.
Development of gas engineering; stationary, marine, automobile, and airplane motors, and gas-producer plants. Pr., 82, junior standing in engineering.
199. **Gas Engine Design.** S. (3) Wilson.
Calculations and plans for the design of a given type of motor. Pr., 198.

Courses for Graduates Only

200. **Vibrations of Machinery.** A. (3) Winslow.
Mathematical investigations of vibration phenomena, emphasis on applications to operating conditions of machines. Elective for approved seniors, graduates.
- 211, 212, 213. **Research.** A, W, S. (3, 3, 3) Staff.

MILITARY SCIENCE AND TACTICS

Lieutenant Colonel Richards, Lieutenant Colonel Quesenberry, Lieutenant Colonel Pierce; Major Parker, Major Owens, Major Ames, Major Spoerry, Major Wilson; Captain Ramsey; Staff Sergeants Hogwood, Collins, Hoffman; Sergeants Moore, Chandler, Kimbrough, Whitchurch, Roberts, Gage, Freeman, Dragneff, Harrison.

The instruction for the first two years, together with that provided for the third and fourth years, constitutes the courses prescribed by the War Department for institutional units of the Reserve Officers' Training Corps. The advanced courses, those of the third and fourth years, are open to students who have completed the first two years (basic course) of instruction and training.

First Year

- 1, 2, 3. **Basic Infantry.** A, W, S. (2, 2, 2)
Leadership, orientation (National Defense Act, obligations of citizenship, military history, and policy); military discipline and courtesy; military sanitation and first aid; military and infantry organization; weapons (the rifle, and rifle marksmanship, automatic rifle); combat training (scouting and patrolling, musketry). Two recitations and one lab. period a week.
- 4, 5, 6. **Basic Coast Artillery.** A, W, S. (2, 2, 2)
Leadership; military fundamentals (National Defense Act, obligations of citizenship, military history and policy); military and coast artillery organization; military discipline and courtesy; military sanitation and first aid; map reading; rifle marksmanship; coast artillery instruction (ammunition, weapons and materiel, rigging). Two recitations and one lab. period a week.
- 11, 12, 13. **Band.** A, W, S. (2, 2, 2) Welke.

Second Year**51, 52, 53. Basic Infantry. A,W,S. (2, 2, 2)**

Leadership; map reading, military fundamentals (organization, military history, and current events); weapons (machine guns and characteristics of supporting weapons); combat training (combat principles of rifle squad and section, attack, defense, and security). Two recitations and one lab. period a week.

61, 62, 63. Basic Coast Artillery. A,W,S. (2, 2, 2)

Leadership, coast artillery instruction (weapons and materiel, fire control instruments for seacoast artillery, basic gunnery for anti-aircraft, identification of aircraft, characteristics of naval targets). Two recitations and one lab. period a week.

81, 82, 83. Band. A,W,S. (2, 2, 2)

Pr., 13.

Third Year**104. Advanced Infantry. A,W,S. (3)**

Leadership; map and aerial photograph reading; care and operation of motor vehicles; administration; weapons, combat training (estimate of the situation and combat orders); defense against chemical warfare. Five hours a week.

105. Advanced Infantry. A,W,S. (3)

Leadership; weapons (machine guns, howitzer company weapons, rifle and pistol marksmanship); combat training (field fortifications, combat principles of the rifle platoon, machine gun platoon and howitzer company squad, review of rifle squad and section). Five hours a week.

106. Advanced Infantry. A,W,S. (3)

Leadership; weapons (machine guns, howitzer company weapons, rifle and pistol marksmanship); characteristics of infantry supporting weapons, rifle and hand grenades). Five hours a week.

114. Advanced Coast Artillery. A,W,S. (3)

Leadership; administration; coast artillery instruction (fire control and position finding for seacoast artillery, gunnery for seacoast artillery). Five hours a week.

115. Advanced Coast Artillery. A,W,S. (3)

Leadership; coast artillery instruction (gunnery for anti-aircraft artillery). Five hours a week.

116. Advanced Coast Artillery. A,W,S. (3)

Leadership; coast artillery instruction (signal communications, orientation); rifle and pistol marksmanship. Five hours a week.

130. Advanced Camp. (Su.) (3)

Required practical training to supplement the theoretical and practical courses taken in the military department by advanced students of the R.O.T.C. Six weeks in summer, following the first year of the advanced course.

Fourth Year**154. Advanced Infantry. A,W,S. (3)**

Leadership; military fundamentals (military history and policy, military law, Officers' Reserve Corps regulations). Five hours a week.

155. Advanced Infantry. A,W,S. (3)

Leadership; combat training (review of 1st year advanced offensive and defensive combat and combat orders, combat principles of the rifle company, combat intelligence, infantry signal communication); property and funds. Five hours a week.

156. Advanced Infantry. A,W,S. (3)

Leadership; weapons (tanks, mechanization); combat training (combat principles of rifle and machine-gun company and howitzer company platoon, anti-aircraft defense). Five hours a week.

164. **Advanced Coast Artillery. A,W, S. (3)**
Leadership; military history and policy; military law and administration; mechanization; defense against chemical warfare; coast artillery instruction (combat orders). Five hours a week.
165. **Advanced Coast Artillery. A,W, S. (3)**
Leadership; coast artillery instruction (artillery technique and tactics, field fortifications). Five hours a week.
166. **Advanced Coast Artillery. A,W, S. (3)**
Leadership; artillery technique and tactics; coast artillery motor transportation; aerial photograph reading; administration; property and funds; duties of Reserve Officers. Five hours a week.

MINING, METALLURGICAL AND CERAMIC ENGINEERING

Professors Roberts, Daniels; Associate Professor Corey; Assistant Professor Zwermann; Instructor Keith; Associate Wick.

Mining Engineering

51. **Elements of Mining. A. (3)** Daniels.
Principles of mining, including prospecting, boring, drilling, explosives, rock breaking. Three recitations. Pr., G.E. 1, 2, or sophomore standing.
52. **Methods of Mining. W. (3)** Daniels.
Continuation of 51. Methods of working metal, coal, and placer mines, non-metallic deposits. Two recitations and one lab. period. Pr., 51.
101. **Milling. A. (3)** Roberts, Wick.
Preliminary course in the principles and practice of mineral dressing. Two recitations and one lab. period. Pr., junior engineering standing.
103. **Mine Rescue Training. W. (1)** Daniels.
Practice in the use of oxygen rescue apparatus, instruction in first-aid; instruction during first four weeks of quarter. Physical examination required.
106. **Mine Excursion. S. (1)** Staff.
Five-day trip in spring of junior year to a neighboring mining region; detailed inspection of mines. Expense approximately \$25.
107. **Mine Excursion. S. (1)** Staff.
Five-day trip in spring of senior year, similar to 106.
122. **Coal Mining Methods. W. (3)** Daniels.
Special methods involved in prospecting, development, and operation of coal and stratified deposits. Three recitations. Pr., 51, 52.
151. **Mining Engineering. S. (4)** Roberts, Wick.
Principles and practice as exemplified by typical mines. Laboratory studies of air compressors, drills, etc.; studies at near-by mines. Two recitations, two lab. periods. Pr., senior engineering standing.
152. **Mineral Dressing. A. (4)** Roberts, Wick.
The principal branches of mineral dressing, with laboratory practice in complete mill tests. Two recitations, two lab. periods. Pr., 101.
162. **Economics of the Mineral Industry. W. (4)** Roberts, Wick.
Mine valuation; costs of plant and operation; financial provisions; mining law. Three recitations, one lab. period. Pr., senior engineering standing.
- *163. **Mine Operation.**
171. **Mine Ventilation. S. (3)** Daniels.
Composition and properties of mine gases; principles of ventilation applied to both coal and metal mines. Three recitations. Pr., 51, 52, 103.

*Not offered in 1940-1941.

176. **Coal Preparation.** S. (5) Daniels.
Methods of preparing coal by dry and wet cleaning processes; control by float-and-sink methods. Examinations of washing plants at local mines. Two recitations, two 4-hour lab. periods. Pr., 101, Met. 103.
182. **Mineral Industry Management.** S. (3) Daniels.
Employment of labor, systems of payment, social and economic aspects of mineral engineering operations. Three recitations. Pr., senior engineering standing, E.B. 3.
- 191, 192, 193, 194. **Thesis.** A,W,S. (†) Staff.
Preparation of graduation thesis in mining, metallurgical, or ceramic engineering. Completed thesis due three weeks before graduation. Pr., senior standing. Minimum of five credits required.

Courses for Graduates Only

- 201, 202, 203. **Seminar.** A,W,S. (1, 1, 1) Staff.
Lectures and discussions by Bureau of Mines staff, mining engineering faculty and fellows. Required of fellowship holders in the College of Mines. Pr., graduate standing.
- 211, 212, 213, 214. **Graduate Thesis.** A,W,S. (†) Staff.
Preparation of thesis in mining, metallurgical, or ceramic engineering. Finished thesis due one month before graduation. Total of nine credits allowed for thesis.
- 221, 222, 223. **Metal Mining.** † (†) Roberts.
Studies in metal mining. Pr., graduate standing.
- 231, 232, 233. **Mineral Dressing.** † (†) Roberts.
Studies in ore dressing. Pr., graduate standing.
- 251, 252, 253. **Coal Mining.** † (†) Daniels.
Studies in coal mining or in the preparation of coal. Pr., graduate standing.
- 261, 262, 263. **Fuels and Combustion.** † (†) Daniels.
Fuels, their utilization and combustion. Pr., graduate standing.
271. **Cooperative Research with U. S. Bureau of Mines.** A. (6) Staff.
Investigations by holders of cooperative fellowships in College of Mines and Northwest Experiment Station.

Metallurgical Engineering

53. **Elements of Metallurgy.** S. (3) Corey.
Properties of metals and alloys, fuels, refractory materials, furnaces, the extraction of the common metals from their ores. Open to all engineering students with sophomore standing. Three recitations. Pr., Chem. 23.
101. **Fire Assaying.** A. (3) Corey, Wick.
Testing of reagents, crushing, sampling, and assaying of ores, furnace and mill products. One recitation, two lab. periods. Pr., Chem. 111.
102. **Metallurgical Laboratory.** S. (2) Corey, Wick.
Experiments illustrating metallurgical principles. One 4-hour lab. period. Pr., 53.
103. **Fuel Technology.** W. (4) Daniels, Corey.
Primary and manufactured fuels; source, composition, methods of utilization, and economy. Laboratory work in analysis of fuels. Three recitations, one lab. period. Pr., junior standing.
104. **Non-ferrous Metallurgy.** A. (3) Corey.
Metallurgy of copper, lead, zinc, gold, and silver, especially the methods of utilization, and economy. Three recitations. Pr., Met. 53.
153. **Wet Assaying.** W,S. Corey.
Methods for the determination of elements in ores and furnace products. One recitation, two lab. periods. Pr., Chem. 109, 110, or 111.

†To be arranged.

155. **Iron and Steel.** A. (3) Daniels.
Metallurgy and manufacture of iron and steel; their properties and uses in engineering work. Three recitations. Pr., junior engineering standing.
160. **Metallurgical Analysis.** S. (2) Corey.
Technical methods of analysis of slags, industrial products and (for ceramics and geology students) clays and rocks. Two lab. periods. Pr., 153.
162. **Physical Metallurgy.** A. (3) Corey.
The constitution of metals and alloys and their relations to the physical and mechanical properties of the metal. Open to all upperclass engineering students. Three recitations.
163. **Metallography.** W. (3) Corey, Wick.
Preparation, photomicrography, study of metal sections. One recitation, two lab. periods. Open to all senior engineering students.
165. **Metallurgical Calculations.** W. (3) Corey.
Physical chemistry of the metallurgist, slag calculations, furnace problems. Three recitations. Pr., 104.
166. **Advanced Non-ferrous Metallurgy.** S. (3) Corey.
Study of methods and practice in the extraction of the minor non-ferrous metals. Pr., senior mines or graduate standing.

Courses for Graduates Only

- 221, 222, 223. **Advanced Metallurgy.** † (†) Corey.
Studies in metallurgy. Pr., graduate standing.

Ceramic Engineering

90. **Industrial Minerals.** A,W,S. (3) Zwermann.
Beginning study of non-metallic minerals and their products. Three recitations. Pr., sophomore standing in mines, engineering, or science.
100. **Plasticity, Suspensions, and Drying.** A. (3) Zwermann.
Physical characteristics of ceramic materials in the plastic condition and as slip-suspensions. Three recitations. Pr., 90.
101. **Firing.** W. (3) Zwermann.
Effect of heat on ceramic materials; vitrification of clay; melting, fusion, crystallization of silicates. Three recitations. Pr., 100.
102. **Ceramic Decoration.** S. (3 to 6) Keith.
Value of decoration in ceramics; study of ceramic colors, surface textures, glazes. Three recitations. Pr., 101.
104. **Calculations for Bodies and Glazes.** A. (3) Keith.
Physics and chemistry of preparing, drying, firing, and testing ceramic materials and glazes. Three recitations. Pr., junior standing in mines or engineering.
105. **Calculations for Drying and Firing.** W. (3) Keith.
Problems in the physics and chemistry of drying and firing. Three recitations. Pr., junior standing in mines or engineering.
110. **Ceramic Physical-Chemical Measurements.** S. (2) Keith.
Testing of clays and other ceramic materials. One recitation, two lab. periods. Pr., junior standing in mines or engineering.
- 121, 122, 123. **Ceramic Products Laboratory.** A,W,S. (5, 5, 5) Keith.
Laboratory problems in preparing raw materials; manufacture and testing of ceramic and non-metallic products. Two recitations, three lab. periods. Pr., 90 to 110.
- 131, 132, 133. **General Ceramics.** A,W,S. (2 to 5 each quarter.) Keith.
Industrial and craft methods of manufacturing ceramic products, mainly architectural terra cotta and pottery; decorative processes; glaze studies. One recitation, two lab. periods. No prerequisites.

†To be arranged.

- 161, 162, 163. Glazes, Enamels and Colors. A,W, S. (†) Keith.
Laboratory problems in the application of ceramic colors, glazes, and enamels. Consent of instructor required.

Courses for Graduates Only

- 221, 222, 223. Ceramic Research. † (†) Zwermann.
Studies of the ceramic resources of the Pacific Northwest or in the development of new products or processes. Pr., graduate standing.

MUSIC

Professors Wood, Rosen, Venino, Werner; Associate Professors Jacobson, Lawrence, McKay, Munro, Normann, Van Ogle; Assistant Professors Groth, Hall, Irvine, Kirchner, Welke, Wilson, Woodcock; Instructors Bostwick, Eichinger; Associates Beck, Graf, Horsfall, McCreery, Oliver, Pauly, Phillips, Smith, Tustin.

The following courses are recommended as electives for students not majoring in music: (Such students should consult the music registration adviser before registering.) Music 14, 15, 16, 21, 22, 23, 24, 46, 51, 72, 73, 74, 104, 105, 106, 127, 128, 151, 152, 153, 190, 191, 192, and courses in vocal or instrumental study and ensemble.

- 1AX, 2AX, 3AX. Elementary Piano. A,W, S. (2, 2, 2) Bostwick.
Group instruction. For music students not majoring in piano. Fee, \$10.†

- 1CX, 2CX, 3CX. Elementary Voice. A,W, S. (2, 2, 2) Wilson.
Group instruction. For music students not majoring in voice. Fee, \$10.†

- 1FX, 2FX, 3FX. Elementary Woodwind. A,W, S. (2, 2, 2)
Horsfall, Tustin, Phillips, Pauly.
Group instruction. Fee, \$10.†

- 7AX, 8AX, 9AX. Elementary Piano. A,W, S. (2,2,2) Bostwick.
Group instruction, second year. Fee, \$10.†

- 7CX, 8CX, 9CX. Elementary Voice. A,W, S. (2, 2, 2) Wilson.
Group instruction, second year. Fee, \$10.†

- 10-11-12. University Chorus. A,W, S. (1-1-1) Lawrence.
Mixed voices. Pr., some choral experience, ability to read music at sight.

14. Fundamentals I. A. (3) Groth in charge.
Laboratory work in hearing and reading music; transposition; melody writing. No credit to music majors.

15. Fundamentals II. A,W, S. (3) Groth in charge.
Pr., 14 or exemption.

16. Fundamentals III. A,W, S. (2) Groth in charge.
To be taken with 46. Pr., 15 or exemption.

- 18, 19, 20. Vocal or Instrumental Music. A,W, S. (2 or 3 each quarter.) Staff.
Majors in vocal or instrumental music may not receive credit for 18, 19, 20, except in a different branch.

Register for one-hour class in interpretation and repertory and for one or two individual half-hour lessons per week. The course numbers indicate successive grades of advancement, and any number may be used in any quarter. A student who has registered for two credits may register under the same course number for one additional credit. Fee, \$25 or \$50.† The various branches of vocal and instrumental music are designated by capital letters immediately following the course number:

- A. Piano. Venino, Jacobson, Van Ogle, McCreery.
- B. Violin. Rosen, Oliver.
- C. Voice. Werner, Lawrence.
- D. Violoncello. Kirchner, Smith.
- E. Organ. Eichinger.
- F. Woodwind: Horsfall, flute, Pauly, bassoon; Phillips, clarinet; Tustin, oboe.
- G. Harp. Beck, Graf.

†Not governed by refund provisions, page 59, if withdrawal is made after beginning of instruction.

†To be arranged.

21. **Survey of Music.** A,W,S. (5) Woodcock, Irvine.
Illustrated lectures with supplementary readings to provide backgrounds for understanding of common musical forms, idioms, styles.
- 22, 23, 24. **Music Appreciation.** A,W,S. (2, 2, 2) Irvine.
To increase understanding and enjoyment of music. For the general student; no credit to music majors. By special work, upper division students may receive upper division credit.
- 30, 31, 32. **Elementary Band.** A,W,S. (1, 1, 1) Welke.
For underclassmen not registered in Military Band.
- 37, 38, 39. **Piano Ensemble I.** A,W,S. (1, 1, 1) Van Ogle.
Experience in reading symphonic literature arranged for two pianos. Permission required.
40. **Elementary Orchestral Instruments.** A,W,S. (3) Welke.
Fundamental playing principles of each wind instrument. For music majors.
42. **Elementary Orchestral Instruments.** A,W,S. (3) Kirchner.
Fundamental playing principles of each string instrument. For music majors.
43. **Orchestral Literature.** A,W,S. (2) Welke.
Performance and analysis of school orchestra material.
46. **Harmony I.** A,W,S. (2) Staff.
Structure and physical basis of chords. Dominant-tonic relation. To be taken with 16. Pr., 9AX or equivalent.
- 48, 49, 50. **Vocal or Instrumental Music.** A,W,S. (2 or 3 each quarter.) Staff.
First year for vocal or instrumental majors. See description for 18, 19, 20.
51. **Harmony II.** A,W,S. (4) Staff.
All primary harmonies and non-harmonic tones. Pr., 16, 46.
52. **Harmony III.** A,W,S. (3) Groth, Bostwick.
Laboratory course in analysis, keyboard harmony, and ear training. Pr., 51.
53. **Harmony IV.** A,W,S. (5) Eichinger.
Secondary harmonies and simple modulations. Pr., 52 or grade of "A" or "B" in 51.
60. **Advanced Orchestral Instruments.** S. (3) Welke.
Class instruction in woodwind and brass. Pr., 40 or permission.
62. **Advanced Orchestral Instruments.** S. (3) Kirchner.
Pr., 42 or permission.
- 65-66-67. **Choral Ensemble,** A,W,S. (2-2-2) Lawrence, Groth.
Men's and Women's Glee Clubs. Audition required.
- 68, 69, 70. **Vocal or Instrumental Music.** A,W,S. (2 or 3 each quarter.) Staff.
Second year for vocal or instrumental majors. See description for 18, 19, 20.
72. **Introduction to Music Literature and History.** A. (2) Woodcock.
Study of style, general design, historical background of standard concert repertoire with emphasis on current programs. Pr., 15.
- 73, 74. **Music Literature and History.** W,S. (3, 3) Woodcock.
Historical survey of music literature. Pr., 72.
- 80-81-82. **University Choir.** A,W,S. (2-2-2) Lawrence.
Mixed voices. Audition required.
101. **Harmony V.** A,W,S. (5) McKay, Eichinger.
Chromatic harmonies and modulations. Pr., 53.
104. **Music Since 1850.** A. (2) Van Ogle.
Development of the symphonic poem; Berlioz; Liszt; Strauss.
105. **Music Since 1850.** W. (2) Van Ogle.
César Franck; Debussy; Ravel; Satie.
106. **Music Since 1850.** S. (2) Van Ogle.
Modern Spanish and British composers.

109. **Counterpoint.** A,W,S. (5) Wood, McKay, Eichinger.
Regulation of concurrent melodies. Pr., 53.
112. **Musical Forms.** A,S. (5) Wood, Woodcock.
Analysis and exercises in composition. Pr., 53.
113. **Elementary School Music.** A,W. (5) _____.
Application of educational principles to the teaching of music in the first six grades. Pr., 51, 127.
116. **Junior High School Music.** A,W. (3) Hall.
Contribution of music to the needs of the adolescent. Pr., 113, 136.
117. **Elementary Composition and Arranging.** A,W. (5) McKay.
Original work and arrangements for combinations of voices or instruments. Pr., 101, 109, 112.
- 118, 119, 120. **Vocal or Instrumental Music.** A,W,S. (2 or 3 each quarter) Staff.
Third year for vocal or instrumental majors. See description for 18, 19, 20.
- 122-123. **Madrigal Singers.** W,S. (2-2) Hall.
An organization of selected voices.
- 124, 125, 126. **Chamber Music.** A,W,S. (2, 2, 2) Rosen, Jacobson.
Literature for small instrumental groups both with and without piano.
- 127, 128. **Choral Literature.** A,W,S. (2, 2) Groth, Hall.
A cappella singing with emphasis upon skill in part-singing and interpretation. Pr., 51.
129. **Contemporary Choral Literature.** S. (2) Wilson.
Performance of compositions of recent schools. Pr., 51, 128.
- 130, 131, 132. **University Concert Band.** A,W,S. (2, 2, 2) Welke.
Study and production of more difficult compositions for band. Audition required first week of quarter.
- 133, 134, 135. **University Symphony Orchestra.** A,W,S. (2, 2, 2) Kirchner.
Study and production of more difficult orchestral compositions. Auditions every afternoon, first week of quarter.
136. **Technique of Conducting.** A,W,S. (3) Munro.
Principles of conducting; practical experience in directing choral groups. Pr., 127.
138. **Accompanying.** W,S. (2) Woodcock.
Study of music of different types and periods for piano in combination with voice or instruments. Permission of instructor required.
139. **Piano Ensemble II.** W. (2) Jacobson.
Two-piano literature for advanced pianists. Permission of instructor required.
143. **Orchestration.** S. (5) McKay.
Principles of orchestral composition. Pr., 117.
145. **Church Music Literature.** W. (3) Munro, Wilson.
Critical survey of hymns, anthems, solos, and small ensembles. Pr., 136.
151. **Modern Music.** A. (2) Van Ogle.
Richard Wagner; his theories and use of motives.
152. **Modern Music.** W. (2) Van Ogle.
Balakirev, Borodin, Cui, Moussorgsky, Rimsky-Korsakov.
153. **Modern Music.** S. (2) Van Ogle.
Chaikovsky, Scriabin, Stravinsky.
154. **Senior High School Music.** W,S. (2) Munro.
Analysis of the high school problem in relation to music. Pr., 116.
155. **Music Supervision.** A,S. (3) _____.
Problems related to the organization and supervision of school music. Pr., 154.
157. **Free Composition.** A. (5) McKay.
Writing in the smaller forms for voices and for instruments. Pr., 117.

160. **Song Interpretation.** W. (2) Werner.
A study of the Art Song from the standpoint of interpretation. Permission required.
163. **Advanced Counterpoint.** W. (5) Wood.
Choral prelude, invention, fugue. Analysis and composition. Pr., 109.
- *165-166-167. **Piano Teaching.**
- 168, 169, 170. **Vocal or Instrumental Music.** A,W,S. (2 or 3 each quarter.) Staff.
Fourth year for vocal or instrumental majors. See description for 18, 19, 20.
180. **Orchestral Conducting.** A,W,S. (3) Welke.
Practical experience afforded by combining with 43. Pr., 40, 42, 136.
190. **Bach and His Forerunners.** S. (3) Munro, Irvine.
Detailed study of music literature through performance. Pr., senior standing.
191. **Eighteenth and Nineteenth Century Music.** A. (3) Wilson, Woodcock.
Representative music of these periods through performance. Pr., senior standing.
192. **Contemporary Music.** W. (3) McKay, Munro.
Twentieth century music literature, its idioms and tendencies, through performance. Pr., senior standing.
195. **Choral Conducting.** S. (3) Munro.
Practical experience and analysis of choral compositions. Pr., 136.
197. **Advanced Composition.** S. (2 to 6) McKay.
Original writing in the larger forms. Pr., 157.
198. **Introduction to Musicology.** A. (2) Irvine.
Survey of scope, aims, and methods; training in research procedure. Lectures, reports, and discussions. Permission required.
199. **Senior Recital.** A,W,S. (2) Staff.
Pr., permission of faculty committee.

Courses for Graduates Only

- 201, 202, 203. **Graduate Composition.** † (†) McKay.
- 204, 205, 206. **Research.** † (†) Staff.
Problems in music education or musicology. Pr., one year of approved teaching experience.
- 207, 208, 209. **Thesis.** † (†) Staff.
Original contribution from student's field of research, or acceptable original composition performed before a committee of the faculty.
- 218, 219, 220. **Graduate Vocal or Instrumental Music.** A,W,S. (2 or 3) Staff.
Pr., thirty credits in the same branch of music. See description for 18, 19, 20.

NAVAL SCIENCE AND TACTICS

Captain Barr, Captain Wood, Captain Garrison; Commander Kelly, Lieutenant Commander Menocal, Lieutenant Commander Nelson; Lieutenant Birtwell, Lieutenant Weigle; Chief Yeoman Campbell; Chief Turret Captain Sincere, Chief Turret Captain Hoffman; Chief Radioman Stevenson.

First Year

- 1, 2, 3. **Basic Course—Indoctrination and Seamanship.** A,W,S. (3, 3, 3)
Theory and practice in elements of radio communication, history and traditions of our Navy, military drill under arms, small boats under oars and sail. Winter and spring quarters offer a thorough theoretical and practical course in seamanship, International and Inland Rules of the Road, and the elements of pilotage. Three hours a week plus two hours of drill.

*Not offered in 1940-1941.

†To be arranged.

Second Year

51-52-53. Basic Course—Navigation and Nautical Astronomy ‡. A,W,S. (3-3-3)

Theory and practice in pilotage and ocean navigation. Includes methods of chart construction; variation and deviation of a compass; calculation of a ship's position by dead reckoning, by observation of celestial objects, and by bearings of terrestrial objects, or by any combination of the three. Use of navigational instruments. Compensation of the compass. Calculation of tides and currents. Aerial navigation. Radio and navigation by radio bearings. Three hours a week plus two hours of drill. Pr., advanced algebra and plane trigonometry.

Third Year

101, 102, 103. Advanced Course—Ordnance, Gunnery, Naval Engineering and Electricity. A,W,S. (3, 3, 3)

Offered to Naval R.O.T.C. students only. Theoretical course in ordnance and including interior and exterior ballistics, gunnery, powder, and explosives. Electrical installations in the Navy. Naval machinery. Radio communications. Three hours a week, plus two hours of drill.

110. Advanced Course Cruise. Su. (3)

For Naval R.O.T.C. students only. Required practice cruise, on a vessel of the United States Navy, of about three weeks in the summer, following completion of Nav. Sci. 103. Practical training in general ship's duties at deck and engineering stations, and gunnery practice to supplement theoretical work of the first three years in naval science courses.

Fourth Year

151, 152, 153. Advanced Course. A,W,S. (3, 3, 3)

For Naval R.O.T.C. students only. Leadership, administration, strategy and tactics, naval communications, naval aviation, military law; supplemented by a Moot Court and week-end cruises (voluntary) in a naval vessel. Three hours a week, plus two hours of drill.

Courses Open to General Registration

The following courses in naval science are open to general registration and are offered to all students registered in the University not enrolled in the Naval Reserve Officers' Training Corps.

55-56. Seamanship. W,S. (3-3)

Same as 2 and 3.

61-62-. Sea Navigation. A,W. (3-3-)

Same as 51-52. Pr., advanced algebra and plane trigonometry.

-63. Advanced Sea Navigation and Aerial Navigation. S. (-3)

Same as 53.

NAVAL AVIATION TRAINING

The Navy Department offers to students of junior standing or University graduates a complete course in Naval Aviation. This training is divided into three phases:

- (a) Elimination flight training at the Naval Air Station, Sand Point; four weeks.
- (b) Preliminary and advanced flight training at the Naval Air Station, Pensacola, Florida; one year.
- (c) Active duty as Aviation Reserve Ensign in the Aircraft Squadrons, U. S. Fleet; three years, or seven years if desired.

Enrollment in the Naval R.O.T.C. is not necessary. For particulars, apply to the Professor of Naval Science and Tactics, Good Roads Building.

*Not offered in 1940-1941.

‡See section regarding summer cruises, page 146. The cruises are offered only to those regularly enrolled in the R.O.T.C.

NURSING EDUCATION

Professor Soule; Associate Professor Adams; Assistant Professors Leahy, Olcott, Smith; Instructors Bradshaw, Brandt, Byers, Coffman, Cross, Crumb, Doltz, Forman, George, Johnson, Kent, Mackenzie, Northrop, Scott, Takayoshi; Lecturers Hoedemaker, Hunt, Newsom.

1. **History of Nursing.** A,W,S. (3) Soule.
Informational study of nursing from the earliest times; traditions of nursing as a profession. Survey of the present field of nursing. Open to any woman student in the University.

5. **Home Care of the Sick, and Child Hygiene.** A,S. (3) Mackenzie.
Practical course for women students. Instruction in home nursing procedures, including care of patients ill with common communicable diseases, care of chronics, and infants.

All Courses 50-100 Open Only to Nursing Majors Enrolled in Curriculum "A"

50. **Principles and Practice of Elementary Nursing.** A,S. (5) Byers.
Elementary nursing techniques used in general care of patients. Two lectures and three two-hour laboratory periods.
51. **Methods of Case Study.** A,S. (1) Byers, Olcott.
Principles and practices of advanced nursing in relation to special types of disease. Project and clinical case study practice in classrooms and wards.
52. **Introduction to Hospital Practice.** A,S. (6) Olcott, Byers and dept. heads.
Twelve weeks experience in practical application of principles of hospital organization and economy, and elementary nursing including four weeks practice in supply division—household, drugs, and surgical; four weeks medical or surgical wards; four weeks dietary department.
60. **Principles of Medicine and Nursing in General Medical Disease.** W. (3) George, physicians.
Survey of the fields of medicine, metabolism, and cardiology, with etiology, pathology, symptoms, complications, treatment, prevention, and specialized nursing of each disease. Lecture, demonstrations, clinics. Recording and nomenclature included.
61. **Principles of Medicine and Nursing in Medical Specialties.** A,S. (3) George, physicians.
Including dermatology, syphilology, tuberculosis. Special emphasis on medical aseptic technique, modes of transmission, and methods of prevention and control.
62. **Medical Nursing Practice.** A,W,S. (6) George.
Practical applications of principles of nursing in medical diseases. Twelve weeks experience in medical wards, including weekly clinics, conference, and case studies on each disease.
64. **Principles of Special Therapy.** W. (2) Olcott, department heads.
The use of light, electricity, heat, water, massage, exercise, and occupation as aids in the care or control of disease processes.
65. **Special Therapy Practice.** A,W,S. (6) Olcott, Byers.
Four weeks experience in diet therapy, four weeks in physical therapy, four weeks in laboratory and X-ray.
66. **Principles of Preventive Medicine and Nursing Care in Acute Communicable Disease.** A,S. (2) Brandt, physicians.
Etiology, modes of transmission, general symptomatology, complications, treatment, prevention, specialized nursing.
68. **Acute Communicable Disease Nursing Practice.** A,W,S. (6) Adams, Brandt, department heads.
Twelve weeks experience in practical application of principles of preventive medicine and nursing care of communicable disease; four weeks tuberculosis; four weeks acute communicable and four weeks chronic nursing in visiting nursing and field.
70. **Principles of Surgery and Nursing in General Surgical Diseases.** W. (3) Doltz, surgeons.
Survey of the field of general surgery, with etiology, pathology, symptoms, complications, prevention, and pre-operative and post-operative treatment and nursing care of each type of surgical case. Nomenclature included. Lecture, demonstrations, clinics.

71. **Principles of Surgery and Nursing in Surgical Specialties.** A, S. (3) Doltz, surgical specialists.
Includes gynecology, urology, orthopedics, neurology, and operating room technique.
72. **Surgical Nursing Practice.** A, W, S. (6) Doltz.
Practical application of principles of nursing in surgical diseases. Twelve weeks experience in surgical wards, including weekly clinic, conference and case study of each surgical disease.
73. **Operating Room Practice.** A, W, S. (6) Takayoshi.
Practical application of principles of operating room technique, including twelve weeks experience in operative nursing and anaesthetic care.
75. **Nursing Practice in Clinics and Senior Night Duty.** A, W, S. (6) Cross, department heads.
Six weeks out-patient and emergency nursing practice and six weeks private hospital senior ward practice, day and night. Includes clinics, conferences, and case studies.
76. **Principles of Nursing in Otolaryngology and Ophthalmology.** W. (2) Cross, medical specialists.
Lectures, demonstrations, clinics, dealing with anatomy and physiology of eye, ear, nose, and throat in relation to diseases of these organs, with treatment, prevention, and principles in nursing care.
80. **Principles of Pediatrics and Pediatric Nursing.** A, W. (5) Kent, physicians.
Physical and mental development of normal children, principles of their care and feeding. Clinical presentation of cases illustrating common diseases of infancy and childhood and the appropriate medical and nursing care, together with program of prevention.
82. **Pediatric Nursing Practice.** A, W, S. (6) Kent.
Twelve weeks practical experience in nursing care of infants and children, including practice in formula room, nursery, out-patient, orthopedic, and pediatric wards, weekly ward clinics, conference, and case study.
86. **Principles of Obstetrics and Obstetrical Nursing.** A, S. (5) Forman, obstetrician.
Anatomical and physiological aspects of pregnancy, labor, and the puerperium, care during normal, operative, and complicated labors, nursing care of mother and new-born. Lectures, demonstrations, clinics.
88. **Obstetrical Nursing Practice.** A, W, S. (6) Forman, obstetrician.
Practical application of principles of obstetrical nursing. Twelve weeks experience in nursing care of patients during pre-natal, labor, and post-partum periods, including care of the new-born. Weekly clinics, conference, case study.
90. **Principles of Psychiatry and Psychiatric Nursing.** A, W, S. (5) Bradshaw, Scott, Crumb, psychiatrist.
Lectures, demonstrations, and clinics, dealing with various types of mental diseases, principles of mental hygiene, and nursing care of mentally ill patients.
92. **Psychiatric Nursing Practice.** A, W, S. (6) Bradshaw, Scott, Crumb.
Practical application of principles of psychiatric nursing. Twelve weeks experience in psychiatric wards, out-patient, and commitment clinics; weekly ward clinic, conference, and case study.
100. **Professional Problems in Nursing.** A, S. (2) Smith.
Includes study of nursing organizations, legislation, grading of schools of nursing, and similar topics.
101. **Introduction to Public Health Nursing.** A, W, S. (2) Adams, Soule.
104. **Public Health Administration and Epidemiology.** W. (2) Newsom.
Pr., graduate registered nurse or permission.
110. **Field Work.** A, W, S. (8 to 16) Leahy and Supervisors.
Application of the principles of public health nursing by means of supervised field experience. Pr., 167.

112. **Advanced Field Work.** A,W,S. (12) Leahy and supervisors.
Supervised practice in the special fields of nursing. Two hours conference and thirty hours practice a week. Pr., 110.
113. **Readings in Specialized Fields of Public Health Nursing.** A,W,S. (2) Leahy.
Open only to students registering for, or having had, 112.
150. **Principles of Teaching Nursing and Health.** A,W,S. (5) Mackenzie, Adams.
Applied to school of nursing or the field of public health. Pr., graduate registered nurse.
151. **Administration of Schools of Nursing.** S. (5) Adams.
Deals with organization and equipment. Curriculum and content of courses. Class and ward schedule of instruction and classes.
152. **Supervision of Hospital Departments.** W. (5) Adams.
Organization, equipment, administration.
153. **Hospital Administration in Relation to Nursing Service.** S. (5) Olcott, Adams.
Pr., graduate registered nurse.
154. **Cadet Teaching and Ward Administration in Hospitals.** A,W,S. (10) Olcott, Adams.
Pr., 150, 152, graduate registered nurse.
160. **Methods of Supervision of Public Health Nursing.** S. (3) Soule.
Pr., 167, 168, 110, 150, graduate registered nurse.
165. **Study of Contemporary Literature in Fields of Nursing and Public Health.** S. (2) Mackenzie.
167. **Principles of Public Health Nursing.** A,S. (3) Soule.
Policies and trends in the organization and administration of national, state, and local public health nursing services.
168. **Special Fields of Public Health Nursing.** W. (5) Leahy.
Study of the functions, objectives, and program in the special fields of public health nursing.
169. **Public Health.** A,S. (3) Hunt.
History, development, principles of public health programs including official and non-official agencies with their community relationships. Pr., 167.
171. **Psychiatric Information for Public Health Nurses I.** A. (2) Hoedemaker.
Factors affecting the growth and development of personality from infancy to old age. The interrelationships of the physical, emotional, intellectual, and environmental factors in human behavior and some of the social psychiatric principles involved.
172. **Psychiatric Information for Public Health Nurses II.** W. (2) Hoedemaker.
Causes, diagnosis, and treatment of the mental and nervous disorders and deficiencies with emphasis upon the purposiveness of behavior and interaction of organic, emotional, and environmental factors. Pr., 171.
175. **Health Problems in the Family.** W. (3) Mackenzie.
Application of health knowledge to the family in the home, bringing out relationships with the community health program, private physician, official agencies.

*Courses for Graduates Only****200. Seminar.**

- 201, 202, 203. **Problems.** A,W,S. (†) Soule, Adams, Leahy.
Pr., graduate registered nurse, thirty credits in nursing.
205. **Research in Nursing Education, Hospital Administration, Public Health Nursing.** A,W,S. (†) Soule, Adams, Leahy.
Pr., 167, 168, 169; Bact. 101, 102, 103, or Nurs. Edu. 150, 151, 152.

*Not offered in 1940-1941.

†To be arranged.

Service Courses for Other Hospitals

6. **Principles and Practice of Elementary Attendant Nursing.** A,W,S. (5) **Crumb.**
Inservice course for men and women attendants resident in approved hospitals. Instruction and practice in elementary nursing procedures and general hygienic care for persons chronically ill or convalescent.
9. **Principles of Psychiatry and Psychiatric Attendant Nursing.** A,W,S. (5) **Crumb and Psychiatrists.**
Lectures, demonstrations, and clinics, dealing with various types of mental diseases, principles of mental hygiene, and attendant care of mentally ill patients.
10. **Psychiatric Attendant Nursing Practice.** A,W,S. (6) **Crumb.**
Practical application of principles of psychiatric attendant nursing. Twelve weeks experience in psychiatric wards, out-patient and commitment clinics; ward clinic, conference, and case study.

Service Courses for Other University Departments

- Phys. Edu. 6. Health Education.** W,S. (2) **Mackenzie.**
Community hygiene. Development of public health program in the community. Two lectures a week.
- Phys. Educ. 10. Health Education.** A,W,S. (5) **McLellan, Mackenzie, Bliss, Westerman.**
Equivalent of P.E. 4, 6, 8.

OCEANOGRAPHIC LABORATORIES

Professors T. G. Thompson, Guberlet, Kincaid, Norris, Rigg, Utterback; Associate Professors Phifer, Robinson; Assistant Professors Church, Ordal.

1. **Survey of Oceanography.** A,W. (5) **Church.**
Origin and extent of the oceans; nature of the sea bottom; cause and effects of currents and tides; animal and plant life in the sea.
101. **General Oceanography.** A,W. (5) **Church.**
Same as 1, but with additional work and readings. Pr., junior standing.
249. **Graduate Seminar.** A,W,S. (†) **Staff.**
Assigned readings and reports dealing with special topics.
250. **Research in Oceanography.** A,W,S. (†) **Staff.**
(1) Special investigations by advanced students; (2) research for the master's degree; (3) research for the doctor's degree. Maximum, forty-five credits.

Courses in Oceanographical Bacteriology.

See Bact. 201.

Courses in Oceanographical Botany.

See Bot. 205, 206, 207, 210, 211.

Courses in Oceanographical Chemistry.

See Chem. 155, 156, 166, 225.

Courses in Oceanographical Physics.

See Phys. 166, 219.

Courses in Oceanographical Zoology.

See Zool. 213, 214, 215.

Special arrangements may be made for conducting research at the laboratories at Friday Harbor throughout the year.

* Not offered in 1940-1941.

† To be arranged.

ORIENTAL STUDIES

Assistant Professor Taylor; Professor Gowen; Assistant Professors Schultheis, Spector, Tatsumi; Associate Maki.

- 1-2, 3. **Japanese Language.** A,W,S. (5-5, 5) Tatsumi.
First-year course. Elements of spoken and written language; grammar, *kana*, characters.
- 7-8, 9. **Russian Language.** A,W,S. (5-5, 5) Spector.
First-year course. Grammar, pronunciation, reading, composition.
10. **Survey, Problems of the Pacific.** A,W,S. (5) Taylor.
Contemporary problems, background, of Pacific Rim countries.
40. **Chinese Civilization.** W. (5) Schultheis.
Social, intellectual, institutional life of the Chinese; emphasis on recent changes.
41. **Japanese Civilization.** A,S. (5) Maki.
Social, intellectual, institutional life of the Japanese; emphasis on recent changes.
- 44-45, 46. **Chinese Language.** A,W,S. (5-5, 5) Schultheis.
First year *Kuo Yu*; grammar, pronunciation, translation, composition.
50. **Literature of India.** A. (5) Gowen.
Indian literature from the Vedas to Tagore. Upper division credit to upper division students.
52. **Literature of Persia.** W. (5) Gowen.
Persian literature from Zoroaster to the present day, including Muhammad and the Qu'ran. Upper division credit to upper division students.
90. **History of China.** A. (5) Schultheis.
Introduction to Chinese history, political, social, intellectual. Upper division credit to upper division students.
91. **History of Japan.** W. (5) Maki.
Introduction to Japanese history, political, social, religious, aesthetic. Upper division credit to upper division students.
- *101-102-103. **Hebrew.**
- *104-105-106. **Sanskrit.**
- 107, 108, 109. **Japanese Language.** A,W,S. (5, 5, 5) Tatsumi.
Intensive second-year course; ideographs, grammar, reading in Japanese literature. Pr. to 107, 3 or equivalent.
110. **Japanese Composition and Conversation.** A. (5) Tatsumi.
Third-year course; advanced composition and conversation. Pr., 109 or equivalent.
111. **Japanese Reading and Translation.** W. (5) Tatsumi.
Third-year course. Pr., 109 or equivalent.
- *114. **History of Religion.**
- Primitive Religion.** See Anthro. 142.
115. **History of Religion.** A. (3) Gowen.
Religions of the Ancient Empires, and religions of the Orient.
116. **History of Religion.** W. (3) Gowen.
Survey of Judaism, Christianity, Muhammadanism.
- *117-118-119. **Arabic or Aramaic.**
- International Relations of the Far East.** (See Pol. Sci. 129.)
- Oriental Political Thought.** (See Pol. Sci. 114.)
- Far Eastern Government and Politics.** (See Pol. Sci. 158.)
- The Middle and Near East.** (See Pol. Sci. 130.)
130. **Russian Literature.** S. (5) Spector.
Great Russian novelists of the Golden Age; post-revolutionary literature.

* Not offered in 1940-1941.

136. **Russian Revolution.** W. (5) Spector.
Background of revolutionary change from 1825 to the present time, with special attention to recent trends and events in the U.S.S.R.
- 140, 141, 142. **Russian Language.** A,W,S. (3, 3, 3) Spector.
Second-year course. Pr. to 140, 9, or equivalent.
- 146, 147, 148. **Chinese Language.** A,W,S. (5, 5, 5) Schultheis.
Second-year course. Pr. to 146, 46 or equivalent.
- 149, 150, 151. **Chinese Language.** A,W,S. (3, 3, 3) Schultheis.
Third-year course. Pr. to 149, 148 or equivalent.
- *152, 153, 154. **Sanskrit.**
- *155, 156, 157. **Hebrew.**
- *158, 159, 160. **Arabic.**
- 162, 163. **Russian Language.** A,W. (3, 3) Spector.
Third-year course. Readings in nineteenth century novel. Pr., 142 or equivalent.
170. **Literature of China in Translation.** A. (5) Maki.
The Chinese classical philosophers; poetry, fiction, drama.
171. **Literature of Japan in Translation.** W,S. (5) Maki, Tatsumi.
Poetry, the novel, the drama.
180. **Modern Chinese History.** W. (5) Taylor.
The nineteenth century and the contemporary period in Chinese history, with major emphasis upon internal affairs. Pr., 90 or upper division standing.
181. **Modern Japanese History.** S. (5) Maki.
Intensive topical treatment of periods in Japanese history; particular attention to modern developments.
190. **West Asia Reading Course.** A. (3) Spector.
Directed reading, covering history and literature of Near East. Pr., instructor's permission.
- *191. **India Reading Course.**
192. **China Reading Course.** S. (3) Schultheis, Taylor.
Directed reading, covering fields of Chinese history, literature, civilization. Pr., instructor's permission.
193. **Japan Reading Course.** S. (3) Tatsumi, Taylor.
Directed reading, covering fields of Japanese history and culture. Pr., instructor's permission.
194. **Russia Reading Course.** A. (3) Spector.
Directed reading, covering fields of Russian history, literature, drama. Pr., instructor's permission.

NOTE: Courses 190, 191, 192, 193, 194 may, with consent of instructor, be repeated for credit.

Courses Primarily for Graduates

- *220. **Seminar in Eastern Asia.**
- *221. **Sources in East Asia.**
222. **Sources in West Asia and India.** W. (2) Gowen.
Introduction to standard primary and secondary sources for study of West Asiatic and Indian history, religion, and literature.
- 225, 226. **Seminar in Far Eastern Diplomacy.** A,W. (3, 3) Taylor.
Special reference to present conflict. Pr., consent of instructor.
- 280, 281, 282. **Research.** A,W,S. (†) Staff.
Research in Oriental and Slavic studies for those qualified. Instructor's permission necessary.
- 290, 291, 292. **Thesis.** A,W,S. (2 to 5 each quarter) Staff.
Directed investigation and writing in connection with work for advanced degrees.

*Not offered in 1940-1941.

†To be arranged.

PHARMACY, PHARMACOGNOSY, PHARMACEUTICAL CHEMISTRY AND TOXICOLOGY, AND PHARMACOLOGY

Professors Goodrich, Johnson, Rising; Associate Professor Dille; Assistant Professors Fischer, Kelly; Instructors Brokaw, Jones, Plein.

Department of General and Practical Pharmacy

- 1, 2, 3. **Theoretical and Manufacturing Pharmacy.** A,W,S. (3, 3, 3) Jones.
Pharmaceutical operations and manufacture of U.S.P. and N.F. preparations. Two lectures, one lab. period a week.
4. **The Profession of Pharmacy.** A. (2) Jones.
Survey of the development of pharmacy as a profession. Two lectures a week.
- 9, 10, 11. **Prescriptions.** A,W,S. (3, 3, 3) Plein, assistants.
Theory and practical application of extemporaneous compounding. One lecture, one quiz, one lab. period a week.
15. **Home Remedies.** A,W,S. (2) Rising.
Study of medicines commonly used in the home. Open to all students.
51. **Elementary Pharmacy.** A, S. (2) Brokaw.
Survey of fundamental knowledge of dispensing which the nurse should have.
- 113, 114, 115. **Advanced Prescriptions.** A,W,S. (5, 5, 5) Rising, assistants.
Problems in dispensing and manufacturing; preparation of diagnostic reagents; study U.S.P. and N.F. Two lectures, one quiz, six hours lab. a week.
173. **Cosmetic Manufacture.** A,W,S. (3 to 5) Rising.
Pr., quantitative and organic chemistry.
183. **New Remedies.** W. (3) Jones.
New and non-official remedies; modern modes of administering medicines.
184. **Pharmacy Laws, Study and Interpretation of the United States Pharmacopoeia and National Formulary.** S. (3) Jones.
188. **Diagnostic Reagents.** A,W,S. (2 to 5) Kelly.
Manufacture and use.
191. **Research Problems.** A,W,S. (1 to 5) Staff.
Open to juniors, seniors, and graduates.

Department of Pharmacognosy

- 12, 13, 14. **Pharmacognosy.** A,W,S. (3, 3, 3) Goodrich, Fischer.
Organic drugs, their source, methods of collection and preservation, identification, active constituents and adulterations. Three lectures a week.
- 104, 105. **Pharmacognosy.** W,S. (3, 3) Goodrich.
Microscopic study of crude and powdered drugs for purposes of identification and for detection of adulteration. One lecture, two lab. periods a week.
106. **Medicinal Plants.** A. (2) Goodrich, Metzger.
Study of cultivated and native medicinal plants of the Northwest. One lecture, one lab. period a week.
112. **Biologicals.** A. (3) Goodrich.
Deals with those animal drugs and biological products used in medicine.
193. **Research Problems.** A,W,S. (1 to 5) Staff.
Open to juniors, seniors, graduates.

Department of Pharmaceutical Chemistry and Toxicology

5. **Gravimetric Quantitative Analysis.** A. (5) Kelly.
Two lectures, one quiz, two 4-hour lab. periods a week.
6. **Volumetric Quantitative Analysis.** W. (5) Kelly.
Two lectures, one quiz, two 4-hour lab. periods a week.
7. **Urinalysis.** S. (2) Kelly.
One lecture, one lab. period a week.
8. **Pharmacopoeial Assay.** S. (2) Kelly.
Assay of drugs by methods in the Pharmacopoeia. One lecture, three hours lab. a week.
192. **Research Problems.** A,W,S. (1 to 5) Staff.
Open to juniors, seniors, and graduates.
- 195, 196, 197. **Pharmaceutical Chemistry and Toxicology.** A,W,S. (5, 5, 5) Fischer.
Pharmacy and chemistry of alkaloids, glucosides, oils, volatile oils, and other plant and animal principles. Also includes the separation and identification of poisons from animal tissue. Two lectures, three lab. periods.

Department of Pharmacology

61. **Pharmacology and Therapeutics.** W. (3) Brokaw.
Source, actions, and uses of drugs. For nursing students at Harborview.
- 101, 102, 103. **Pharmacology and Toxicology.** A,W,S. (3, 3, 3) Dille.
Survey of the action of drugs, their posology and rational uses in therapeutics with consideration of symptoms and treatment of poisoning.
170. **Pharmacology.** A,W,S. (2) Dille.
Source, action, uses of the common drugs. Open to pre-medical students and others interested in a survey of the field of pharmacology.
- *185. **Biological Assays.**
186. **Pharmacology of Anesthetics.** A. (2 to 3) Dille.
Theory, action, and uses of the volatile and fixed anesthetics. Pr., 101, 102, 103. One lecture, one lab. period a week.
187. **Pharmacology of the Autonomic Drugs.** W. (2 to 3) Dille.
Actions and uses of those drugs effective through their action on the automatic system. Pr., 101, 102, 103. One lecture, one lab. a week.
194. **Research Problems.** A,W,S. (1 to 5) Staff.
Open to juniors, seniors, and graduates.
199. **Seminar in Pharmacology.** A,W,S. (1) Dille.
Open to qualified students after conference with instructor. Reports and discussions of current research in pharmacology.

Courses for Graduates Only

201. **Investigation in Practical Pharmacy.** A,W,S. (†) Rising, Jones, Plein.
Maximum of forty-five credits.
202. **Investigation in Pharmacognosy.** A,W,S. (†) Goodrich.
Maximum of forty-five credits.
203. **Investigation of Toxicology.** A,W,S. (†) Johnson, Fischer.
Maximum of forty-five credits.
204. **Investigation in Pharmaceutical Chemistry.** A,W,S. (†) Johnson, Fischer, Kelly.
Maximum of forty-five credits.
205. **Investigation in Pharmacology.** A,W,S. (†) Dille.
Maximum of forty-five credits.
210. **Graduate Seminar.** A,W,S. (no credit) Staff.
Reports on assigned reading under direction of members of the staff. One hour a week.

*Not offered in 1940-1941.

†To be arranged.

PHILOSOPHY

Professor Savery; Associate Professor Nelson; Assistant Professors Phillips, Rader.

1. **Introduction to Philosophy.** A,W,S. (5) Phillips.
Main philosophic problems and typical solutions.
2. **Introduction to Social Ethics.** W. (5) Rader.
Social ideals and problems, with special emphasis upon democracy.
3. **Introduction to Ethics.** S. (5) Rader.
Moral principles and their application to the problems of life.
5. **Introduction to Logic.** A,W,S. (5) Nelson.
Conditions of clear statement, adequate evidence, and valid reasoning, and their establishment in the mental processes of the student.
- 101-102-103. **History of Philosophy.** A,W,S. (3-3-3) Rader.
Ancient, medieval, and modern. Juniors and seniors only.
- 104-105-106. **Metaphysics.** A,W,S. (3-3-3) Savery.
The nature of existence, with special reference to the concepts and principles of science. Pr., 1 and 5, or consent of instructor.
112. **Philosophy of History.** W. (5) Phillips.
Survey and classification of the leading philosophies of history; special attention to the conflicts between idealistic and materialistic, and monistic and pluralistic, theories. An attempt is made to analyze the concepts employed in historical interpretation. Pr., 1.
- *113. **Philosophy of Religion.**
- History of Religion.** (See Oriental Studies 115, 116.)
129. **Esthetics.** A. (5) Rader.
Theories of the nature of art, the nature of beauty, and the various sources of esthetic effect. Juniors and seniors only.
133. **Ethical Theory.** S. (3) Phillips.
Fundamental concepts and principles of ethics. Pr., 2 or 3.
- 141-142-143. **Contemporary Philosophy.** A,W,S. (2-2-2) Nelson.
Modern movements: idealism, intuitionism, positivism, pragmatism, realism, mechanism, and vitalism. Pr., 1 or 101-102-103.
193. **Advanced Logic.** S. (3) Nelson.
Symbolic logic; critical examination of logical doctrines bearing on philosophical questions; inductive method. Pr., 5.
- *194, 195, 196. **Reading Course in Oriental Philosophy.**
- 197, 198, 199. **Reading in Philosophy.** A,W,S. (3, 3, 3) Savery.
Pr., consent of instructor.

Courses for Graduates Only

- 207-208-209. **Seminar in Philosophy of Science.** A,W,S. (4-4-4) Savery.
Advanced study of metaphysics. Pr., consent of instructor.
- 214-215-216. **Seminar in Logic.** A,W,S. (4-4-4) Nelson.
Pr., consent of instructor.
- *234-235-236. **Seminar in Descartes, Spinoza, Leibnitz.**
- 237-238-239. **Seminar in Locke, Berkeley, Hume.** A,W,S. (4-4-4) Rader.
Reading of the major philosophical works, with criticism and interpretation. Pr., consent of instructor.
- *241-242-243. **Seminar in Plato and Aristotle.**
- *244-245-246. **Seminar in Kant.**
- 251, 252, 253. **Research in Philosophy.** A,W,S. (1 to 6 each quarter) Staff.
Pr., consent of instructor.

*Not offered in 1940-1941.

PHYSICAL AND HEALTH EDUCATION

PHYSICAL AND HEALTH EDUCATION FOR MEN

Professor Foster; Associate Professor Belshaw; Assistant Professors Auernheimer, Kunde, Peek, Reeves, Torney; Associates Clark, Edmundson, Egtvet, Graves, Johnson, Phelan, Stevens, Ulbrickson, Wilcox.

1, 2, 3. Adapted Activities. A,W,S. (1, 1, 1) Kunde.

Individual gymnastics, games, and sports. Adapted to meet the needs of the individual.

§6, 7, 8. Physical Education Activities for Majors. A,W,S. (1, 1, 1)

Peek and Staff.

9, 10, 11. Physical Education for Sophomore Majors. A,W,S. (1, 1, 1)

Peek and Staff.

16 to 70. Physical Education Activities. A,W,S. (1 each)

Staff.

Course 16, handball; 17, basketball; 18, tennis; 19, playground ball; 20, golf**; 21, track; 22, crew (class); 23, fencing; 24, boxing; 25, tumbling; 26, apparatus and stunts; 27, wrestling; 28, volley ball; 29, swimming; 30, soccer; 31, touch football; 32, badminton; 33, archery; 51, freshman varsity crew; 52, varsity crew; 53, freshman varsity football; 54, varsity football; 55, freshman varsity track; 56, varsity track; 57, freshman varsity swimming; 58, varsity swimming; 59, freshman varsity basketball; 60, varsity basketball; 61, freshman varsity baseball; 62, varsity baseball; 63, freshman varsity tennis; 64, varsity tennis; 65, varsity golf; 66, Pack Forest; 67, varsity skiing; 68, varsity volleyball; 69, varsity hockey; 70, varsity fencing.

— 15. Personal Health. A,W,S. (2)

Reeves and Staff.

Approaches to healthful living. Laws of hygiene as they apply to the individual problem of adjustment. Health information that affords a basis for intelligent guidance in the formation of health habits and attitudes. Academic credit given.

PHYSICAL AND HEALTH EDUCATION FOR WOMEN

Professor Hutchinson; Associate Professor de Vries; Assistant Professors McGownd, Rulifson; Lecturer Hoedemaker; Instructors MacLean, McLellan, Wilson.

Activity Courses

11, 12, 13. Physical Education Activities for Freshmen Majors. A,W,S.

(2, 2, 2)

Rulifson, de Vries, Wilson, MacLean.

Required of all freshmen major students. Practice in folk and national dancing, clog and tap dancing, hockey, basketball, tennis, soccer, archery, baseball, volley ball, interpretative dancing, swimming.

51, 52, 53. Physical Education Activities for Sophomore Majors. A,W,S.

(2, 2, 2)

Rulifson, Wilson, MacLean, de Vries.

Required of all sophomore major students. Practice in the skills and techniques of soccer, tennis, volley ball, badminton, basketball, folk dancing, tap and clog dancing, swimming, life saving, and contemporary dance.

57 to 98. Physical Education Activities. A,W,S. (1, 1, 1)

Auernheimer,

Rulifson, de Vries, McGownd, Jefferson, McClellan, Wilson, MacLean.

Course 57, fencing; 61, folk and national dancing; 62, clog and tap dancing; 63, advanced clog and tap dancing; 64, hockey; 65, basketball; 67, tennis; 69, advanced tennis; 75, archery; 76, advanced archery; 82, volley ball; 83, indoor baseball; 84, badminton; 85, canoeing; 86, advanced badminton; 87, golf**; 88, advanced golf**; 91, contemporary dancing; 92, advanced contemporary dancing; 94, equestrian†; 95, elementary swimming; 96, intermediate swimming; 97, advanced swimming; 98, diving; 99, life saving.

§These courses satisfy in part the general University requirement in physical education.

**Golf instruction fee (payable to golf club), each quarter: \$3.00.

†Riding instruction fee (payable to riding academy), each quarter: \$12.00.

Health Education Lecture Courses

4. **Health Education.** A,W. (2) **McLellan.**
Personal hygiene. The development of personal and social attitudes in matters of personal and community hygiene. Two lectures a week.
6. **Health Education.** W,S. (2, 2) **Mackenzie.**
Community hygiene. Development of public health program in rural communities and cities. Public health and communicable disease. Two lectures a week.
8. **Health Education.** W, S. (2) **Westerman.**
Nutrition. Food selection in relation to nutritive requirements of various age groups. Two lectures a week.
10. **Health Education.** A,W,S. (5) **McLellan, Westerman, Bliss, Mackenzie.**
Equivalent of 4, 5, 6.

PROFESSIONAL COURSES FOR MEN AND WOMEN

101. **Methods and Materials in Gymnastics, Stunts and Tumbling.** S. (3) **McLellan, Wilson.**
WOMEN. Classification of gymnastic material. Principles and technique of teaching. Pr. or accompanying courses, Anat. 100 and Physiol. 50.
107. **Personal and General Hygiene.** S. (3) **Reeves.**
MEN. Advanced course designed primarily for professional students in physical education. Pr., 15.
109. **The School Dance Program.** W. (2) **Wilson.**
MEN. Practical knowledge of folk dances and tap dance steps to be learned; organization of dance programs for boys in schools and organized recreation centers.
110. **First Aid and Safety.** A. (2 or 3) **Reeves.**
MEN and WOMEN. Emergency treatment for injuries common to the playground, gymnasium, and athletic field. Safety measures for the prevention of injuries. Sec. A for men, three credits; sec. B. for women, two credits.
111. **Rhythmic Activities for Small Children.** A. (2) **Wilson.**
WOMEN. Activities suited to the pre-school, kindergarten, and primary child. Educational value, significance in child development, methods of presentation. Lecture and practice.
112. **Elementary School Athletic Program.** S. (3) **Rulifson.**
WOMEN. Progressive series from the hunting games and elementary forms to the standard athletic activities of late adolescent years.
113. **Principles of Recreation.** A. (3) **Kunde.**
MEN and WOMEN. Principles underlying the organization and conduct of play and recreation; historical background; social and educational significance; a critical analysis of various theories of play; aim, objectives, and scope. Pr., junior standing.
115. **Physiology of Muscular Exercise.** S. (5) **Belshaw.**
MEN and WOMEN. Physiology of muscular exercise as related to physical activities. Study of muscular efficiency, fatigue, recovery, chemical changes, and neuro-muscular control, with special reference to games, sports, corrective work and posture. Pr., Anat. 100, Physiol. 50, or equivalent.
118. **Analysis of Rhythm.** A. (3) **de Vries, Wilson.**
WOMEN. Principles underlying expression in rhythmic activities, including rhythmic form and analysis. Rhythm in relation to the physical education program; principles of building rhythmic patterns to be used in teaching dancing; relation of musical form to dance form. Pr., 12 or 62; 13 or 92.
122. **Kinesiology.** A. (3) **Belshaw.**
MEN and WOMEN. Principles of body mechanics. Analysis of leverage in body movement and problems of readjustment in relation to posture and to physical education activities. Pr., 115, Anat. 100, Physiol. 50.

124. **Activities and Recreational Methods.** W. (3) **Kunde.**
MEN and WOMEN. Activities suitable for various age levels, i.e., handcraft, music, dramatics, nature study, low organized games, free play, social recreation, contests and tournaments, story telling, special features, and camping and outing activities. Pr., 113.
125. **Administration of Play and Recreation.** S. (3) **Kunde.**
MEN and WOMEN. Departmental organization and maintenance. Principles and policies. Pr., 113, 124, 110.
126. **Observation and Practice Teaching.** A,W, (2) **Kunde.**
MEN and WOMEN. Observation of recreational work in Seattle and vicinity. Fifty hours of practice teaching in organized recreation centers. Pr., 125 and six credits in methods courses. Sec. A, for women, winter; sec. B, for men, autumn.
127. **Tests and Measurements.** A. (3) **Belshaw.**
MEN and WOMEN. Place and possibilities of measurement in physical education. Study of statistical method and principles involved in construction of tests. Practical problems assigned for experimental study. Pr., senior standing.
128. **Organization and Administration of Camp Programs.** S. (3) **McLellan.**
WOMEN. Theory and practice in camp organization and administration and in the conduct of camp activities; studies are made of the educational significance of current movements and existing local and national organizations. Pr., 124.
135. **Adapted Activities.** W. (3) **Kunde, ———.**
MEN and WOMEN. Study of atypical cases from the standpoint of selecting and adapting activities to meet individual needs. Observation of actual cases under supervision. Pr., 115, 122, Physiol. 50.
145. **Principles of Health and Physical Education.** A. (5) **Foster.**
MEN and WOMEN. Social, biological, and educational foundations. The place of health and physical education in the school program. Aims, objectives, content, and standards. Pr., Physiol. 50 and junior standing.
150. **The School Physical Education Program.** W,S. (5 or 2) **Foster, Belshaw, Hutchinson.**
MEN and WOMEN. Organization and administration of the physical education program in secondary schools. Pr., 158, 161, 163, or 162, 163, 164. Men, winter, five credits; women, spring, two credits.
153. **Methods and Materials in Health Teaching.** W. (5) **Hutchinson.**
MEN and WOMEN. The place of health education in the school program, the general program of health teaching, subject matter and methods in health teaching in both the elementary and high school. Pr., senior standing and 145.
155. **Dance Composition.** S. (2) **de Vries.**
WOMEN. Practice in modern dance. Analysis of choreography. Opportunity for creative work. Pr., 92, 118.
156. **Methods and Materials in Teaching Dance.** A. (2) **de Vries.**
WOMEN. Selection and organization of materials in educational program; methods of presentation; sources of material; music, and types of accompaniment. Pr., 53 or 92, 118.
157. **Theory and Practice in Dance Accompaniment and Percussion.** S. (2) **de Vries.**
WOMEN. Study of rhythmic structure in relation to percussion instruments. Rhythmic pattern and composition. Studies in types of accompaniment together with practice in their use. Pr., 92 or 53, 118.
158. **Methods in Teaching Apparatus, Tumbling and Stunts.** W. (2) **Auernheimer.**
MEN. Pr., 25, 26, and competence in ten additional physical educational activities.
- 159-160. **Dance Production.** A,W. (2-2) **de Vries.**
WOMEN. Study of and practice in costuming, lighting, staging, for dance concerts and festival programs. Pr., 92 or 53, 118.
161. **Methods in Teaching Boxing and Wrestling.** A. (2) **Kunde, Stevens.**
MEN. Pr., 24, 27, and competence in ten additional physical education activities.

162. **Methods and Materials in Teaching Folk, Tap and Clog Dancing.** S. (2) Wilson.
WOMEN. Pr., 52.
163. **Methods and Materials in Teaching Sports.** S. (2 or 3) Rulifson, Peek, Reeves.
MEN and WOMEN. Sec. A, Women; three credits; winter; pr., 51, 52, 112. Sec. B, men; two credits; spring; pr., competence in twelve physical education activities.
164. **Methods in Teaching Swimming.** S. (3 or 2) MacLean, Torney.
MEN and WOMEN. Methods and techniques in teaching swimming and diving; consideration of life saving; direction of camp waterfront program. Sec. A, women; pr., 53, 85; or 97 and 99 may be substituted for 53; three credits. Sec. B, men; pr., 29; two credits.
165. **The School Health Education Program.** W. (3) Belshaw.
MEN and WOMEN. Schoolroom construction, lighting, heating, ventilation, sanitation of spaces, selection and location of equipment, medical inspection and supervision, communicable disease, the school lunch, fatigue, rest, and play. Pr., junior standing.
170. **Methods in Teaching Football.** S. (2) Phelan.
MEN. Theory and practice of the fundamental principles underlying both individual and team play. Pr. junior standing.
171. **Methods in Teaching Basketball.** W. (2) Edmundson.
MEN. Individual and team development; offensive and defensive play. Pr., junior standing.
172. **Methods in Teaching Track and Field.** A. (2) Edmundson.
MEN. Methods of training for the various events. Correct form in running. Conducting and officiating meets. Pr., junior standing.
173. **Methods in Teaching Baseball.** S. (2) Graves.
MEN. Fundamentals of batting, base-running, and position play; theory and practice. Pr., junior standing.
- Teachers' Course in Physical Education.** (See Educ. 75V.)

For additional courses in Health Education, see School of Home Economics and School of Nursing.

Courses for Graduates Only

201. **Problems in Physical Education.** A. (3) Hutchinson.
MEN and WOMEN. Special problems, including administration of school programs, organization of activities. Problems selected will depend upon personnel of class. Pr., 20 credits in physical education.
203. **Problems in Health Education.** S. (3) Hutchinson.
MEN and WOMEN. Study of the problems relating to the school health education program. Problems selected will depend upon personnel of class. Pr., 145, 153, 165.
204. **Supervision of Physical Education.** W. (3) Hutchinson.
MEN and WOMEN. Problems and technique of the improvement of teaching relating to the in-service education of teachers; visitation and conference; selection and organization of subject matter; standardization of materials of instruction; use of tests and measurements. Pr., 20 credits in physical education and teaching experience.
- *205. **Organization and Administration of Physical Education in Colleges and Universities.**
206. **The Curriculum.** S. (3) Foster.
MEN and WOMEN. Principles underlying the curriculum. Selection and organization of program content in relation to such problems as characteristics and needs of pupils and local conditions. Practical experience in curriculum making. Pr., 20 credits in physical education.

* Not offered in 1940-1941.

PHYSICS

Professors Brakel, Osborn, Utterback; Associate Professors Henderson, Loughridge; Assistant Professors Higgs, Kenworthy, Uehling; Instructor Sander-
man.

Students not in engineering, who do not have a year of high school physics, must elect Physics 4, 5, 6.

- 1, 2. General Physics. A,W. (5, 5) Osborn, Utterback, Sanderman.
These courses will satisfy the science requirement in the College of Arts and Sciences, and may be taken by students in forestry and pharmacy. Pr., one year of high school physics for 1; 1 for 2.
3. General Physics, Heat and Light. S. (5) Osborn, Sanderman.
Required of physics majors, of mathematics majors taking physics as a minor, and pre-med students. Pr., 1.
- 4, 5. General Physics. A,W. (5) Kenworthy.
For students without a year of high school physics. These courses will satisfy the same requirements as 1 and 2. Pr., plane geometry, 4 pr. to 5.
6. General Physics, Heat and Light. S. (5) Kenworthy.
This course will satisfy the same requirement as 3. Pr., 4.
10. Survey of Physics. W. (5) Utterback.
General view of the fundamental principles of physics and their relation to the welfare of man. Students who expect to continue with physics should begin with 1 or 4.
50. Sound and Music. S. (5) Kenworthy.
54. Elementary Photography. A, S. (4) Higgs.
Principles and practice of the elementary photographic processes. Pr., elementary physics or chemistry.
- 89-90. Physics of the Home. A,W. (5-5) Osborn.
For students in home economics and nursing.
97. Physics for Engineers—Mechanics. A,W. (5) Brakel, Uehling.
Pr., one year high school physics, 10 credits college mathematics.
98. Physics for Engineers—Electricity. W, S. (5) Brakel, Loughridge.
Pr., 97.
99. Physics for Engineers—Light and Heat. A, S. (5) Brakel, Henderson.
Pr., 97.
- 101-102. Introduction to Modern Physics. A,W. (3-3) Utterback.
Pr., 3 or 6.
- 105-106. Electricity. A,W. (3-3) Brakel.
Pr., 3 or 6.
- *109. Pyrometry.
115. Photography. W. (4) Higgs.
Quantitative study of the more important photographic processes and the application of photography to the sciences and arts. Pr., 54.
140. Sound. W. (3) Kenworthy.
Study of sound sources, transmission, and absorption of sound with applications. Pr., 3 or 6.
150. Heat and Introduction to Thermodynamics and Kinetic Theory. S. (3) Utterback.
Pr., 3 or 6.
154. Low and High Frequency Measurements. S. (4) Uehling.
Measurements of resistance, inductance, and capacitance as a function of frequency. Study of simple and coupled circuits, impedance of complex circuits and vacuum tube characteristics. Pr., 106, calculus.
160. Optics. S. (6) Osborn.
Pr., 3 or 6, calculus.

*Not offered in 1940-1941.

166. **Physical Oceanography.** S. (2) Utterback.
Physical properties of sea water; methods of observation and operation of instruments; theory of the measurements of ocean currents. Pr., 3 or 6.
- 167, 168, 169. **Special Problems.** A,W,S. (†) Staff.
Pr., permission.
170. **Spectrometry.** W. (3) Osborn.
Pr., 160, or permission.
180. **History of Physics.** W. (2) Osborn.
Pr., 3 or 6.
- 191, 192. **Theoretical Mechanics.** A,W. (4, 4) Loughridge.
Pr., 20 credits in physics, and calculus.
- 195, 196. **Experimental Atomic Physics.** A,W. (3, 3) Higgs.
Designed to acquaint the student with a group of phenomena representative of modern experimental physics. Pr., 30 credits in physics.

Courses for Graduates Only

- 200, 201, 202. **Introduction to Theoretical Physics.** A,W,S. (6, 6, 6) Henderson, Loughridge, Uehling.
These courses constitute a thorough foundation for subsequent specialization and more intensive study. Pr., 40 credits in physics; Math. 114 concurrently.
204. **Thermodynamics.** S. (6) Utterback.
Pr., 40 credits in physics.
205. **Kinetic Theory.** A. (6) Utterback.
Pr., 40 credits in physics.
- *210 **Mathematical Theory of Sound.**
- *211. **Statistical Mechanics.**
212. **Conduction of Electricity Through Gases.** A. (6) Henderson.
Pr., 40 credits in physics.
- 213, 214. **Electricity and Magnetism.** W,S. (4, 4) Loughridge.
Study of properties of electric and magnetic fields illustrated by problems showing the application of harmonic functions and conformal representation. Discussion of the motion of charged particles in various force fields. Pr., 201.
216. **X-Rays.** W. (6) Henderson.
Pr., 40 credits in physics.
- *219. **Hydrodynamics.**
- *220. **Advanced Dynamics.**
221. **Collision Theory.** S. (6) Loughridge.
Application of classical and quantum mechanics to collision between atoms, electrons, and ions. Pr., 240.
- *222. **The Metallic State.**
- *226, 227. **Electromagnetic Theory.**
- *230, 231. **Atomic Structure.**
- 239, 240. **Wave Mechanics.** A,W. (4, 4) Uehling.
Fundamental principles of quantum mechanics with numerous applications to practical problems in spectroscopy, nuclear physics, and radiation. The course is intermediate in character, and is intended for those who desire a practical knowledge of the methods of solution of problems in quantum mechanics, as well as for those who plan to take 245, 246, 247, for which a thorough knowledge of non-relativistic quantum mechanics is prerequisite. Pr., 202 or equivalent.
- *241, 242, 243. **Relativity.**
- *245, 246, 247. **Advanced Quantum Mechanics.**
- 250, 251, 252. **Seminar.** A,W,S. (†) Staff.
Pr., graduate standing.
- 256, 257, 258. **Research.** A,W,S. (†) Staff.

*Not offered in 1940-1941.

†To be arranged.

POLITICAL SCIENCE

Professors Martin, Cole, Mander, Levy; Associate Professors Cook, Spellacy, Webster; Assistant Professors Taylor, von Brevern.

Lower Division Courses

Elementary Course Primarily for Freshmen

1. **Survey of Political Science.** A,W,S. (5) Martin, Mander, Cook.
Forms and functions of modern government; political ideas and institutions, American and foreign.

Intermediate Courses Primarily for Sophomores

51. **Principles of Politics.** A. (5) Cook.
Introduction to certain major concepts of political science, such as sovereignty, political obligation, liberty, rights.
52. **Introduction to Public Law.** W. (5) Cole.
Legal construction of political organization. The state and the individual; leading concepts in constitutional, international and administrative law.
54. **International Relations.** A. (5) Mander.
Rise of modern states; alliances, imperialism, the League of Nations; present problems; factors underlying international relations.
60. **The American Government.** S. (5) Cole.
Principles of the American governmental system, federal and state; the accommodation of eighteenth century doctrines and institutions to the needs of our modern continental republic.
61. **Municipal Government.** S. (5) Spellacy.
Growth of cities, home rule, city charters, forms of city government, politics, and other problems.
71. **Great Personalities: Continental Europe.** W. (3) von Brevern.
The leading personalities of Great Britain, France, Germany, Italy, Spain, Poland, and the Balkans; their influence in international relations.
72. **Great Personalities: The Near East and Asia.** S. (3) von Brevern.
Leading personalities of Turkey, Soviet Russia, Japan, and China; their influence in national policies. Effect of these policies in international relations.
101. **Introduction to American Constitutional Government.** A,W,S. (2) Webster.
Fundamental principles of American Constitutional system; function, evolution; unwritten constitution.

Group I. Political Theory and Jurisprudence

111. **History of Political Thought.** A. (5) Cook.
Major concepts of the needs of man as a political animal, from Socrates to the beginning of the nineteenth century, with special emphasis on permanent elements in tradition.
112. **American Political Thought.** W. (3) Cook.
Study of some major political thinkers in America from the Colonial Period to the present, emphasizing certain lasting issues, such as centralization vs. decentralization.
113. **Contemporary Political Thought.** S. (5) Cook.
Inquiry into changing concepts of the bases and functions of the state and of the sphere of the individual since the impact of the French and Industrial revolutions.
114. **Oriental Political Thought.** W. (5) Taylor.
Theories and principles of statehood and statecraft in the Orient, especially in China, India, and Japan.
115. **Problems in Systematic Political Science.** W. (3) Cook.
Nature, scope, and function of political authority and political power in the modern world.

116. **Propaganda as a Social and Political Force.** W. (3) McKenzie.
Techniques of propaganda and its underlying philosophy; its uses during war by authoritarian and democratic states, by economic interests, political groups, peace and war groups. Propaganda media. Its relation to public opinion.
118. **Law and the State.** A. (5) Cole.
Ancient, medieval, and modern conceptions of the relationship between political authority and the legal institution. Law and politics in an ideal commonwealth.
119. **Jurisprudence.** W. (5) Cole.
Law as an agency of social control. Survey of such fundamental concepts as rights, persons, property, contract, liability. Sources of law: legislation, precedent, custom.

Group II. International Relations

121. **Foreign Relations of the United States: Europe.** W. (3) Martin.
Traditional policies of the nineteenth century. New problems after 1914. Relations with international organization.
- *122. **The Foreign Service.**
123. **Foreign Relations of the United States: The Americas.** A. (3) von Brevern.
The Monroe Doctrine; Pan-Americanism; imperialism. Our special position in relation to Mexico, Central America, the Caribbean.
124. **Contemporary World Politics.** S. (3) Mander.
Assumptions of pre-war international organization; principles of collective security and their apparent breakdown; recent developments in Europe and the Far East.
125. **Colonial Government and Administration.** A,W. (3) von Brevern.
Policies of and administration by leading colonial powers and the United States. Government of native peoples; mandate; India and the Philippines.
126. **Politics and Military Armament.** A. (3) von Brevern.
National policies of major powers in regard to military preparedness; international policies toward maintenance of world peace.
127. **International Organization and Administration.** A. (5) Mander.
International unions, conferences, commissions, especially the League of Nations.
129. **International Relations in the Far East.** A. (5) Taylor.
Relations between China, Japan, Russia, Philippines before 1839. Economic and political expansion of Europe in the East and the relations between Eastern powers from 1839 to 1930. The Far East in world politics.
130. **The Middle and Near East.** S. (5) Mander.
The New Moslem world. Effect of nationalism. Turkey, Egypt, Palestine, Iraq, Syria, Arabia, Persia, Afghanistan; India in the British Commonwealth.
131. **International Practice and Procedure.** S. (3) Martin.
Diplomatic protection of citizens abroad. Rights and duties of aliens. International claims. Modes of redress short of war. Regulations of war and neutrality. Extradition. International arbitral and judicial procedure.
- *132. **American Foreign Policy in Far East.**
133. **Europe Since 1914.** A. (5) Levy.
Broad outline of history from the World War to the present.
134. **Power Politics.** S. (3) Martin.
Pragmatic philosophies and Machiavellian practices in modern world politics. Their impingement on political idealism and democratic systems.
- Law 122. International Law.** A,W. (3) Martin.
General principles of international law as developed by custom and agreement, and as exhibited in decisions of international tribunals and municipal courts.
- Diplomatic History of Eastern Asia.** See Oriental Studies 125-126, 127.

*Not offered in 1940-1941.

Group III. Politics and Administration

150. **Pressure Politics.** W. (3) Spellacy.
History and theory of the representation of interests in the United States. Political influence of private and unofficial organizations and groups. The government in politics.
- *151. **Problems in American Federal Government.**
152. **Political Parties and Elections.** S. (5) Spellacy.
Organization and methods of political parties; campaigns and conventions; election administration.
153. **Introduction to Constitutional Law.** S. (5) Cole.
Growth and development of the United States Constitution as reflected in decisions of the Supreme Court. Political, economic, social effects.
154. **The Public Service.** W. (5) Webster.
Governmental employment in the United States, Great Britain, France, and Germany, and problems involved.
155. **Introduction to Public Administration.** A. (5) Spellacy.
General survey of the field of public administration, including relationship of administration to other agencies of government.
- Public Finance.** See Economics and Business 171.
156. **Parliamentary Governments in Europe.** S. (5) von Brevern.
The governments of Northern and Western Europe which have retained their parliamentary institutions.
157. **The New Governments of Europe.** W. (5) Mander.
Democracy and dictatorship in post-war Europe. Probable trends of government.
158. **Government and Politics in the Far East.** S. (5) Taylor.
Political theory and structure of government in China, Japan, Manchukuo, Korea, Formosa. Social and economic basis of government and politics, especially in China and Japan. Colonial administration in Indo-China and the Philippines.
159. **The British Empire.** S. (3) Mander.
The dominions and legal relations: India, and problems of unity.
160. **Eastern European Governments.** W. (3) von Brevern.
Governments and policies of Northeastern and Eastern Europe. Constitutional systems, political structure, administrative organization, and international relations of the Baltic, Danubian, and Balkan states.
161. **Government and Business.** A. (5) Spellacy.
Historical background, constitutional limitations, restraint of trade and manipulation of prices, government control of public utility activities.
162. **Municipal Administration.** W. (5) Spellacy.
Civil service, finance, city planning, zoning, police, traffic, health, water, sewerage, public works, utilities, etc.
163. **State Government and Administration.** A. (5) Webster.
Constitutions, governor, legislature, administrative organizations, state activities, counties, parties, elections.
164. **Public Policy in Governmental Planning.** S. (3) Webster.
Historical development of governmental planning; legal basis of national, state, and local planning agencies; general scope of their powers and functions; policy determination; coordination of planning agencies and administrative departments.
165. **The Legislative Process.** S. (5) Spellacy.
Comparative legislative systems with special reference to the United States and Great Britain. Principles of representation. Changes in legislative functions.
166. **Constitutional Law in Europe.** W. (3) Levy.
Comparative analysis of the constitutions of the major European countries, especially of Great Britain, France, Italy, Germany, and Soviet Russia. Forms of government. Executive, legislative, judicial branches. Relations between government and individual.

* Not offered in 1940-1941.

Courses for Advanced Undergraduates

170. **Introduction to Geo-Politics.** S. (3) von Brevern.
Analysis of political development and function of states as conditioned by demographic and ethnographic factors and political boundaries. For majors in political science.
190. **Introduction to Roman Law.** A. (5) Levy.
General importance of Roman law, its sources and civil procedure. Main features of classical law of persons, property, contracts, torts, and succession in the light of modern research, with a background of political, economic, and social factors.
191. **Comparative Law.** W. (3) Levy.
Brief summary of the development, character, and judicial organization of French and German legal systems. Introduction to comparative methods in such problems as specific performance in the law of contracts, coincidence between delivery and payment, offer and acceptance, etc.
192. **Introduction to Modern Civil Law.** S. (5) Levy.
Main features of the law of persons, property, contracts, torts, and succession in the world today, as developed on the basis of Roman law.
199. **Individual Conference and Research.** A,W,S. (2 to 5) Staff.
For advanced undergraduates having high scholastic standing, with consent of instructor concerned.

Courses for Graduates Only

- 201, 202, 203. **Graduate Seminar.** A,W,S. (3, 3, 3) Martin.
For candidates for higher degrees in political science.
- 211, 212, 213. **Seminar in Political Thought.** A,W,S. (3, 3, 3) Cole.
Readings and discussions based on the writings of first importance of the masters of political science.
215. **Methods and Research in Political Science.** A. (3 to 5) Cook.
Political science and the social sciences; methods of research; bibliography of general and special fields.
216. **Concepts of Political Theory: Problems in Authority and Liberty.** W. (3 to 5) Cook.
217. **Concepts of Political Theory: Problems of Equality and Function.** (S) (3 to 5) Cook.
- 221, 222. **Seminar in International Organization.** A,W. (3 to 5 each quarter.) Mander.
234. **Seminar in Roman Law.** W. (3) Levy.
Introduction to modern research in Roman law. Readings in Justinian's *Institutes* and *Digest* in English translation.
251. **Seminar in Politics and Administration.** W. (3 to 5) Spellacy.
Research in special problems.
256. **Seminar in Government and Public Law.** A. (3 to 5) Cole.
299. **Individual Research.** A,W,S. (2 to 5) Staff.
For advanced graduates admitted to candidacy for higher degrees, with the consent of the department.
- Seminar in Oriental Diplomacy.** See Oriental Studies 225, 226, 227.
- Constitutional Law.** See Law 119, 120.
- Administrative Law.** See Law 121.

PSYCHOLOGY

Professors Smith, Guthrie, Wilson, Esper; Associate Professor Gundlach; Assistant Professors Horton, Loucks, Hermans.

1. **General Psychology.** A,W,S. (5) Wilson and Staff.
Survey of the science. Man's original nature, the way in which nature is altered by use; the individual and social behavior that results.
2. **Psychology of Adjustment.** A,W,S. (5) Loucks, Horton, Wilson.
Nature of personality and ways in which personalities are formed in adjusting to the world. Pr., 1.
21. **Applied Psychology.** W. (5) Gundlach.
Psychology of personal efficiency, vocational guidance, scientific management, law, medicine, athletics, business, advertising. Upper division credit for upper division students. Pr., 1.
102. **The Neural Basis of Behavior.** A. (5) Esper.
Action, emotion, regulatory functions, learning, thinking. Pr., 1, Zool. 1-2 or 3-4, and permission of instructor.
106. **Experimental Psychology.** W. (5) Esper.
Training in laboratory methods. Pr., 1, 108, 109, and permission of instructor. Two lectures, six hours lab.
108. **Essentials of Mental Measurement.** W. (5) Guthrie.
Use of statistical methods in psychology. Pr., 1; Math. 3 or 5, or 31-32-33.
109. **Advanced Mental Measurement.** S. (5) Guthrie.
Continuation of 108.
- *111. **History of Psychology.**
112. **Modern Psychological Theory.** S. (3) Guthrie.
Contributions of living psychologists and a critical consideration of current theory. Pr., 1.
116. **Animal Behavior.** A. (3) Horton.
Psychology of animals in the laboratory and under natural conditions.
117. **Superstition and Belief.** A. (2) Smith.
Why we are superstitious. Psychological analysis and historical development of certain false opinions. Pr., 1.
118. **Social Psychology.** A. (5) Guthrie.
Psychology of social human nature; language, custom, public opinion, morals, war, family, caste, nationalism, religion. Pr. 1.
120. **Psychology and the Arts.** A. (2) Gundlach.
Effective structure of materials. Applications to life. Measurement of talent and appreciation. Basis of creative ability. Pr., 1.
124. **Psychology of Learning.** S. (5) Esper.
How habits are formed. Efficiency in learning, transfer of training, recent experimental findings. Pr., 1 and 2.
125. **Space Perception.** W. (2) Hermans.
Coordination of senses in development of perceptual responses to objects and events in space. Pr., 1.
126. **Psychology of Maladjustment.** S. (3) Smith.
Origin and mechanism of behavior that interferes with proper adjustment. Physiological pathology. Psycho-therapy. Pr., 15 credits in psychology including 2.
131. **Child Psychology.** A. (5) Smith.
Individual and social development and their causes, from infancy to adult age. Pr., 1.
133. **Advanced Child Psychology.** S. (2) Smith.
Study of recent research in child development. Pr., 131.
140. **Conditioning.** W. (5) Loucks.
Experimental work on conditioning. Significance for the several fields of psychology. Emphasis on specific research techniques. Pr., 10 credits in psychology.

* Not offered in 1940-1941.

141. **Sensory Basis of Behavior.** S. (5) **Gundlach, Horton.**
Sensory and perceptual phenomena; sensory equipment, and theories of sense-organ function. Pr., 15 credits in psychology.
- 151, 152, 153. **Undergraduate Research.** A,W,S. (3, 3, 3) **Staff.**
Pr., 106 and permission of department.

Courses for Graduates Only

Before a student registers for graduate courses, his topic for research must be approved by the department.

- 201, 202, 203. **Graduate Research.** A,W,S. (†) **Staff.**
- 211, 212, 213. **Seminar.** A,W,S. (2, 2, 2) **Staff.**

ROMANIC LANGUAGES AND LITERATURE

Professors Nostrand, Frein, Garcia-Prada, Goggio, Helmlingé, Umphrey; Associate Professors Chessser, W. Wilson; Assistant Professors David, Simpson, Whittlesey, C. Wilson; Instructors Creore, Hamilton.

Students with less than one high-school year of preparation will normally enter course 1; with one or one and one-half years of preparation, course 3R; with two years of preparation, course 4 (or 4 and 7 in French, if the preparation is inadequate); with three years, courses 101 and 104; with four years, course 104. After a lapse of two years or more since high school instruction in a language, a student may repeat one quarter with credit. Any exception involving credit must be determined by the executive officer of the department.

In instances where a foreign language must be taken to satisfy an entrance deficiency of two units, the requirement may be satisfied by taking French 5 (or 4 and 7); Spanish 5; or Italian 18 plus 4 or 6 hours of either 111, 112, 113 or 121, 122, 123.

French

1-2, 3. **Elementary.** Any quarter. (5-5,5)

No credit for 1 until 2 has been completed. Pr. for 3 is 2 with a grade of not less than "C." Students receiving "D" in 2 are advised to proceed to 3R.

3R. **Grammar Review.** A,W,S. (5)

Intensive review of grammar covered in 1, 2, and 3. Open to all students who for any reason are not qualified to meet the prerequisite for 4. Students having had 3, or having presented two years of high-school French (or equivalent) for entrance into the University, may not receive credit for 3R unless there has been at least a two-year lapse in their study of French.

4, 5, 6. **Intermediate.** A,W,S. (3, 3, 3)

Reading of modern texts, composition, functional grammar. Students in need of supplementary grammar may combine 4 and 7, making a five-hour course. The same is true of 5 and 8, 6 and 9. Pr., 3 or two high-school years, or equivalent.

7, 8, 9. **Intermediate Grammar (Optional)** A,W,S. (2, 2, 2)

Reading and composition with emphasis on functional grammar. Students not well enough prepared to elect 4 alone, but sufficiently advanced to dispense with 3R, should elect coordinated courses 4 and 7, which form a five-hour course in intermediate French.

34, 35, 36, and 134, 135, 136. **Comparative Literature of France, Italy and Spain, in English.** A,W,S. (3, 3, 3) **Goggio.**

(Lower division students register for 34, 35, 36; upper division students, for 134, 135, 136.) The three principal Romanic literatures, with attention to their influence on one another. Lectures and collateral reading in English. The course may be counted in either French, Italian, or Spanish, or as elective credit in English major. No prerequisite. May be entered any quarter.

37, 38, 39. **Lower Division Scientific French.** A,W,S. (3, 3, 3) **Whittlesey.**

Class reading of scientific texts, with emphasis on constructions and scientific terms. For upper division scientific French, see 137, 138, 139. Pr., 4 or equivalent.

†To be arranged.

41. **Phonetics.** A,W,S. (3) **Nostrand.**
Analysis of sounds, intonation, rhythm; training in correct and natural pronunciation. Principles of such analysis and training, applicable in the development of skill and personality generally. Pr., 3 or equivalent. Upper division credit to upper division students.
- 101, 102, 103. **Advanced Composition and Conversation.** A,W,S. (2, 2, 2) **Helmlinge, Chessex, David.**
Pr., 6 or equivalent.
- 104, 105, 106. **Survey of French Literature.** A,W,S. (3, 3, 3) **Chessex.**
Detailed study of representative masterpieces from the seventeenth century to the present. Lectures, in French as soon as practicable, on the evolution of French literature and civilization from the beginning. Pr., 6 or equivalent.
- 107, 108. **Themes.** W,S. (2) **Helmlinge.**
Writing of original compositions upon assigned topics. Pr., 102 or equivalent.
- 118, 119, 120. **Survey of French Literature in English.** A,W,S. (3, 3, 3) **Chessex.**
Course 118, from the Song of Roland to the Renaissance; 119, Classicism and Enlightenment; 120, Romanticism to the present. Assigned reading in the principal authors, and a large proportion of individual reading, so that the student may emphasize any part of the subject (contemporary period, social aspects, etc.) throughout the year.
- *121, 122, 123. **French Prose Fiction.**
- 127, 128, 129. **Advanced Conversation.** A,W,S. (2, 2, 2) **Helmlinge, Simpson.**
For majors and others admitted by the instructor. Careful preparation for each day's exercise will be required. Pr., 101 or equivalent.
- 131, 132, 133. **Lyric Poetry.** A,W,S. (3, 3, 3) **Creore.**
Lyric and narrative poetry from the sixteenth century to the Symbolist movement. Lectures in French. Pr., 6 or equivalent.
- 134, 135, 136. **Comparative Literature of France, Italy and Spain, in English.**
See 34, 35, 36.
- 137, 138, 139. **Upper Division Scientific French.** A,W,S. (2, 2, 2) **Whittlesey.**
Conducted in individual conferences. Students read material in their own fields. Pr., 37 or 38 or 39 with grade "B," or consent of instructor.
- 141, 142, 143. **The French Drama.** A,W,S. (3, 3, 3) **Chessex.**
Course 141, the Middle Ages, Renaissance, and Classicism; 142, the eighteenth century, and Romanticism to 1850; 143, Realism, Symbolism, and the contemporary theater. Lectures in French. Pr., 6 or equivalent.
- 151, 152, 153. **French Literature of the Nineteenth Century.** A,W,S. (3, 3, 3) **Simpson.**
Course 151, the revolutionary spirit and the early romanticists; 152, Romanticism; 153, Realism. Lectures in French. Pr., 6 or equivalent.
- 154, 155, 156. **Contemporary French Literature.** A,W,S. (3, 3, 3) **Nostrand.**
Course 154, from the Symbolist movement of the 1880's to 1900; 155, the pre-war, 156, the post-war generations. Detailed study of representative writings against the background of artistic evolution and social history. Lectures and discussions in English. Individual readings and essay topics. Pr., 6 or consent of instructor: students not able to read in French will attend stated lectures and do additional reading.
- 158, 159. **Advanced Syntax.** A,W,S. (2, 2) **Chessex, David.**
French syntax from the teacher's standpoint. Should precede the teachers' course. Pr., 103 or 107 or 108. 158, autumn, winter; 159, winter, spring.
- 161, 162, 163. **Eighteenth Century Literature.** A,W,S. (2, 2, 2) **David.**
Course 161, criticism of social and literary canons; Fénelon, Bayle, Fontenelle, Montesquieu; 162, the Encyclopedists and the rise of middle-class liberalism: Voltaire, Diderot; 163, the jacobin spirit and the idéologues: d'Holbach, Helvetius, de Tracy. Lectures in French and *explication de textes* in English. An essay each quarter. Pr., 6 or equivalent.
- 171, 172, 173. **Seventeenth Century Literature.** A,W,S. (3, 3, 3) **C. Wilson.**
Course 171, the pre-classical period; 172, the classic generation; 173, the late classic period up to 1715. Lectures in French. Pr., 6 or equivalent.

Teachers' Course in French. See Educ. 75K.

*Not offered in 1940-1941.

Courses for Graduates Only

- 201, 202, 203. Renaissance Literature. A,W,S. (2, 2, 2) David.
 Course 201, lyric poetry: Villon; rationalism: Commynes; Italian influences on art and literature: Antoine de la Salle, Marguerite de Valois, Rabelais. Course 202, the Pléiade and the humanists. Course 203, philosophical criticism: Montaigne; reformation and counter-reformation: Calvin, d'Aubigné, Francois de Sales; the theater. Lectures in French, discussions in English. An essay each quarter. Pr., four years of French.
- *211, 212, 213. French Stylistics.
- 221, 222, 223. Old French Reading. A,W,S. (3, 3, 3) Frein.
 Open to all who have studied French at least four years. French majors will ordinarily translate into modern French. All who desire may, without prejudice, translate the old French into English. Helpful to teachers of French and Spanish, and for those studying the English language.
- 231, 232, 233. History of Old French Literature. A,W,S. (2, 2, 2) Frein.
 Lectures in French. Assigned reading in French, or in English for those who do not easily read French. Pr., graduate standing and at least four years of French.
- *241, 242, 243. French Historical Grammar.
- 281, 282, 283. Seminar: Problems and Methods of French Literary History. A,W,S. (2, 2, 2) Nostrand.
 Bibliographical resources; principles and objectives of literary research; criticism of students' essays (which may be preliminary portions of theses). Conducted in English.
- 291, 292, 293. Conferences for Theses and Special Studies. A,W,S. (3, 3, 3) Staff.

Provençal

224. Old Provençal. S. (3) Simpson.
 The language, and representative reading.

Italian

- 1-2. Elementary. W,S. (5-5) Whittlesey.
 No credit for 1 until 2 has been completed.
- 4-5-6. Elementary. A,W,S. (3-3-3) Goggio.
 Equivalent to 1-2. No credit for 4 and 5 until 6 has been completed.
- 16, 17, 18. Intermediate. A,W,S. (2 or 3 each) Goggio.
 Reading, composition, conversation. Pr., 2, or 6, or permission of instructor. U.D. credit for U.D. students.
- 34, 35, 36, and 134, 135, 136. Comparative Literature of France, Italy and Spain, in English.
 See French 34, 35, 36.
- 111, 112, 113. Modern Italian Literature. A,W,S. (2 or 3 each) Goggio.
 Masterpieces of the principal literary types, from the late eighteenth century to the present. Pr., 2 or 6 with grade of B; or 18.
- *121, 122, 123. The Italian Novel.
- 181, 182. Dante in English. A,W. (2, 2) Goggio.
 The thought and expression of the *Divine Comedy*, against its background of medieval philosophy and art. May be counted as elective credit in English major.
184. Renaissance Literature of Italy in English. S. (2) Goggio.
 Lectures and collateral reading. May be counted as elective credit in English major.

* Not offered in 1940-1941.

Courses for Graduates Only

*221, 222, 223. Italian Literature of the XIIth to the XVth Centuries.

231, 232, 233. History of Old Italian Literature. A,W,S. (2 to 5 each quarter) Goggio.

Extracts from old texts to be translated by majors into modern Italian.

*243. Italian Historical Grammar.

251, 252, 253. Individual Conference. A,W,S. (2 to 5 each quarter) Staff.
Pr., consent of the executive officer.

Spanish

1-2, 3. Elementary. A,W,S. (5-5, 5)

No credit for 1 until 2 has been completed. Each course repeated every quarter.

3R. Grammar Review. A,W,S. (5)

Intensive review of grammar covered by 1, 2, 3. Open to all students who for any reason are not qualified to meet the prerequisite for 4. Those having had 3, or having presented two years of high-school Spanish, or equivalent, for entrance into the University, may not receive credit for 3R unless there has been at least a two-year lapse in their study of Spanish.

4, 5, 6. Intermediate. A,W,S. (3, 3, 3) Umphrey, Garcia-Prada, W. Wilson.

Reading of modern texts, composition, functional grammar. Pr. to 4 is 3, or two high-school years with at least average standing, or equivalent.

6R. Review of Intermediate Spanish. A,W,S. (3)

For students in need of a review of grammar before entering those courses for which 6 or equivalent is prerequisite.

34, 35, 36. Comparative Literature of France, Italy and Spain, in English.

See French 34, 35, 36.

101, 102. Advanced Composition and Conversation. 101: A, S.; 102: W. (3, 3)
Garcia-Prada, W. Wilson.

Pr., 6 or equivalent.

103. Spanish Themes. S. (3)

Garcia-Prada.

Practice in writing original compositions. Pr., 102, or equivalent.

104, 105, 106. Survey of Spanish Literature. A,W,S. (2, 2, 2)

Umphrey.

Historical outline of Spanish culture from early times to the present. Pr., 6 or equivalent.

118, 119, 120. Survey of Spanish Literature in English. A,W,S. (2, 2, 2)

Garcia-Prada.

The cultural life of Spain, with special attention to literature. Course 118, from the beginnings through the Renaissance; 119, the Golden Age; 120, from 1700 to the present. Assigned reading in the principal authors, and a large proportion of individual reading, so that the student may emphasize any part of the subject (contemporary period, social aspects, etc.) throughout the year.

*121, 122. Spanish Prose Fiction.

*131. Lyric Poetry.

134, 135, 136. Comparative Literature of France, Italy and Spain, in English.

See French 34, 35, 36.

141, 142, 143. Spanish Drama. A,W,S. (3, 3, 3)

Umphrey, Garcia-Prada.

From its beginnings to the present day. Selected texts for intensive study. Collateral reading, lectures, and discussions. Pr., 6 or equivalent.

151, 152, 153. Spanish Literature of the Nineteenth Century. A,W,S. (2, 2, 2)

W. Wilson.

One quarter will be given to each of the three periods respectively: romantic movement, middle period, recent and contemporary literature. Lectures, collateral reading. Pr., 6 or equivalent.

*Not offered in 1940-1941.

- 158, 159. Advanced Syntax. W,S. (2, 2) Umphrey.
 Elementary principles of philology. Application to teaching of Spanish syntax, pronunciation, and orthography. Pr., 102 or equivalent.
- *171, 172, 173. Seventeenth Century.
- *181, 182, 183. Spanish-American Literature.
185. Spanish-American Literature. A. (3) Garcia-Prada.
 Social and cultural life of Colombia and Venezuela, with special attention to literature. Selected texts, collateral reading, lectures and discussions. Pr., 6 or equivalent.
- 186, 187. Spanish-American Literature. W,S. (3, 3) Umphrey.
 Literature of Peru, Chile, and Ecuador will be studied winter quarter; literature of Argentina and Uruguay in the spring quarter. Pr., 6 or equivalent.
- Teachers' Course in Spanish. (See Educ. 75Y.)

Courses for Graduates Only

221. Old Spanish Reading. A. (5) Umphrey.
 Reading and linguistic study of the Poema de Mio Cid and other Old Spanish texts.
231. Epic Poetry. W. (5) Umphrey.
 The epic material in Old Spanish literature and its later treatment in poetry and drama. Special investigations and reports.
241. Spanish Historical Grammar. S. (5) Umphrey.
- 291, 292, 293. Conferences for Theses and Special Studies. A,W,S. Staff.

SCANDINAVIAN LANGUAGES AND LITERATURE

Professor Vickner; Instructor Arestad.

- 1-2, 3. Elementary Swedish. A,W,S. (3-3, 3) Vickner.
 May be taken with 4-5, 6, making five-hour courses; 1, 2, 3 are hyphenated if 4-5 are not taken. Courses 1, 2 repeated winter and spring quarters respectively.
- 4-5, 6. Swedish Reading Course for Beginners. A,W,S. (2-2, 2) Vickner.
 Supplementary to courses 1-2, 3, but may also be taken separately. No previous knowledge of Swedish necessary.
- 10-11, 12. Elementary Norwegian or Danish. A,W,S. (3-3, 3) Arestad.
 May be taken with 13-14, 15, making five-hour courses; 10, 11, 12 are hyphenated if 13-14 are not taken. Danish students will do their work in special conference. Courses 10, 11 repeated winter and spring quarters, respectively.
- 13-14, 15. Norwegian-Danish Reading Course for Beginners. A,W,S. (2-2, 2) Arestad.
 Supplementary to 10-11, 12, but may also be taken separately. No previous knowledge of Norwegian or Danish necessary.
- 20, 21, 22. Norwegian or Danish Literature. A,W,S. (2, 2, 2) Arestad.
 Pr., ability to read easy Norwegian or Danish. Danish students will do their work in special conference.
- 23, 24, 25. Swedish Literature. A,W,S. (2, 2, 2) Vickner.
 Pr., ability to read easy Swedish.
98. Early Scandinavian Literature. A,W,S. (1) Vickner.
 Lecture survey of the early Scandinavian literature. Reading in English translation. No prerequisites. Upper division credit to upper division students.
99. Outline of Scandinavian Culture. A,W,S. (1) Vickner, Arestad.
 Knowledge of Scandinavian languages not required.
- 103, 104, 105. Recent Swedish Writers. A,W,S. (2 or 3 each quarter; 4 by perm.) Vickner.
 Pr., relatively fluent reading knowledge of Swedish.

*Not offered in 1940-1941.

- 106, 107, 108. Recent Norwegian or Danish Writers. A,W,S. (2 or 3 each quarter; 4 by perm.) Vickner, Arestad.
Pr., relatively fluent reading knowledge of Norwegian or Danish. Danish students will do their work in special conference.
- 109, 110, 111. Modern Scandinavian Authors in English Translation. A,W,S. Arestad.
(1, 1, 1)
No knowledge of the Scandinavian languages necessary.
- 180, 181, 182. Recent Scandinavian Literature in English Translation. A,W,S. Vickner.
(2, 2, 2)
No knowledge of the Scandinavian languages necessary.

Courses for Graduates Only

- *201-202. Old Icelandic.
- 205-206. Scandinavian Literature in the Nineteenth Century. W,S. (2 to 4 each quarter) Vickner.
- *208. Scandinavian Lyric Poetry.

Comparative Philology

- 190-191. Introduction to the Science of Language. A,W. (2-2) Vickner.
General principles of linguistic development with special reference to English. Pr., some knowledge of one of the classical languages or of one modern foreign language.
192. Life of Words. S. (2) Vickner.
Etymology and semantics; growth of vocabulary; word values. Lectures, discussions, exercises. Pr., same as for 190-191.

SLAVIC STUDIES (Russian Language)—See Oriental Studies.

SOCIOLOGY

Professors Steiner, Hayner, Woolston; Associate Professor Schmid; Instructors Cohen, Guthrie, ———.

1. Survey of Sociology. A,W,S. (5) Staff.
Basic principles for understanding social relationships. Juniors and seniors may substitute 150.
27. Survey of Contemporary Social Problems. W. (5) Schmid.
Introduction to the scientific study of suicide, crime, population, unemployment, mental deficiency, mental diseases, family disorganization, etc. Pr., 1.
31. Social Statistics. A. (5) Cohen.
Methods and sources for quantitative investigation, as applied to sociology and related fields. Pr., 1; senior standing or permission.
55. Human Ecology. A,W. (5) Steiner.
Factors and forces which determine the distribution of people and institutions. Pr., 1.
66. Group Behavior. W,S. (5) ———.
Analysis of conditioning factors and collective response in typical social groups—crowds, assemblies, parties, sects, etc. Pr., five credits sociology and five credits psychology. Upper division credit with consent of instructor.
- *70. Family Standards.
- *90. Social Change:
102. Social Trends. S. (3) Cohen.
Sociological analysis of current events and social changes. Not open to students who have had 2. Pr., 1.
112. The Family. A,W,S. (5) Hayner.
The changing home; family and marriage customs; family interaction and organization; analysis and treatment of domestic discord. Pr., 1.

*Not offered in 1940-1941.

- *124. **Play and Leisure Time.**
128. **Field of Social Work.** A, S. (3) Crounse.
Historical background and development. Present scope, aims, methods. Typical problems and agencies; field trips. Pr., 1.
131. **Social Statistics.** W, S. (5) Cohen.
Quantitative analysis applied to sociological and related materials. Not open to students who have had 31. Pr., 1, and Math. 13.
132. **Methods of Social Research.** S. (5) Schmid.
Theory and practice of conducting investigation of communities, institutions, social conditions. Field and lab. work. Pr., 31, 131, or approved equivalent.
134. **Advanced Social Statistics.** W. (5) Cohen.
Application of methods of probability and correlation to selected sociological materials. Pr., 31 or 131.
135. **Graphic Methods in Sociology.** A. (3) Schmid.
Theory and practice of constructing various types of maps and graphs used in sociological research and exhibits. Pr., 31 or 131, or approved equivalent.
140. **Population Problems.** A. (3) Schmid.
Major quantitative and qualitative problems of population in our contemporary society. Pr., 5 credits in sociology or economics.
141. **Human Migration.** W. (3) Steiner.
Human migrations, factors determining them, and problems arising therefrom. Pr., 5 credits in sociology or economics.
142. **Race Relations.** S. (3) Steiner.
General survey of race problems and conditions associated therewith. Special attention to race contacts on the Pacific Rim. Pr., 5 credits in sociology or economics.
146. **Cooperation.** S. (5) Woolston.
Development of material aid—economic, political, and social. Pr., 20 credits in social science.
150. **General Sociology.** A. (5) Guthrie.
Major concepts of sociology and the scientific point of view in dealing with social phenomena. Pr., 5 credits in psychology and 5 credits in social science.
152. **Social Control.** S. (5) Guthrie.
Analysis of the technique and process by which changes in individual and collective actions are effected. Pr., 1.
153. **Problems of Social Insecurity.** A. (3) Cohen.
Historical trends; standards by which poverty is measured; attitudes and social currents which it engenders; the responses of the community to problems of economic insufficiency. Pr., 1.
155. **Human Ecology.** A, W. (5) Hayner, Cohen.
Same as 55, with additional work and readings. Pr., 1, junior standing.
156. **Criminology.** A, W. (5) Steiner.
Individual and social factors in delinquency; history and methods of criminal justice. Field trips to local penal institutions. Pr., 1.
- *158. **Social Factors in Personality.**
159. **Juvenile Delinquency.** S. (5) Hayner.
Family and community backgrounds; institutional treatment; juvenile court and probation; programs for prevention. Pr., 1, 156.
- *164. **Social Education.**
165. **The City.** A. (5) Woolston.
Organization and activities of urban groups. Comparative and analytic study. Pr., 20 credits in social sciences.
166. **Social Factors in Marriage.** W, S. (5) Hayner.
Study of marital problems and their adjustment. Pr., 1, 112.

* Not offered in 1940-1941.

168. **National Traits.** W. (5) Woolston.
Traditional differences between peoples. Historic backgrounds and prejudice. Problems of assimilation and amalgamation in America. Pr., 5 credits in psychology and 20 credits in other social sciences.
169. **Western Society.** S. (5) Woolston.
Description, comparison, analysis, evaluation of institutional and cultural patterns prevalent in Western Europe, America, and their dependencies. Pr., 20 credits in social science.
170. **Contemporary Social Theory.** W. (5) Guthrie.
Survey and critical analysis of recent sociological theory. Pr., 10 credits of sociology or equivalent.
190. **Social Attitudes.** A. (3) Woolston.
How persons develop and manifest dispositions to act in certain ways toward their fellows. Prerequisites, 5 credits psychology and 20 credits in other social sciences. Upper division students may substitute for 66 with consent of instructor.
194. **Public Opinion.** W. (3) Woolston.
Character and operation of beliefs formed by general discussion. Problems of propaganda, criticism, education. Advanced students only. Pr., 5 credits in psychology and 20 credits in other social sciences.
See also Psych. 117, *Superstition and Belief*, and Journ. 201, *Propaganda*, which articulate with and complete the work of this course.

Courses for Graduates Only

202. **Schools of Sociological Theory.** W. (2) Guthrie.
Critical analysis of main approaches to sociological theory from its beginnings. Pr., 25 credits in social sciences.
- *203, 204, 205. **Social Reform.**
- 210, 211, 212. **Departmental Seminar.** A,W,S. (2, 2, 2) Staff.
Open to graduate students completing independent investigations and to instructors in the department.
- *220. **Population Redistribution.**
- *221. **Population Problems of Japan.**
- *222. **Oriental Migration.**
223. **Social Change in Modern Japan.** W. (2) Steiner.
Analysis of the Japanese way of life with emphasis upon adjustments necessitated by contact with Western culture. Pr., 25 credits in social science.
- *230, 231. **Field Studies in Criminology.**
236. **Interview Methodology.** S. (2) _____.
Theory and practice of interviewing for research. Pr., permission of instructor.
240. **Research Topics in Population.** W. (3) Schmid.
Special individual and group research projects in the fields of population and vital statistics. Pr., 140 or approved equivalent.
242. **World Survey of Race Relations.** S. (2) Steiner.
Study of race contacts and adjustments in South Africa, Australia, Eastern Asia, Netherlands Indies, South America. Pr., 25 credits in social science.
- 247, 248, 249. **Social Criticism.** A,W,S. (2, 2, 2) Woolston.
Examination of conservative and progressive positions regarding the treatment of modern social conditions. Pr., 25 credits of social science.
255. **Advanced Human Ecology.** A. (2) Steiner.
Critical appraisal of ecological conceptions and processes. Pr., 155 and 20 credits in social science.
256. **Probation and Parole.** A. (3) Hayner.
Sociological contributions to the treatment of juvenile and adult probationers and parolees. Pr., 156 or approved equivalent.

* Not offered in 1940-1941.

257. **Correctional Institutions.** W. (3) Hayner.
Prisons and juvenile reformatories as communities. Pr., 156 or approved equivalent.
266. **Marriage and Family Problems.** S. (3) Hayner.
Courtship, marriage, and family problems in America. Pr., 112 or approved equivalent.
- 281, 282, 283. **Reading in Selected Fields.** A,W,S. (2, 2, 2) Staff.
Intensive reading in any of the major fields of sociology. Open only to qualified graduate students by consent of instructor.

GRADUATE SCHOOL OF SOCIAL WORK

Professors Witte, Steiner; Assistant Professors Crounse, Smart; Instructor Dorman; Lecturers Hall, Hoedemaker, Spence; Field Work Supervisor Jonquet.

Permission of School of Social Work Required Before Registration

175. **Social Work and Health.** W. (5) Crounse.
Point of view and method of social case work. Emphasis on social aspects of health needs of families, cooperative relationships between social and health agencies. Open to School of Nursing Education students. Four hours class and four hours laboratory. Pr., Soc. 1 and 128, or equivalents.
176. **The Rural Community.** S. (5) Steiner.
Organization and activities of rural life. Review of investigations and means of amelioration. Pr., seniors with 10 credits in sociology.
200. **Social Case Work I.** A. (3) Smart.
Case material presenting basic principles of social case work, the approach to the individual and his social situation. Professional students only.
201. **Social Case Work II.** W. (3) Smart.
Continuation of *Social Case Work I*, with special attention to interviewing, recording, and treatment methods. Pr., 200, or equivalent.
202. **Advanced Case Work.** S. (3) _____.
Discussion of selected readings and case material to gain understanding of causes, and develop abilities to evaluate and apply methods and processes; consideration of case worker's role in agency and community programs. Pr., 200 and 201, or equivalents, and permission.
210. **Field Work: Family I.** A. (4) Staff.
University field work centers are maintained in cooperation with several branch offices of the King County Welfare Department and the Family Society of Seattle. Minimum time requirement for all professional students, 16 hours a week under University supervision. Pr., professional students; 200 concurrently.
210. **Field Work: Family II.** W. (4) Staff.
Continuation of *Field Work: Family I*, to teach practice in generic case work. Minimum time requirement, 16 hours a week. Pr., 200 and 210 (I), or equivalents; 201 should be taken concurrently.
210. **Field Work: Family III.** S. (4 or 5) Staff.
Advanced field work practice in a family welfare case working agency; 16 or 20 hours a week. Pr., 200, 201, 210 (I and II), and 211, or equivalents; a case work course concurrently.
210. **Field Work: Family IV.** A,W,S. (†) Staff.
Advanced field work practice in a family welfare case working agency; 16 or 20 hours a week. Pr., 200, 201, 210 (I, II, and III), or equivalents; a case work course concurrently.
210. **Field Work: Family V.** A,W,S. (†) Staff.
Advanced field work practice in a family welfare case working agency; 16 or 20 hours a week. Pr., 200, 201, 210 (I, II, III, and IV), 212, 218, or equivalents; or permission.
211. **Introduction to Child Welfare.** W. (3) Crounse.
Discussion of provisions for health, education, recreation, and protection of children. Methods of caring for neglected, dependent, delinquent, and handicapped child. Care of child in his own home, in institutions, and in foster homes.

†To be arranged.

212. **Social Case Work with Children.** S. (3) Crounse.
Application of case work principles to children without normal parental care. Pr., 200, 201, and 211, or equivalents.
- *213. **Social Aspects in the Treatment of the Behavior Disorders of Children.**
- *214. **Psychiatric Aspects in the Treatment of the Behavior Disorders of Children.**
215. **Field Work: Child Welfare I.** A,W,S. (4 or 5) Staff.
Field work practice in a children's case working agency; 16 or 20 hours a week. Pr., 200, 201, 210 (I and II), and 211; and 212 concurrently; or equivalents, or permission.
215. **Field Work: Child Welfare II.** A,W,S. (†) Staff.
Field work practice in a children's case working agency; hours to be arranged. Pr., 215 (I) or equivalent; a case work course concurrently.
215. **Field Work: Child Welfare III.** A,W,S. (†) Staff.
Field work practice in a children's case working agency; hours to be arranged. Pr., 215 (I and II), or equivalents.
215. **Field Work: Child Welfare IV.** A,W,S. (†) Staff.
Field work practice in a children's case working agency; hours to be arranged. Pr., 215 (I, II, and III), or equivalents.
216. **Psychiatric Information for Social Workers I.** W. (2) Hoedemaker.
Factors affecting growth and development of personality from infancy to old age. Interrelationships of physical, emotional, intellectual, and environmental factors in human behavior and some of the social psychiatric principles involved. Pr., 10 credits in sociology and psychology.
217. **Psychiatric Information for Social Workers II.** S. (2) Hoedemaker.
Causes, diagnosis, and treatment of mental and nervous disorders and deficiencies with emphasis upon purposiveness of behavior and interaction of organic, emotional, and environmental factors. Pr., 216, or equivalent.
218. **Social Case Work with Psychiatric Interpretation.** S. (3) Smart.
Critical analysis of causative factors in human behavior as a basis for understanding and treatment, with psychiatric interpretation. Consideration of field of psychiatric social work. Pr., 200, 201, 211, and 216, or equivalents; and 217, or equivalent, past or concurrently.
- *220. **Psychiatry in Relation to Case Work.**
- **230. **Field Work: Juvenile Probation and Parole I.** A,W,S. (4 or 5) _____.
Supervised field work practice in an agency dealing with problems of juvenile delinquency; 16 or 20 hours a week. Pr., 200, 201, 210 (I and II), and 211, or equivalents; and an advanced case work course concurrently.
- **230. **Field Work: Juvenile Probation and Parole II.** A,W,S. (3 to 5) _____.
Supervised field work practice in an agency dealing with problems of juvenile delinquency; 12, 16, or 20 hours a week. Pr., 200, 201, 210 (I and II), 211, 230 (I), or equivalents.
- **230. **Field Work: Juvenile Probation and Parole III.** A,W,S. (3 to 5) _____.
Supervised field work practice in an agency dealing with problems of juvenile delinquency; 12, 16, or 20 hours a week. Pr., 200, 201, 210 (I and II), 211, 230 (I and II), or equivalents.
231. **Medical Information for Social Workers.** A. (3) Dorman, members of King County Medical Society.
Elementary concepts of health, medicine, and diseases which most frequently incapacitate individuals of various age groups; significance of symptoms and effects of disease upon social treatment. Pr., 200, past or concurrently.
233. **Introduction to Medical Social Work.** W. (2) Dorman.
Medical social aspects of relief and case work with emphasis upon interrelationship of medical and social factors; survey and use of medical resources. Pr., 200, 201, and 231, or equivalents.

*Not offered in 1940-1941.

†To be arranged.

††To be offered if arrangements are completed.

246. **Seminar: Supervision in Social Case Work.** A,W,S. (2 or 3) ———. Discussion; consideration of role of supervision in developing worker's insight and skills in dealing with case situations, and in stimulating growth processes in the worker. Pr., 200, 201, 210 (I and II), 212 or 218, and 210 (III) or 215 (I), or equivalents, experience, and permission.
251. **Introduction to Public Welfare.** A. (3) Witte. Development of public responsibility for care of dependent, sick, physically and mentally handicapped, and delinquent in England, the Continent, and United States. Special attention to evolution of methods of state care for special groups.
252. **Public Welfare Administration: Federal and State.** W. (3) Witte. State and federal organization for public welfare, present day policies, division of authority and responsibility, methods of cooperation. Organization and methods of administration of public welfare services and Social Security Act and plans for reorganization. Pr., 251 or equivalent.
253. **Public Welfare Administration: Local.** S. (3) Witte. Possible types of local public welfare organizations. Functions, internal organization, and policies of county welfare units. Relations to other local agencies of government. State-county relationships, and financing. Type and character of local rural organization in Washington and other selected states. Pr., 251 and 252, or special permission.
257. **Social Aspects of the Law.** S. (5) ———. Discussion and study of case law and statutes relating to those fields of law which are of greatest concern to the social worker, such as familial relations, child dependency, delinquency, contractual relationships.
260. **Administration of Social Agencies.** W. (3) Hall. Administration as it relates to executive, staff, and board; policy making; budgeting; public relations; committee management.
266. **Administration of the Social Insurances.** S. (3) Witte. Underlying theory, organization, and administration of workmen's accident, old age, and unemployment insurances in the U. S. Relationship of social insurances to other programs of public welfare. Pr., permission of the director.
- **269. Field Work: Social Insurance Administration I.** A,W,S. (4 or 5) ———. Supervised field work practice in a public agency administering one or more of the social insurances; such as, workmen's accident insurance, old age insurance, or unemployment insurance; 16 or 20 hours a week. Pr., permission of the director.
- **269. Field Work: Social Insurance Administration II.** A,W,S. (3 to 5) ———. Supervised field work practice in a public agency administering one or more of the social insurances, such as workmen's accident insurance, old age insurance, or unemployment insurance; 12, 16, or 20 hours a week. Pr., 269 (I) and permission of the director.
270. **Field Work: Public Welfare Administration I.** A,W,S. (3 to 5) ———. Supervised field work practice in an administrative capacity in a public welfare agency; 12, 16, or 20 hours a week. Pr., major in public welfare administration, and permission.
270. **Field Work: Public Welfare Administration II.** A,W,S. (3-5) ———. Supervised field work practice in an administrative capacity in a public welfare agency; 12, 16, or 20 hours a week. Pr., major in public welfare administration, 270 (I) or equivalent, and permission.
271. **Introduction to Social Group Work.** S. (3) Spence. Principles and procedures in group work as a basic approach and method in social work, and application of these methods to various types of groups with which the social worker has contact.
276. **Community Planning.** A. (3) Steiner. Community movement. Emphasis upon organization of community forces in interests of social welfare.

****To be offered if arrangements are completed.**

278. **Seminar in Social Work Interpretation.** S. (2 or 3) _____
Philosophy of publicity for social work; study of methods of publicizing work of social agencies; planning agency publicity programs; use of research and statistical material in agency publicity. Students will prepare sample publicity material for study and analysis. Pr., permission.
280. **Field Work: Community Planning and Interpretation I.** A,W,S. (3 to 5) _____
Supervised field work practice in a public or private agency engaged in community organization and interpretation; 12, 16, or 20 hours a week. Pr., 200, 201, 210 (I and II), or equivalents; an advanced case work course, past or concurrently; or permission.
280. **Field Work: Community Planning and Interpretation II.** A,W,S. (3 to 5) _____
Supervised field work practice in a public or private agency engaged in community organization and interpretation; 12, 16, or 20 hours a week. Pr., 200, 201, 210 (I and II), and 280 (I), or equivalents.
- 281, 282*, 283*. **Community Research.** A. (†) **Steiner.**
Original investigation of special community problems related to social work. Pr., permission. Hours to be arranged.
- 284, 285, 286. **Research in Public Welfare.** A,W,S. (†, †, †) **Staff.**
A course for students competent to carry on research dealing with special administrative problems. Pr., permission. Hours to be arranged.
- 288, 289, 290. **Thesis Research.** A,W,S. (†, †, †) **Staff.**
Supervised research for students writing theses for advanced degrees. Periodical group discussions are held regarding common problems. Pr., permission; 288 pr. to 289, and 289 pr. to 290.
- 291, 292, 293, 294.* **Seminar.** A,W,S. (†, †, †) **Staff.**
Open to graduate students capable of conducting independent investigations. Pr., permission. Hours to be arranged.
295. **Current Topics in Social Work.** S. (0) **Witte.**
Consideration of current topics in field of social work, particularly as they are discussed in current literature. Pr., permission of the director.
296. **Seminar: Historical Backgrounds of Social Work.** W. (3) **Witte.**
Philanthropy and social reform since sixteenth century, with special attention to nineteenth century movements and their influence upon present methods, purposes, and tendencies.
297. **Seminar in Professional Ethics.** A. (2 or 3) **Witte.**
Ethical principles and professional practices of related fields of medicine, law, nursing, teaching, the ministry, and business. Development of interest in the professional nature of social work and its ethical concepts. Pr., permission.
- The Field of Social Work.** (See Sociology 128.)

ZOOLOGY AND PHYSIOLOGY

Professors Kincaid, Guberlet; Associate Professors Hatch, Svihla; Assistant Professor Martin; Instructors Goodsell, Crescitelli.

Zoology

1. **Animal Biology.** A,W. (5) **Kincaid, Hatch, assistants.**
Survey of the more general aspects of animal life.
2. **General Zoology.** W,S. (5) **Kincaid, Hatch, assistants.**
Survey of the animal kingdom, stressing structure, classification, and economic relations. Pr., 1 or equivalent.
- 3-4. **Pre-Medical Zoology.** A,W. (5-5) **Guberlet, assistants.**
For students entering a medical course.

*Not offered in 1940-1941.

†To be arranged.

5. **General Embryology.** S. (5) Guberlet.
Comparative developmental history of animals, with emphasis on vertebrate forms. Pr., 1, 2 or 3-4.
8. **Survey of Zoology.** S. (5) Svihla.
Elementary facts and principles basic to the field of zoological science. Students who expect to continue with zoology should begin with 1, 2 or 3-4.
16. **Evolution.** A. (2) Kincaid.
Lectures on the more important biological problems related to the general theory of evolution.
17. **Eugenics.** W, S. (2) Kincaid.
Principles of evolution in their relation to human welfare.
101. **Cytology.** W. (5) Svihla.
Structure and activities of the animal cell with special reference to problems of development, sex-determination, and heredity. Pr., 1, 2, or 3-4.
- *102. **Experimental Zoology.**
106. **Plankton.** A. (5) Kincaid.
Classification, adaptations and interrelationships of the microscopic fauna of the sea. Field work in Puget Sound. Pr., 1, 2 or 3-4.
107. **Parasitology.** S. (5) Guberlet.
Animal parasites. Pr., 1, 2 or 3-4.
108. **Limnology.** S. (5) Kincaid.
Classification and interrelationship of organisms found in lakes and streams. Field work in neighboring fresh-water bodies. Pr., 1, 2 or 3-4.
111. **Entomology.** S. (5) Hatch.
Structure, classification, and economic relations of insects. Pr., 1, 2 or 3-4 or equivalent.
121. **Microscopic Technique.** W. (3) Guberlet.
Methods of imbedding, sectioning and staining animal tissues. Pr., 1, 2 or 3-4 or equivalent.
- 125, 126. **Invertebrate Zoology.** A, W. (5, 5) Hatch.
Structure, classification, and ecology of invertebrate animals. Pr., 1, 2 or 3-4.
- 127-128. **Comparative Anatomy.** A, W. (5-5) Svihla.
Comparative morphology of the vertebrate animals. Pr., 1, 2 or 3-4.
- 129, 130. **Vertebrate Zoology.** S, A. (5, 5) Svihla.
Taxonomy, morphology, and ecology of vertebrates. Pr., 1, 2 or 3-4.
131. **History of Zoology.** A. (2) Hatch.
History of zoology during ancient, medieval, and modern times. Pr., 20 credits of zoology.
- 135, 136, 137. **Museum Technique.** A, W, S. (3, 3, 3) Flahaut, staff.
Methods of preparing skins of birds and mammals, and other specimens for museum use. Pr., permission of instructor.
- 155, 156, 157. **Elementary Problems.** A, W, S. (3, 3, 3) Staff.
Students will be assigned minor problems under direction of an instructor. Pr., 30 credits in zoology and instructor's permission.
- Teachers' Course in Zoology.** (See Educ. 75Z.)

Courses for Graduates Only

- 201, 202, 203. **Research.** A, W, S. (†) Staff.
Students capable of carrying on independent work will be assigned problems under direction of an instructor. Pr., 25 credits in zoology.
- 205, 206, 207. **Advanced Problems.** †. (†) Staff.
Especially for graduate students working for doctor's degree.
- 210, 211, 212. **Seminar.** A, W, S. (1, 1, 1) Staff.
Reports and discussions of current zoological literature and other special topics.
- 213, 214, 215. **Advanced Invertebrate Embryology.** A, W, S. (3, 3, 3) Guberlet.
Development and life history of invertebrate animals, particularly of marine forms; life history of parasites of marine fishes. Pr., 5, 106, 126.

*Not offered in 1940-1941.

†To be arranged.

Physiology

7. **Elementary Physiology.** A,W,S. (5) Goodsell, Crescitelli.
Introduction to the structure and functions of the human body.
11. **Survey of Physiology.** A, S. (5) Martin, Crescitelli.
Broad outline of the functions of living organisms, with particular stress on the human. Four lectures and one quiz.
50. **Physiology.** W. (6) Crescitelli.
Summary of physiological principles with emphasis on the mechanisms of adjustment in the human. Required of students majoring in physical education.
- 53, 54. **Intermediate Physiology.** A,W,S. (5, 5) Goodsell.
Adapted for students expecting to teach the subject in high school. Required of nursing majors. Recommended for students in dietetics and sanitary science.
115. **General Physiology.** A. (3 or 5) Crescitelli.
Qualitative and quantitative study of fundamental principles. Pr., Chem. 2 or 22.
139. **Comparative Physiology.** W. (5) Crescitelli.
Physiological principles illustrated by the study of invertebrate material. Designed particularly to meet the needs of zoology majors. Pr., 7, or Zool. 126 and 128.
- 151, 152, 153. **Advanced Physiology.** A,W,S. (5, 5, 5) Martin.
Extensive study of human physiology for physiology majors and advanced students in related fields. Pr., 2 or 5, Chem. 2 or 22.
- 155, 156, 157. **Elementary Problems.** A,W,S. (3, 3, 3) Staff.
Students will be assigned minor problems under direction of an instructor in the department. Pr., 20 credits in physiology and instructor's permission.
163. **Physiology of Metabolism.** S. (3 or 5) Martin.
Advanced studies in digestion, absorption, and metabolism. Pr., 10 credits in human physiology; Chem. 2 or 22.
173. **Physiology of Endocrine Organs.** A. (3 or 5) Goodsell.
Functions and interrelationships of the endocrine glands. Pr., ten credits in human physiology and instructor's permission.

Courses for Graduates Only

- 201, 202, 203. **Research.** A,W,S. (†) Staff.
Students capable of carrying on independent work may be assigned problems under the direction of an instructor. Pr., 20 credits in physiology.
- 210, 211, 212. **Seminar.** A,W,S. (1, 1, 1) Staff.

†To be arranged.

SUMMARY OF DEGREES, DIPLOMAS AND CERTIFICATES GRANTED

1939-1940

BACHELOR'S DEGREES

Bachelor of Arts (College of Arts and Sciences)	637
Bachelor of Arts (College of Education)	67
Bachelor of Arts in Economics and Business	203
Bachelor of Arts in Education	37
Bachelor of Arts in Home Economics	1
Bachelor of Arts in Journalism	1
Bachelor of Arts in Law Librarianship	2
Bachelor of Arts in Librarianship	32
Bachelor of Arts in Music	19
Bachelor of Architecture	15
Bachelor of Laws	62
Bachelor of Science (College of Arts and Sciences)	180
Bachelor of Science (College of Education)	17
Bachelor of Science in Aeronautical Engineering	18
Bachelor of Science in Anatomy	1
Bachelor of Science in Bacteriology	7
Bachelor of Science in Botany	3
Bachelor of Science in Ceramic Engineering	2
Bachelor of Science in Chemical Engineering	21
Bachelor of Science in Chemistry	31
Bachelor of Science in Civil Engineering	52
Bachelor of Science in Commercial Engineering	14
Bachelor of Science in Education	3
Bachelor of Science in Electrical Engineering	32
Bachelor of Science in Food Technology	1
Bachelor of Science in Fisheries	23
Bachelor of Science in Forestry	71
Bachelor of Science in Home Economics	17
Bachelor of Science in Mathematics	3
Bachelor of Science in Mechanical Engineering	30
Bachelor of Science in Metallurgical Engineering	1
Bachelor of Science in Mining Engineering	7
Bachelor of Science in Nursing	48
Bachelor of Science in Pharmacy	35
Bachelor of Science in Physics	1
TOTAL	1694

ADVANCED AND PROFESSIONAL DEGREES

Master of Arts	77
Master of Arts in Music Education	2
Master of Business Administration	2
Master of Education	4
Master of Fine Arts	3
Master of Science in Home Economics	1
Master of Music	1
Master of Nursing	2
Master of Science	17
Master of Science in Ceramic Engineering	1
Master of Science in Chemical Engineering	7
Master of Science in Civil Engineering	2
Master of Science in Electrical Engineering	1
Master of Science in Forestry	1
Master of Science in Mining Engineering	2
Master of Science in Nursing	2
Master of Science in Pharmacy	5
Master of Science in Physical Education	3
Professional Degree, Ceramic Engineer	1
Professional Degree, Civil Engineer	2
Professional Degree, Electrical Engineer	1
Professional Degree, Engineer of Mines	1
Doctor of Philosophy	34
TOTAL	172

DIPLOMAS AND CERTIFICATES

Certificate in Nursing Supervision	15
Certificate in Public Health Nursing	40
University Three-Year Normal Diploma	288
TOTAL	343

SUMMARY OF ENROLLMENT, 1939-1940

I. BY SCHOOLS AND COLLEGES

SCHOOLS AND COLLEGES	SUMMER QUARTER			AUTUMN QUARTER	WINTER QUARTER	SPRING QUARTER	TOTAL INDIVID. ACAD. YR.
	1st Term	2nd Term	Total Individuals				
	1	2	3	4	5	6	7
Arts and Sciences...	1327	1200	1477	6219	6083	5614	7058
Men.....	405	364	437	2913	2894	2624	3346
Women.....	922	836	1040	3306	3189	2990	3712
Econ. & Business...	129	122	136	1401	1366	1200	1566
Men.....	108	108	115	1202	1174	1037	1354
Women.....	21	14	21	199	192	163	212
Education.....	422	309	500	140	132	116	162
Men.....	110	91	125	82	74	64	94
Women.....	312	218	375	58	58	52	68
Engineering.....	80	39	81	1311	1314	1126	1462
Men.....	80	39	81	1309	1311	1125	1460
Women.....	..	..	..	2	3	1	2
Forestry.....	13	13	13	272	267	237	302
Men.....	13	13	13	272	267	237	302
Women.....	..	..	..	..	..	..	..
Graduates.....	1317	1049	1451	839	922	843	1099
Men.....	694	597	752	479	557	517	637
Women.....	623	452	699	360	365	326	462
Law.....	51	51	51	203	188	179	209
Men.....	48	48	48	190	175	169	195
Women.....	3	3	3	13	13	10	14
Mines.....	1	1	1	81	86	72	93
Men.....	1	1	1	81	86	72	93
Women.....	..	..	..	..	..	..	..
Pharmacy.....	10	8	10	196	200	196	211
Men.....	8	6	8	157	158	157	171
Women.....	2	2	2	39	42	39	40
TOTALS.....	3350	2792	3720	10,662	10,558	9583	12,162
Men.....	1467	1267	1580	6685	6696	6002	7652
Women.....	1883	1525	2140	3977	3862	3581	4510

NOTE: The number of individuals in column 7 is based upon the classification of the autumn quarter to which is added the new students entering the same classification for the first time for the winter and spring quarters. In this column, students who have changed their classification during the year are counted as of their first classification.

SUMMARY OF ENROLLMENT, 1939-1940

II. BY CLASSES

CLASSES	SUMMER QUARTER			AUTUMN QUARTER	WINTER QUARTER	SPRING QUARTER	TOTAL INDIVID. ACAD. YR.
	1st Term	2nd Term	Total Individuals				
	1	2	3	4	5	6	7
Freshmen.....	128	111	137	3121	2868	2509	3576
Men.....	57	43	61	1949	1789	1515	2239
Women.....	71	68	76	1172	1079	994	1337
Sophomores.....	258	230	274	2434	2425	2160	2723
Men.....	103	88	111	1463	1490	1309	1668
Women.....	155	142	163	971	935	851	1055
Juniors.....	458	403	499	2115	2092	1918	2346
Men.....	179	162	184	1387	1382	1254	1539
Women.....	279	241	315	728	710	664	807
Seniors.....	688	612	754	1953	2049	1984	2155
Men.....	277	241	292	1250	1323	1280	1386
Women.....	411	371	462	703	726	704	769
Graduates.....	1360	1092	1494	985	1050	963	1251
Men.....	735	638	793	613	674	628	776
Women.....	625	454	701	372	376	335	475
Specials.....	20	20	20	54	74	49	111
Men.....	6	6	6	23	38	16	44
Women.....	14	14	14	31	36	33	67
Transients.....	438	324	542	..	..	..	..
Men.....	110	89	133	..	..	..	..
Women.....	328	235	409	..	..	..	..
TOTALS.....	3350	2792	3720	10,662	10,558	9583	12,162
Men.....	1467	1267	1580	6685	6696	6002	7652
Women.....	1883	1525	2140	3977	3862	3581	4510

NOTE: The number of individuals in column 7 is based upon the classification of the autumn quarter to which is added the new students entering the same classification for the first time for the winter and spring quarters. In this column, students who have changed their classification during the year are counted as of their first classification.

TOTAL STUDENTS IN RESIDENCE

During regular academic year.....	12,162
During summer quarter.....	3,720
TOTAL.....	15,882
Deduct summer duplicates.....	767
Men.....	406
Women.....	361
Individuals (Academic year and summer).....	15,115

EXTENSION STUDENTS

Classes.....	2,146
Men.....	636
Women.....	1,510
Home Study.....	1,049
Men.....	681
Women.....	368
TOTAL.....	3,195

INDEX

- Absence, leave of, 65.
- Accredited schools, admission from, 51.
- Administration, officers of, 11; administrative boards, 15.
- Admission to the University, 51; as an auditor, 54; by certificate of high school graduation, 51, 53; by examination, 53; advanced undergraduate standing, 53; graduate standing, 54, 150; requirements of different colleges, 52; to Extension courses, 56.
- Admission from accredited schools, 51, 53.
- Admission from schools outside of Washington, 53; of foreign students, 54.
- Admission to the Colleges, 52; Arts and Sciences, 79; Economics and Business, 127; Education, 131; Engineering, 138; Forestry, 147; Mines, 154; Pharmacy, 157.
- Advanced credit examination, 55.
- Advanced standing, 53; by examination, 55.
- Aeronautical Engineering, 139; courses, 161.
- Alumni Association, 75; officers, 10.
- Anatomy (see Biological Sciences); courses, 162.
- Anthropology, 81; courses, 162.
- Application for degrees, 61.
- Architecture, 82; courses, 164.
- Art, 83; courses, 166.
- Art Gallery, 49.
- Arts and Law curriculum, combined, 122.
- Arts and Sciences, college of, 79; curricula, 80; entrance requirements, 79; departments of: anatomy, 81; anthropology, 81; architecture, 82; art, 83; bacteriology, 86; biological sciences, 87; botany, 88; chemistry, 88; classical languages and literature, 90; economics, 91; English, 91; fisheries, 95; food technology, 95; general literature, 96; general studies, 96; geography, 97; geology, 97; Germanic languages and literature, 98; history, 99; home economics, 100; journalism, 103; librarianship, 107; mathematics, 108; music, 109; nursing education, 113; Oriental studies, 116; philosophy, 117; physical and health education, 117; physics, 121; physiology, 127; political science, 122; pre-education, 122; pre-law, 122; pre-library, 123; pre-medicine, 124; psychology, 125; Romanic languages and literature, 125; Scandinavian languages and literature, 126; sociology, 126; zoology, 127.
- Associated Students, 75; fees, 57.
- Associations and clubs, 75; alumni, 75; associated students, 75.
- Astronomy, courses, 169.
- Auditors, 54.
- Aviation, training course, 241.
- Awards, honor, 67.
- Bacteriology, 86; courses, 169.
- Biological sciences, 87.
- Board of Regents, 10.
- Board and room, 61, 73.
- Boards and committees, 15.
- Botany (see Biological Sciences), 88; courses, 170.
- Breakage ticket deposit, 60.
- Bureau of Appointments, 131; fee, 60.
- Bureau of Mines, Experiment Station, 14.
- Calendar, 8.
- Campus map, 2.
- Ceramics, courses, 236; curriculum, 156.
- Certification of credits from unaccredited schools, 60.
- Change of registration fee, 60.
- Chemistry, 88; courses, 173.
- Chemical engineering, 141; courses, 175.
- Child Welfare, Gatzert Foundation, 49.
- Chinese (see Oriental Studies), 116; courses, 246.
- Civil Engineering, 140; courses, 177.
- Classical Languages and Literature, 90; courses, 180.
- Clubs, 75.
- Coffee Shop, 61.
- College, definition of, 50.
- College Entrance Examination Board, 53.
- College of Arts and Sciences (see Arts and Sciences).
- Commencement exercises, 62.
- Commercial engineering, 141.
- Committees, of the Board of Regents, 10; of the faculty, 15; of the University Senate, 15.
- Commons, University, 61.
- Composition, 93; courses, 197.
- Contents, 5.
- Correspondence courses (Extension Service), 56.
- Courses, definition of, 50.
- Credits, certification of, 60.
- Credits, definition of, 50.
- Curricula: art, 83; economics and business, 128; education (see academic departments under College of Arts and Sciences), 131; engineering, 139; forestry, 147; home economics, 100; journalism, 103; librarianship, 107; mines, 155; music, 109; nursing, 113; pharmacy, 157; physical education and hygiene, 117; pre-law, 122; pre-medical, 124; special, 50.
- Curriculum, definition of, 50.
- Danish, 126; courses, 266.
- Dean of Men, 75.
- Dean of Women, 75.
- Definitions and explanations, 50.
- Degree, application for, 61; requirements for, 62.
- Degrees with honor, 62; honorary, 61; two at the same time, 62; summary of degrees granted, 276.
- Degrees: arts and sciences (see academic departments under College of Arts and Sciences), 79-127; economics and business, 128 ff.; education, 131; engineering, 137, 139; forestry, 147; graduate, 151 ff.; pharmacy, 155; technical, 154.
- Delinquencies, financial, 61.
- Department, definition of, 50.
- Descriptions of Courses, 160; aeronautical engineering, 161; anatomy, 162; anthropology, 162; architecture, 164; art, 166; astronomy, 169; aviation, 241; bacteriology, 169; botany, 170; ceramics, 236; chemistry, 173; chemical engineering, 175; civil engineering,

INDEX—(Continued)

- 177; classical languages, 180; economics and business, 184; education, 190; electrical engineering, 194; English, 196; fisheries, 204; forestry, 205; general engineering, 208; general literature, 208; general studies, 208; geography, 209; geology, 211; German, 213; graduate school of social work, 270; history, 216; home economics, 219; journalism, 223; law, 224; liberal arts, 227; librarianship, 227; mathematics, 228; mechanical engineering, 231; metallurgy, 235; military science, 232; nursing education, 242; oceanographic laboratories, 245; oriental studies, 246; pharmacy, pharmaceutical chemistry, materia medica and food chemistry, 248; philosophy, 250; physical and health education, 251; physics, 255; physiology, 274; political science, 257; psychology, 261; Romanic languages, 262; Scandinavian languages, 266; sociology, 267; zoology, 273.
- Design (see Art), 83; courses, 166.
- Diploma fee (see graduation fee).
- Diplomas, normal, 133 f.; summary of, 276.
- Dismissal (see withdrawal), 65.
- Doctor's degree, 151.
- Domicile, definition of, 58.
- Dormitories, University, 61, 73.
- Drama, 92; courses, 198.
- Economics, 137.
- Economics and Business, College of, 127; requirements for admission, 127; courses, 184; curricula, 185; economics majors in the College of Arts and Sciences, 91.
- Education, College of, 131; requirements, 131; admission, 132; certification, 133; courses, 190; curricula (see also academic departments under College of Arts and Sciences), 136; graduation, 133; requirements for normal diploma, 133; administrative requirements in accredited districts, 134.
- Electrical engineering, 142; courses, 194.
- Eligibility for activities, 76.
- Employment, student, 73.
- Endowment and support of the University, 49.
- Engineering, College of, 137; admission, 138; curricula, 139; courses: aeronautical engineering, 161; chemical engineering, 175; civil engineering, 177; electrical engineering, 194; general engineering, 208; mechanical engineering, 231.
- Engineering Experiment Station, 14; publications of, back cover.
- English, 91; courses, 196; literature, 92.
- Enrollment, summary of, 277, 278.
- Entrance information, 51.
- Equipment, University, 49.
- Excuses for absence, 65.
- Examination, entrance, 53; advanced credit by, 55; absence from, 64; final, 64.
- Examination Board, College Entrance, 53.
- Exemptions from fees, 59.
- Expenses, section on, 57 ff.; living costs, 61.
- Extension Service, 56.
- Faculty, alphabetical list, 18; committees, 15.
- Fees: Advanced credit examination, 55; A.S.U.W., 57; auditor's, 57; botany field trip, 57; breakage ticket deposit, 60; certification of credits, 60; change of registration, 60; diploma, 60; exemptions from, 59; golf, 251; grade sheet, 60; graduation, 60; incidental, 57; law library, 57; late registration, 59; locker, 60; medical examination, 60; military uniforms, deposit and refund for, 145; music, 237; nurses', 57; part-time, 57; payment of, 59; printing and thesis binding, 60; refund, 59; riding, 251; special examinations, 55, 60; thesis binding, 60; thesis registration only, 57; transcript, 60; tuition, 57.
- Fellowships: Agnes Healy Anderson, 68; Bon Marche Industrial, 68; Arthur A. Denny, 67; Sarah Loretta Denny, 67; National Research, 72; Research, 68; University Honorary, 68; University, 68.
- Financial delinquencies, 61.
- Fisheries, courses, 204; curriculum, 94.
- Foreign students, admission of, 54.
- Forestry, College of, 147; admission, 147; courses, 205; curricula, 147.
- Four-quarter System, 50.
- Fraternity and Sorority pledging, 77.
- French (Romanic Languages), 125; courses, 262.
- Freshman standing, admission to, 51.
- Freshman Days, 55.
- Gatzert Foundation, 49.
- General engineering, courses, 208.
- General information, 51-78.
- General Literature, 96; courses, 208.
- General Studies, 80, 96; courses, 208.
- Geography, courses, 209; curriculum, 97.
- Geology, courses, 211; curriculum, 97.
- Germanic Languages and Literature, 98; courses, 213.
- Golf fees, 251.
- Government, of the University, 50.
- Grade average, high school, 51.
- Grade points, 65.
- Grades, 65; change of, 67.
- Grade sheet fee, 60.
- Graduate fellowships (see Fellowships).
- Graduate School, 150; admission, 150; courses (see Description of Courses section); degrees, 151; degrees conferred, 276.
- Graduation, requirements for, 61.
- Graduation fee, 60.
- Greek (Classical Languages), 90; courses, 180.
- Grounds, University, 2.
- Guidance, personal and vocational, 75.
- Health Education, 119.
- Health Service, University, 74; officers, 14.
- Henry, Horace C., Gallery of Fine Arts, 49; officers, 14.
- History, 99; courses, 216.
- History of the University, 49.
- Home Study courses, 56.
- Home Economics, courses, 219; curricula, 100.
- Honor Awards, 67; graduates in Military Science, 144.
- Housing, 73.

INDEX—(Continued)

- Hygiene (Physical Education), courses: men, 251; women, 251; curricula, 117.
- Hypens, course numbers connected by, 50.
- Incidental fee, 57.
- Incomplete, definition of, 67; removal of, 67.
- Infirmiry, University (see Health Center).
- Italian (Romanic Languages), 125; courses, 264.
- Journalism, 103; courses, 223.
- Laboratory fees (see breakage ticket).
- Languages (see Classical Languages, English, Germanic, Oriental Studies, Romanic, Scandinavian).
- Late registration fine, 59.
- Latin (Classical Languages), 90; courses, 181.
- Law library, fee, 57; staff, 12.
- Law, School of (see Bulletin of the Law School); courses, 224.
- Law and arts course (combined), 122; Law and science course (combined), 123; pre-law, in College of Arts and Sciences, 122.
- Leaves of absence, 65.
- Liberal arts, courses, 227.
- Librarianship (see Bulletin of the School of Librarianship); courses, 227.
- Libraries, 49; rules, 76; staff, 12.
- Literature, General, department of, 96; courses, 208; (see also departments of Classical Languages, English, Germanic Languages, Oriental Studies, Romanic Languages, Scandinavian Languages).
- Living costs, 61.
- Loan funds, 74.
- Locker fee, 60.
- Lower division, definition of, 50.
- Major, definition of, 50.
- Map of University's grounds, 2.
- Master's degree, 153.
- Mathematics, 108; courses, 228.
- McDermott Foundation, 49.
- Mechanical engineering, 143; courses, 231.
- Meetings, student clubs, 77.
- Metallurgy, 156; courses, 235.
- Military Science, department of, 144; courses, 232; requirements, 62.
- Mines, College of, 154; admission, 154; courses, 235; curricula, 155; degrees, 54.
- Mining engineering, 156; courses, 235.
- Mining and metallurgical fellowships, 73.
- Museum, 49; staff, 14.
- Music, 109; courses, 237; curricula, 109.
- Naval aviation training, 241.
- Naval Science and Tactics, department of, 146; courses, 240; requirements, 63.
- Non-resident tuition fee, 58.
- Normal diplomas (see Certification), 133; granted, summary of, 276.
- Normal school graduates, admission of, 53; education requirements for, 132.
- Northwest Experiment Station, Bureau of Mines, 14.
- Norwegian (Scandinavian Languages), 126; courses, 266.
- Nursing education, department of, 113; courses, 242; fees, 57.
- Oceanographic Laboratories (see Bulletin of the Oceanographic Laboratories); staff, 14; courses, 245.
- Officers of Administration, 11.
- Organization of the University, 49.
- Organization of the student body, 75.
- Oriental Studies, 116; courses, 246.
- Out-of-state high schools, admission from, 53.
- Part-time fee, 57.
- Pathology (see Bacteriology).
- Payment of fees, 59.
- Pharmacy, College of, 154; admission, 157; courses, 248; curricula, 157; degrees, 155.
- Philosophy, 117; courses, 250.
- Physical and Health Education, 117; courses for men, 251; courses for women, 251; curricula, 117; professional courses for men and women, 252.
- Physics, 121; courses, 255.
- Physiology, courses, 274.
- Placement Bureau (see Bureau of Appointments).
- Plan of campus, 2.
- Pledging to fraternities and sororities, 77.
- Political Science, 122; courses, 257.
- Pre-dentistry, 124.
- Pre-education, 122.
- Pre-law, 122.
- Pre-library, 123.
- Pre-medical, 124.
- Prizes: Philo Sherman Bennett, 71; Vivian Carkeek, 71; Western Printing Company, 71; Junior Military prize and medals, 145; Ruth Nettleton, 71; Charles Lathrop Pack, 71; Lehn and Fink Medal, 71; Rho Chi Society, 72; Washington State D.A.R. Ada McCleary, 71; Frank Billings Kellogg, 71.
- Probation rule, 66.
- Psychology, 125; courses, 261.
- Public health nursing certificates, curriculum leading to, 115.
- Public speaking and debate (see English: speech).
- Publications, student, 78; University, back cover.
- Quarter System, 50.
- Refund of fees, 59.
- Regents, Board of, 10.
- Registrar, office of, 13; correspondence addressed to, 51.
- Registration, 56; dates, 56; late registration fine, 59; by mail, 56.
- Reinstatement, of dismissed students, 66.
- Repetition of courses, 67.
- Requirements for degrees, 61; entrance, 51.

INDEX—(Continued)

- Residence, 57.
- Riding fees, 251.
- Romanic Languages, 125; courses, 262.
- Rules and regulations: absence, leave of, 65; auditors, 54; degrees, application for, 61; degrees, two at one time, 62; examinations, 64; fraternities, 77; housing, 73; military science, 63; physical education, 63; probation, 66; scholarship, 61; senior residence, 61; sororities, 77; theses, 152; withdrawals, 65.
- Saturday classes, with resident credit, 56.
- Scandinavian, 126; courses, 266.
- Scholarship rules, 61.
- Scholarships: Beecher Kiefer Memorial, 76; Gamma Phi Beta, 69; University Graduate, 68; Isabella Austin, 69; Mu Phi Epsilon, 70; Paul Karschner Memorial, 71; William Mackay, 70; E. C. Neufelder, 68; City Panhellenic, 69; McKesson-Robbins Drug Co., 70; Auxiliary Washington State Pharmaceutical Association, 70.
- Scholastic regulations, 61.
- School, definition of, 50.
- Science and law course (combined), 123.
- Senior standing, definition of, 61.
- Senior year residence requirement, 61.
- Social Work, Graduate School of (see Announcement of the Graduate School for curricula); courses, 270.
- Sociology, 126; courses, 267.
- Sororities, pledging, 77.
- Spanish (Romanic Languages), 125; courses, 265.
- Speakers, student clubs, 77.
- Special curricula within the schools, 50.
- Special examinations (see Incompletes), 67; fees, 55, 60.
- Special students, 54.
- Speech, 93; courses, 202.
- State Chemist, 14.
- Student fees (see Expenses).
- Student loan funds, 74.
- Student employment, 73.
- Student publications, 78.
- Student welfare, 73.
- Summary of enrollment, 277.
- Summer Quarter (see Bulletin of the Summer Quarter).
- Swedish, 126; courses, 266.
- System of grades, 65.
- Theses, 62.
- Transcript, fee, 60.
- Transfer of credit, 53.
- Tuition (see Expenses), 57.
- Tutoring, 78.
- Unaccredited schools, admission from, 51.
- Unit, definition of, 50.
- University Commons, 61.
- University Senate, 16.
- U. S. Army Reserve Officers' Training Corps, 13.
- U. S. Bureau of Mines Northwest Experiment Station, 14.
- U. S. Naval Reserve Officers' Training Corps, 13.
- Upper division, definition of, 50.
- Vocational guidance, 75.
- Welfare, student, 73.
- Withdrawal, from a course, 65; from the University, 65.
- Zoology (see Biological Sciences); courses, 273.

BULLETIN
UNIVERSITY OF WASHINGTON

GENERAL SERIES

MARCH 2, 1940

No. 597

SCHOOL OF LAW
1940-1941



SEATTLE, WASHINGTON

Published weekly at Seattle, Washington, by the University of Washington from October to July, inclusive. No issues in August and September. Entered as second-class matter at Seattle, Washington, under the Act of August 24, 1912.

SCHOOL OF LAW

Administrative Officers

Lee Paul Sieg, Ph.D., LL.D.....*President of the University*
 Judson F. Falknor, B.S., LL.B.....*Professor of Law; Dean of the School of Law*

The Faculty, 1940-1941

Ayer, Leslie James, B.S., J.D.....	Professor of Law
Beardsley, Arthur Sydney, LL.B., B.S. (L.S.), M.A., Ph.D.....	Professor of Law and Law Librarian
Harsch, Alfred E., B.A., LL.B.....	Professor of Law
Luccock, Eugene C., A.B., LL.B., LL.M.....	Professor of Law
McAllister, Breck P., B.A., LL.B., Ph.D.....	Professor of Law
Nottelmann, Rudolph H., M.A., LL.B.....	Professor of Law
O'Bryan, Joseph Grattan, B.A., LL.D.....	Professor of Law
Richards, John W., B.A., LL.M., S.J.D.....	Professor of Law
Sholley, John Burrill, B.A., LL.B., J.S.D.....	Professor of Law
Martin, Charles Emanuel, Ph.D.....	Professor of Political Science
Levy, Ernst, LL.D.....	Professor of Law, History and Political Science
Shattuck, Warren L., B.A., LL.B., J.S.D.....	Associate Professor of Law
Sheffelman, S. Harold, LL.B., LL.B.....	Lecturer in Law
Thorgirson, O. B., LL.B.....	Lecturer in Law
McConahey, James M., M.S., LL.B., C.P.A.....	Lecturer in Accounting

Hoard, Mary, B.A., LL.B., LL.M., B.S. (L.S.)	<i>Cataloguer, Law Library</i>
Johnson, Martha	<i>Circulation Librarian</i>
	<i>Secretary of the Law School</i>

Organization and Equipment

General Statement. The School of Law was established in 1899. It is a member of the Association of American Law Schools organized in 1900 to set and maintain high standards of legal education, and comprised of the leading law schools of the country. The School of Law is approved by the Council on Legal Education and Admission to the Bar of the American Bar Association.

The object of the School of Law is to provide a thorough training in the law and to prepare students for practice in any state or jurisdiction where the Anglo-American legal system prevails. Particular attention is given to the statutes, the special doctrines of law, and the rules of practice that obtain in the State of Washington. The faculty is composed of twelve resident professional law teachers, who devote their entire time and energy to teaching, two lecturers in law, who are active practitioners at the Seattle bar, and one lecturer in accounting, who is a practicing Certified Public Accountant, as well as an instructor in the College of Economics and Business. The courses in practice are taught by men experienced at the Washington bar.

The Law Building. The School of Law occupies a separate building designed exclusively for Law School use.

The Library. The University Law Library contains 86,127 (January, 1940) volumes, including the decisions of all English and American courts of last resort, and the reported decisions of all lower courts. Extensive runs of the English, American, and colonial statutes are available, and all legal periodicals published in the English language are received.

State and United States Courts. The School of Law is located within a few minutes' ride of both the Federal and state courts sitting in Seattle.

The United States District Court is in session and trying cases almost constantly, and the United States Circuit Court of Appeals for the Ninth Circuit holds a session in Seattle each autumn. The superior court for King county with fifteen departments, the justice courts, the municipal police court and the juvenile court are in session in Seattle throughout the school year, and enable the student to witness the trial of actual cases. The Supreme Court of the State of Washington is situated within comparatively easy reach at Olympia and affords the student casual opportunity of hearing the argument of state appeals.

General Information

Quarter System. The quarter system prevails in the Law School. Each quarter is approximately 12 weeks in length. Credit is given usually on the basis of one credit representing a recitation or lecture one hour a week per quarter. The total hour value of courses prevailing in the schools of the Association of American Law Schools has been generally retained—*e.g.*, courses formerly given two hours a week per semester are given three hours a week per quarter under the quarter system.

Admission to the Bar. The University of Washington School of Law is by law the standard of approved law schools for admission to the bar of this State. Admission to the Washington Bar, however, is conditioned upon passing a state bar examination.

Instruction in Other Departments. Law students may elect studies, for which they are prepared, in other departments of the University without charge, provided, that such election does not interfere with their law studies. Before registering in other departments, the student must obtain written permission from the dean of the Law School.

Expenses

Resident Tuition Fee.....	each quarter	\$15.00
Non-Resident Tuition Fee.....	each quarter	50.00
Incidental Fee	each quarter	12.50
A.S.U.W. Fee.....	autumn quarter	5.00
	winter and spring quarters	2.50
Law Library Fee.....	each quarter	10.00

For graduate students, the payment of the A.S.U.W. fee is optional.

Admission

Students may not register until complete credentials from all schools formerly attended have been received and evaluated. It is recommended that admission credentials be submitted by July 15. The student who delays submission of his credentials handicaps himself unnecessarily. Owing to the congestion of correspondence during the weeks immediately preceding the opening of the quarter, it is often impossible to reply at once to letters and applications sent in during this period.

Regular Students. Admission to the School of Law is on a selective basis. In passing upon applications for admission, the following factors are taken into account: amount and character of pre-legal work, scholarship in pre-legal work, and special aptitude and fitness as evidenced by legal aptitude examination and personal interview with the dean of the Law School. Students contemplating entering the School of Law should fill in and submit application blanks, copies of which may be obtained from the dean's office.

Students transferring from other colleges and law schools should settle the question of their admission in advance. In all cases, complete transcripts of college and law work should be sent to the dean's office.

The following are the minimum requirements for admission:

(a) Candidates for the bachelor of laws degree must either (1) hold the degree of bachelor of arts or bachelor of science from the University of Washington, or an equivalent degree from a college or university of approved standing, or (2) have completed three years of college work, 135 quarter credits (exclusive of credits earned in non-theory courses in military or naval science, hygiene, domestic arts, physical education, vocal or instrumental music and similar courses) with a scholarship average of 2.50. Of the three years of academic work required for admission, not more than one year may be done by extension.

(b) Candidates for the bachelor's degree in arts or science or the degree of bachelor of arts in economics and business and the bachelor of laws degree under the combined curricula must have completed three years of college work, 138 quarter credits (exclusive of credits earned in non-theory courses in military or naval science, hygiene, domestic arts, physical education, vocal or instrumental music and similar courses), including the group requirements of the college concerned, with a scholarship average of 2.50.

Special Students. No person will be admitted as a special student in law unless he is 23 years of age and his general education is such as to entitle him to admission to the first year class in the University of Washington. Special students are admitted only in exceptional cases upon vote of the faculty and the number shall not exceed ten per cent of the average number of students admitted by the school as beginning regular law students during the two preceding years.

Attention is called to the fact that in order to be eligible to take the Washington State Bar examination, the student must have completed two years of college work prior to beginning his professional law study. Students intending to qualify for the Washington State Bar examination are, therefore, advised not to petition for admission as special students.

Degrees and Requirements for Graduation

Effective with the class which entered the Law School in the autumn quarter of 1938, the course leading to the bachelor of laws degree became a four-year course. The degree of bachelor of laws will thus be conferred on students who meet the requirements for admission to the school and who thereafter complete 168 quarter credits in professional law subjects, including the required courses, and who maintain over their entire law record a scholarship average of at least 2.00.

Honors. Those who maintain a uniformly distinguished record for excellence in their courses will receive the degree with honors.

Combined Curricula in Arts, Sciences, and Law. It is possible for students to obtain the bachelor's degree in arts or science or the degree of bachelor of arts in economics and business and the bachelor's degree in law in seven years.

To do this, the student must first complete, with a grade point average of 2.50, the three years' work in arts and sciences or in economics and business, a total of 138 academic credits, including the group requirements of the college. (For details of these requirements, see the College of Arts and Sciences or the College of Economics and Business sections in the University catalogue.) The student will then be admitted to the School of Law and upon completion of the

prescribed first year's work in law (42 credits) will be granted the college degree. Upon completing the remaining three years of professional law work, with the required scholarship average, he will be granted the bachelor of laws degree.

Students from other institutions entering this University with advanced standing may take advantage of this combined seven-year course, provided they are registered in the College of Arts and Sciences or the College of Economics and Business for at least one full year of work, and earn at least 45 credits in the University before entering the School of Law. This privilege will not be extended to normal school graduates attempting to graduate in two years, nor to undergraduates of other colleges who enter this University with the rank of senior.

Residence Requirement. The candidate for graduation must spend twelve quarters or their equivalent in residence at a law school which is a member of the Association of American Law Schools. The three quarters immediately preceding the conferring of the law degree must be spent in residence at the University of Washington Law School.

Advanced Standing. If, in addition to satisfying the entrance requirements for regular standing in the Law School, a student has earned credits by regular attendance for at least one academic year of not less than eight months in another law school which is a member of the Association of American Law Schools, 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 and not more than three years' credit will be allowed for it. The right is reserved to refuse credit in law in whole or in part, save upon examination, and credit once given may be withdrawn for poor work in the school. Candidates for admission with advanced standing should forward a transcript of their record in both pre-legal and law work. No credit is given for time spent in private reading, correspondence work or study in a law office.

Summer School

General Statement. Courses are offered each summer as a part of the regular instruction of the Law School. This work carries the same credit and counts toward a degree the same as the work of any other quarter. Ordinarily only second, third and fourth-year courses are offered. For a detailed program, see the announcement of summer session. By taking advantage of the summer work, students may shorten the period required for the law degree.

Miscellaneous Information

Washington Law Review. The *Washington Law Review* (with which has been combined the *Washington State Bar Journal*) is a legal publication issued quarterly each year under the direction of the law faculty with the assistance of a student board of 15 to 20 members chosen from the ablest students in the Law School. The *Review* serves as a medium of expression for the legal scholars of Washington and elsewhere and is devoted particularly to the interpretation, advancement, and harmonious development of the law. The *Review* contains scholarly articles by judges and lawyers and discussions of important recent court decisions by students in the Law School, based on thorough research. A place on the student editorial board is one of the goals of every earnest law student and the experience is invaluable to him in his later professional life.

The Order of the Coif. The Order of the Coif is a national honorary legal society with a chapter at this Law School. The order has for its pur-

pose the encouragement of scholarship and the advancement of the ethical standards of the legal profession. Membership in the order is dependent entirely upon the attainment of high scholastic standing. Each chapter annually elects from the senior law class a number of persons, not exceeding ten per cent of the class, ranking highest in scholarship.

The Carkeek Prize. The Vivian M. Carkeek cash prize of \$50 is awarded annually "for the best student contribution to *The Washington Law Review* on a point of Washington law, or any point of peculiar interest to Washington attorneys."

The Frank W. Baker Award. This annual award of \$250 is to be made "to the student in the Law School who shall prepare and submit to the Dean of the Law School the best thesis on a topic which will foster and promote an understanding of the duty of an American citizen to uphold and preserve the Constitution of the United States and the supremacy of the Supreme Court, and to counteract the tendency of students to succumb to the specious arguments of advocates of subversive doctrines."

Nathan Burkan Memorial Competition. The American Society of Composers, Authors and Publishers awards annually in each of the approved law schools of the country a prize of \$100 for the best paper by a graduating student on a subject within the field of Copyright Law.

The Shefelman Award. Mr. S. Harold Shefelman, of the Seattle Bar, offers annually a cash prize of \$100 to a student of superior scholarship in the Law School who assists the faculty with the Washington Annotations to the Restatement of the Law.

The Western Printing Company Prize. An award made annually to that student rendering the most valuable service to *The Washington Law Review*.

COURSES OF STUDY

FIRST YEAR

All first-year subjects are required

‡101. Contracts. A. (4); W, S. (3-3) Goble and Patterson, Cases on Contracts.	Shattuck.
‡102. Torts. A. (4); W, S. (3-3) Bohlen, Cases on Torts, 3rd ed.	Richards.
‡104. Property I. A, W, S. (3-3-3) Fraser, Cases on Property, Vols. I and II.	Harsch.
‡105. Criminal Law and Procedure. A, W. (3-3) Harno, Cases on Criminal Law, 2nd ed., supplemented by Washington statutes and cases.	O'Bryan.
112. Agency. S. (4) Steffen, Cases on Agency.	Ayer.
130. Legal Bibliography. W. (3) Beardsley, Legal Bibliography and the Use of Law Books.	Beardsley.

‡No examination for credit until completion of entire course.

SECOND YEAR

All second-year subjects are required

- ‡110. Sales. A,W. (3-3) Ayer.
Casebook to be announced.
111. Wills and Administration. S. (3) Richards.
Mechem and Atkinson, Cases on Wills and Administration, 2nd ed.
113. Domestic Relations. A. (3) Richards.
Shattuck, Washington Materials on Domestic Relations.
- ‡114. Equity. W,S. (4-4) Nottelmann.
Walsh, Cases on Equity.
- ‡115. Evidence. A,W. (4-4) Falknor.
Morgan and Maguire, Cases on Evidence.
- ‡116. Bills and Notes. W,S. (3-3) Sholley.
Aigler, Cases on Negotiable Paper and Banking.
119. Constitutional Law I. A. (5) Sholley.
Dowling, Cases on Constitutional Law.
127. Code Pleading. S. (3) O'Bryan.
Throckmorton, Cases on Code Pleading.

THIRD YEAR

All third-year subjects are required

117. Legal Administration and Ethics. W. (3) Shefelman.
Cheatham, Cases and Materials on the Legal Profession.
120. Constitutional Law II. A. (3) McAllister.
Casebook to be announced.
121. Administrative Law. S. (4) McAllister.
Casebook to be announced.
- ‡123. Property II. W,S. (3-3) Luccock.
Casebook to be announced.
- ‡126. Trusts. A,W. (3-3) Nottelmann.
Scott, Cases on Trusts, 2nd ed.
142. Practice and Procedure I. A. (3) O'Bryan.
McBaine, Cases on Trial Practice, supplemented by Washington Code of Procedure and Washington cases.
In 142 and 144, Moot Court meets once each week. Each student is required to bring his case to issue, introduce the evidence, and try the case before the court or jury.
144. Practice and Procedure III. W. and S. (3) O'Bryan.
Mechem and Atkinson, Cases on Wills and Administration, 2nd ed., supplemented by the Washington Probate Code and Washington cases.
- ‡145. Credit Transactions. A,W. (4-2) Shattuck.
Casebook to be announced.
- ‡149. Business Associations. W,S. (4-4) Ayer.
Ballantine and Lattin, Cases and Materials on the Law of Corporations. Cases assigned on other business organizations.

‡No examination for credit until completion of entire course.

FOURTH YEAR

Required Courses

- | | |
|--|--------------------|
| 118. Conflict of Laws. S. (5)
Cheatham, Dowling, Goodrich, Cases on Conflict of Laws. | Sholley. |
| 124. Community Property. S. (3)
Casebook to be announced. | Luccock. |
| 135. Legislation. W. (4)
Casebook to be announced. | Harsch. |
| 146. Taxation. A. (4)
Magill and Maguire, Cases on Taxation, 2nd ed., 1927. | McAllister. |
| 199. Seminars and Individual Research Courses.
Ten hours required of the following one-quarter seminars, each carrying five hours of credit. | |
| *199A. Trusts. | |
| 199B. Banking Law and Advanced Problems in Security. S. (5) | Shattuck. |
| *199C. Public Utility Regulation. | |
| *199D. Income Taxation. | |
| *199E. Corporate Reorganization. | |
| *199F. Corporation Practice. | |
| *199G. Comparative Law. | |
| 199H. Government Regulation of Business. W. (5) | McAllister. |
| *199I. Civil and Criminal Procedure. | |
| *199J. Labor Law. | |

ELECTIVE FOURTH-YEAR COURSES

Sixteen hours of electives to be selected. Of this sixteen, an additional five hours of seminar or individual research may be undertaken with permission of the dean.

- | | |
|---|--------------------|
| ‡122. International Law. A,W. (3-3)
Casebook to be announced. | Martin. |
| *125. Trade Regulation. | |
| *128. Damages. | |
| *129. Drafting of Legal Instruments. | |
| *131. Quasi-Contracts. | |
| 132. Legal Accounting. A. (3)
Graham and Katz, Accounting in Law Practice and Assigned Cases. | McConahey. |
| 133. Public Utilities. A. (5)
Welch, Cases on Public Utility Regulation. | Nottelmann. |

*Not offered in 1940-1941.

‡No examination for credit until completion of entire course.

134. Federal Jurisdiction and Procedure. W. (4) Luccock.
Dobie, Cases on Federal Procedure (1935).
- *136. Insurance.
- *137. Water Rights.
- *138. Future Interests.
139. Administration of Debtors' Estates. A. (4) Luccock.
Hanna and McLaughlin, Cases on Administration of Debtors' Estates.
- *140. Mining Law.
141. Admiralty. S. (4) Shefelman.
Sayre, Cases on Admiralty.
- *143. Practice and Procedure II.
147. Municipal Corporations. S. (4) Thorgrimson.
Tooke, Cases on Municipal Corporations, 2nd ed.
190. Roman Law. A. (3) Levy.
Radin, Handbook of Roman Law.
191. Comparative Law. W. (3) Levy.
Rheinstein, Cases and Materials on Comparative Law of Sales.
- 199K. Research Problems in Law. A,W,S. (1 to 3) Staff.
Properly qualified third and fourth year students may, with the consent of a member of the law faculty and the dean of the school, receive from one to three credits for individual research in any of the major fields covered by the curriculum.

*Not offered in 1940-1941.

UNIVERSITY PUBLICATIONS

The University of Washington Bulletin (general series) includes the general catalogue, special bulletins, University Directory (price \$1), Extension Service, University News Letter, Oceanographic Laboratories, Summer Quarter.

The following series are published at irregular intervals and are sold for stated charges. Libraries or institutions offering material of equivalent value may secure exchanges by corresponding with the University librarian.

The University of Washington Publications contain the results of research in various departments of the University. These publications include the following series: Anthropology, Biology, Fisheries, Geology, Language and Literature, Mathematics, Oceanography, and the Social Sciences.

The Publications of the Engineering Experiment Station include bulletins of information and investigation concerning engineering and scientific problems.

The Extension Service Series includes monographs of interest and value to the layman. While authentic, they are not written in highly technical terms with which the general public is unfamiliar.

The College of Education Record is published monthly during the school year. It contains articles on progressive practices in education of interest to administrators in general, as well as specialized material particularly for school men in the Pacific Northwest.

The Pacific Northwest Quarterly is a quarterly magazine devoted to the publication of articles and materials dealing with all phases of the history of the Pacific Northwest.

BULLETIN

UNIVERSITY OF WASHINGTON

GENERAL SERIES

MARCH 9, 1940

No. 598

SCHOOL OF LIBRARIANSHIP

1940-1941

COLLEGE OF ARTS AND SCIENCES

SCHOOL OF LIBRARIANSHIP

Administrative Officers

Lee Paul Sieg, Ph.D., LL.D.....*President of the University*
Edward Henry Lauer, Ph.D.....*Dean of the College of Arts and Sciences*
Ruth Worden, B.A., Cert. in L.S.....*Professor of Librarianship; Director*

The Faculty, 1940-1941

Smith, Charles Wesley, B.A., B.L.S.....*Librarian; Professor of Librarianship*
Beardsley, Arthur Sydney, B.S. in L.S., LL.B., Ph.D.....*Law Librarian; Professor of Law*
Alfonso, Marie Smart, B.A., B.S. in L.S.....*Associate Professor of Librarianship*
Andrews, Siri, Cert. in L.S., B.S. in L.S.....*Assistant Professor of Librarianship*
Richards, John Stewart, B.A. (L.S.), M.A.....*Lecturer in Librarianship and Executive*
Assistant, the Library
Edwards, Gertrude, B.S. in L.S.....*Reviser*

SEATTLE, WASHINGTON

Published weekly at Seattle, Washington, by the University of Washington from October to July, inclusive. No issues in August and September. Entered as second-class matter at Seattle, Washington, under the Act of August 24, 1912.

Admission Requirements

Admission to the School of Librarianship is granted to graduate students who hold the baccalaureate degree from any college or university of good standing, and whose undergraduate work has included at least 20 college credits of one modern foreign language taken in college, and who have made an average grade of "B" in their undergraduate work. Students desiring to enter college or university library work or work in a large public library are required to have a reading knowledge of both French and German.

Admission to the course in law librarianship is granted to graduate students who have completed the law work at a school accredited by the Association of American Law Schools. Applications with full official transcripts of law courses must be sent to the Dean of the Law School. The number admitted will be limited.

Initial admission to classes is permitted only at the beginning of the autumn quarter. No one may be admitted to any course in librarianship, except those so marked, unless he is expecting to complete the entire curriculum.

Application for entrance must be made to the School of Librarianship before May 15, or September 15, of the year of entrance. Transcripts must be filed with the Registrar of the University as graduate standing is granted by the Registrar. An admission slip from the Registrar's Office indicating classification as a graduate student does not entail admission to the School of Librarianship. The student must make sure that his acceptance is clear in both offices.

Advisory Suggestions

Persons beyond 30 years of age will not be considered for admission to the school unless they have already had satisfactory experience in library service.

As no one with serious physical defects, personality difficulties, or ill health can readily secure a position in library service, such persons should not ask admission to the school.

The student entering the school should be a typist of accuracy and fair speed.

Students are advised not to plan for outside work as the courses are heavy.

Students desiring to prepare for children's librarianship are advised to take Psych. 131, *Child Psychology*.

The director is the adviser for all pre-library students. Students should consult the director in regard to their work once a quarter, preferably when registering, and should have their programs approved by her.

Graduates who have met the requirements for a teaching major and minor and wish to qualify for high school library work should consult the dean of the College of Education and the director of the School of Librarianship for qualifications in both fields.

An average class grade of "B" must be maintained by students of the School.

Degrees

On completion of the curriculum in librarianship, the degree of bachelor of arts in librarianship is granted; on completion of the curriculum in law librarianship, the degree of bachelor of arts in law librarianship is granted.

Upon completion of the advanced course in library work with children,¹ a certificate in library work with children is granted.

CURRICULA

I. GENERAL COURSE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
170. Children's Work	3	178. History of the Book..	3	186. Practice	5
172. Intro. to Library Wk..	2	184. Classification and		196. Books for Libraries...	3
175. Classification and		Cataloging	3	191. Classification and	
Cataloging	4	185. Bibliography and		Cataloging	3
177. Bibliography and		Reference	4	194. Bibliography and	
Reference	3	188. Books for Libraries...	3	Reference	2
179. Books for Libraries...	4	189. Adm., Small Libraries.	2	192. Administration	2

¹ Not offered in 1940-1941.

To specialize in cataloging, students take the general course except in the spring quarter when in place of 192, *Administration*, they take the five credits in 191, *Classification and Cataloging*; students specializing in reference take the general course except in the spring quarter when in place of 192, *Administration*, they take the four-credit course in 194, *Bibliography and Reference*.

II. COURSES FOR LIBRARY WORK WITH CHILDREN

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
170. Children's Work	3	178. History of the Book..	3	186. Practice	5
172. Intro. to Library Wk..	2	184. Classification and		196. Books for Libraries...	3
175. Classification and		Cataloging	3	190. Selection of Books	
Cataloging	4	185. Bibliography and		for Children	3
177. Bibliography and		Reference	3	180. Story Telling	3
Reference	3	188. Books for Libraries...	2		
179. Books for Libraries...	4	181. Adv. Children's Work.	2		
		183. Selection of Books			
		for Children	3		

III. COURSES FOR SCHOOL LIBRARY WORK

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
170. Children's Work	3	178. History of the Book..	3	182. School Lib. Adminis...	3
172. Intro. to Library Wk..	2	184. Classification and		186. Practice	5
175. Classification and		Cataloging	3	194. Bibliography and	
Cataloging	4	185. Bibliography and		Reference	2
177. Bibliography and		Reference	4	196. Books for Libraries...	3
Reference	3	188. Books for Libraries...	3		
179. Books for Libraries...	4	195. Book Selection for			
		High School Libraries.	3		

For students preparing to meet the requirements asked by the State Department of Education for teacher-librarians in schools of five hundred or less or to meet the requirements for an eighteen-hour minor, the following courses have been opened: Lib. 170, 175, 177, 182, 184, 195.

Course 184 is offered in the winter quarter only, and must follow 175. If such students plan to take less than 18 credits of librarianship, it is recommended that 175 and 195 be considered essential, and 182, 177, 170, and 184, desirable, ranked in order of importance.

If such students wish later to take the degree of bachelor of arts in librarianship, they will need to meet all requirements for entrance to the School and to complete the remainder of the curriculum.

IV. COURSES IN LAW LIBRARIANSHIP

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
175. Classification and		178. History of the Book..	3	186. Practice	5
Cataloging	4	184. Classification and		191. Classification and	
177. Bibliog. & Reference..	3	Cataloging	3	Cataloging	5
240. Adv. Legal Bibliog...	4	185. Bibliog. & Reference..	4	243. Law Library Adminis..	5
241. Order and Accession-		242. Legal Reference			
ing of Law Books.....	4	and Research	5		

COURSES OF STUDY

#170. Introduction to Children's Work.	A.W. (3)	Andrews.
A basic course.		
#172. Introduction to Library Work.	A. (2)	Worden.
Library organization, problems of different types of libraries, and current library topics.		
#175. Classification, Cataloging, Subject Headings.	A, S. (4)	Alfonso.
#184. Classification, Cataloging, Subject Headings.	W. (3)	Alfonso.
#191. Classification, Cataloging, Subject Headings.	S. (3 or 5)	Alfonso.
#177. Bibliography and Reference.	A, S. (3)	Smith, Alfonso.
Includes trade bibliographies and government documents.		

- §185. Bibliography and Reference. W. (3 or 4) Smith, Alfonso.
Continuation of 177.
- §194. Bibliography and Reference. S. (2 or 4) Smith, Alfonso.
Continuation of 185.
- §178. History of the Book. W. (3) Richards.
- §179, §188, §196. Books for Libraries. A,W,S. (4, 2 or 3, 3) Worden.
Study of the book field, and the problems of selecting books.
180. Story Telling. A, §S. (3) Andrews.
Study of folk and fairy tales, myths, epics, and short stories as source material for story telling. Open to juniors and seniors in autumn.
- §181. Advanced Children's Work. W. (2) Andrews.
Organization of a children's department; problems of book buying and administration. Pr., 170.
- ‡182. School Library Administration. A,W,S. (3) Andrews.
- §183. Selection of Books for Children. W. (3) Pr., 170. Andrews.
- §186. Practice. S. (5) Worden.
Four weeks (40 hours a week) of practice work under expert supervision in neighboring Northwest libraries.
- §189. Organization and Administration of Small Libraries. W. (2) Worden.
- §190. Selection of Books for Children. S. (3) Pr., 183. Andrews.
- §192. Administration. S. (2) Worden.
Problems of library management, buildings, equipment, finance, publicity.
- ‡195. Book Selection for High School Libraries. A,W,S. (3) Andrews.
- §240. Advanced Legal Bibliography. A. (4) Beardsley.
Bibliographical data and use of federal and state law reports and statutes; quasi-legal and commissioners' reports of the states, for association records, legal periodicals, indexes and digests, legal regional bibliographies, cooperative bibliographies of law collections.
- §241. Order and Accessioning of Law Books. A. (5) Beardsley.
Study of aids to law book selection, ordering and accessioning of law books, processing, micro-photography of legal material, etc.
- §242. Legal Reference and Research. W. (5) Beardsley.
Study of bibliographical lists, law reference questions, briefing, annotations, local legal history.
- §243. Law Library Administration. S. (5) Beardsley.
Staff problems, patrons and public relations, circulation problems and procedure, law library architecture and planning, book arrangements, equipment, rules, publicity, publications, budgets, reports, professional societies, regional service, cooperative buying.

SECOND-YEAR LIBRARY WORK WITH CHILDREN

(Not offered in 1940-1941)

- *201, 202, 203. Children's Literature.
- *204, 205, 206. Administration of Children's Libraries.
- *207, 208, 209. Traditional Literature.
- *210, 211, 212. School Work.
- *213, 214, 215. Field Work. (Not required of students with library experience.)

‡ Open to seniors and graduates who wish to qualify for teacher-librarian positions in high schools.

§ Open only to students registered in the school.

* Not offered in 1940-1941.

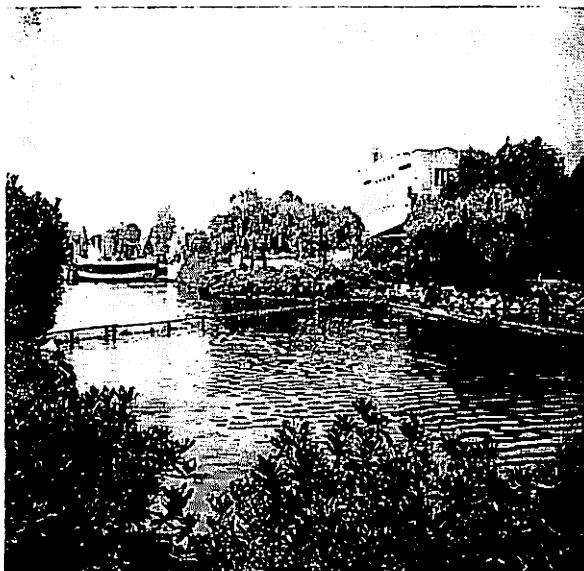
BULLETIN UNIVERSITY OF WASHINGTON

GENERAL SERIES

JANUARY 6, 1940

No. 589

OCEANOGRAPHIC LABORATORIES



THE OCEANOGRAPHIC LABORATORY, SEATTLE

SUMMER SESSION

FRIDAY HARBOR, WASHINGTON

Registration, June 22 . . . Instruction from June 24 to August 24

BACTERIOLOGY	Page 8
BOTANY	Page 8
CHEMISTRY	Page 8
METEOROLOGY	Page 8
OCEANOGRAPHY	Page 9
PHYSICS	Page 10
ZOOLOGY	Page 10

The Regular Session in SEATTLE coincides with the Autumn,
Winter and Spring quarters of the University Calendar.

SEATTLE, WASHINGTON

Published weekly at Seattle, Washington, by the University of Washington from October to July, inclusive. No issues in August and September. Entered as second-class matter at Seattle, Washington, under the Act of August 24, 1912.

OCEANOGRAPHIC LABORATORIES

OFFICERS OF ADMINISTRATION

Lee Paul Sieg, Ph.D., LL.D.....*President of the University*
 Frederick M. Padelford, Ph.D., LL.D.....*Dean of the Graduate School*
 Thomas G. Thompson, Ph.D.....*Director of the Laboratories and Professor of Chemistry*

STAFF

Guberlet, John E., Ph.D.....*Professor of Zoology*
 Kincaid, Trevor, M.A., D.Sc.....*Professor of Zoology*
 Rigg, George B., Ph.D.....*Professor of Botany*
 Utterback, Clinton L., Ph.D.....*Professor of Physics*
 *Henry, Bernard S., Ph.D.....*Associate Professor of Bacteriology*
 Norris, Earl R., Ph.D.....*Associate Professor of Chemistry*
 Robinson, Rex J., Ph.D.....*Associate Professor of Chemistry*
 Church, Phil E., Ph.D.....*Assistant Professor of Geography and Meteorology*
 Phifer, Lyman D., Ph.D.....*Assistant Director and Associate Professor of Oceanography*

LECTURERS

Hardy, F. H., B.S.....*Captain, United States Coast and Geodetic Survey*

RESEARCH ASSOCIATES

Henry, Dora P., Ph.D.....*Zoology*
 Norris, Anna C., Ph.D.....*Biochemistry*
 Stevens, Belle A., Ph.D.....*Zoology*
 Knox, Cameron, Ph.D.....*Zoology*

Larsen, C. T.....*Captain, M.S. "Catalyst"*
 Fuller, Forrest.....*Curator*
 Bardue, Mary.....*Secretary*
 Grier, Mary, B.S.....*Librarian*
 Warner, Berniece.....*Dining Hall Manager*

UNIVERSITY FELLOWS

Taylor, Kendrick, B.S.....*Bacteriology*
 Breuer, Rosalia, B.S.....*Embryology*
 Anderson, Don H., B.S.....*Chemistry*
 Pertuit, Camile J., B.S.....*Zoology*
*Chemistry*
 Goodman, Joe R., B.S.....*Oceanography*
 Hamm, Randall E., M.S.....*Oceanography*
 Williams, Robert H., M.S.....*Botany*
 Wilson, Raymond E., B.S.....*Physics*
 Zwicker, Benjamin M.G., M.S.....*Oceanography*

CALENDAR FOR SUMMER SESSION

Research accommodations for investigators available from.....June 1 to October 1, 1940
 Registration date.....June 22, 1940
 Instruction begins.....June 24, 1940, 8 a.m.
 Instruction ends.....August 24, 1940, noon

*Not in residence summer session, 1940. Bacteriology to be under the supervision of Erling J. Ordal, Ph.D., assistant professor of bacteriology, University of Washington.

THE SUMMER SESSION AT FRIDAY HARBOR

Description of Laboratories

The field laboratories are on San Juan Island, one of the largest islands of the San Juan Archipelago. This archipelago, comprising about 175 islands, is in the Northwest section of the State of Washington, lying approximately in latitude 48° N. and longitude 123° W. The laboratory grounds occupy a tract of 484 acres, having about two miles of shore line.

The buildings consist of six one-story laboratories of concrete and hollow tile, a stockroom, a dining and social hall, and the residences of the director and the curator. They are about one and one-half miles from the town of Friday Harbor, the county seat of San Juan County, and may be reached by ferry from Anacortes and Bellingham, Wash., or Sidney, B. C.

Facilities for Scientific Work

The laboratories are admirably located for the study of various phases of oceanography. Within a relatively short distance are sea waters varying from oceanic to those highly diluted by streams, with depths to 300 meters, bottoms varying from mud to rock, and water movements ranging from those of quiet bays and lagoons to those of swift tide ways. The marine fauna and flora of the region are exceptionally abundant. During the summer session, a 50-foot power boat, the *Medea*, equipped for dredging, net hauls, water sampling, and the like, is available to those engaged in research and for general class work. The *Catalyst*, a 75-foot diesel-driven research boat, equipped with laboratories and apparatus for investigations at sea, operates from Friday Harbor during the summer. Row boats are accessible at all times at the laboratory dock and floats. The floats are provided with a number of live boxes. A cantilever pier is equipped for making various types of observations.

A tidal station is maintained in cooperation with the United States Coast and Geodetic Survey. A meteorological station for continuous observations of direct and diffuse solar radiation is operated in cooperation with the United States Weather Bureau.

All the laboratories are equipped with ample electric outlets, gas, fresh water, and sea water cooled to the approximate temperature of the adjacent sea. The zoological laboratories are equipped with aquaria. The stock room supplies the usual apparatus and glassware. Arrangements may be made for the loan of special apparatus from the several departments of the University. Compound and dissecting microscopes are furnished.

Private research laboratories are available as well as research tables.

The library contains 5,000 volumes and many United States Coast and Geodetic Survey charts. Books or journals may also be borrowed from the University of Washington Library through the librarian of the Laboratories. The library of the University further maintains an interlibrary loan service so that almost any volume is available.

Fauna and Flora. The San Juan Archipelago is noted for the abundance and variety of its marine fauna and flora. Particular mention may be made of the following animals yielding embryological material during the summer months: *Obelia*, *Strongylocentrotus*, *Echinarachnius*, *Stichopus*, *Argobuccinum*, *Melibe*, *Lacuna*, *Crepidula*, *Haminea*, *Nereis*, *Polynoids*, *Amphitrite*, *Arenicola*, *Pentidotea*, *Caprella*, *Balanus*, various *Tunicates*, and *Cymatogaster*.

The zooplankton of the area is rich and varied, since an opportunity is afforded to secure both the neritic forms and the oceanic plankton over the continental shelf.



CONTENTS OF DREDGE BEING DEPOSITED ON DECK OF "CATALYST"

Among the algae available to workers at the laboratories are the following: Browns—Nereocystis, Laminaria, Cymathaeae, Agarum, Hedophyllum, Alaria, Pterygophora, Desmarestia, Ectocarpus, Fucus; Greens—Ulva, Monostroma, Enteromorpha, Cladophora, Codium; Blue-Greens—Lyngbya, Oscillatoria; Reds—Porphyra, Iridaea, Gigartina, Callophyllis, Turnerella, Anatheca, Rhodymenia, Halosaccion, Polysiphonia, Odonthalia. Dasyopsis, Antithamnion, Prionitis, Amphiroa, Corallina, and Lithothamnion.

Most of these algae are abundant and are readily obtained near the laboratories either by shore collecting or dredging. Some other large brown algae are found in the vicinity of Cape Flattery. Among these are Postelsia and Lessoniopsis.

Marine Biological Preserve. In 1923, the State of Washington created a marine biological preserve which includes all marine waters of San Juan

County and some contiguous territory. Collection of biological materials by persons not associated with the laboratories is thus prohibited by law.

Picking of flowers, digging of plants of any kind, mutilating of trees and shrubs, or collecting of specimens along the shore of the Campus is not permitted.

The tract of land on which the laboratories are located is a state game preserve; therefore, firearms of any description and pets cannot be permitted on the grounds.

Research Accommodations at Friday Harbor Other Than During the Summer Sessions. Special arrangements may be made for a limited number of investigators who desire to avail themselves of the facilities of the laboratories throughout the year.

Admission

The summer session of the laboratories is for (a) independent research, (b) directed research, (c) seminar and formal courses. Application blanks for admission should be made on the enclosed blank and sent to the Director of the Oceanographic Laboratories, University of Washington, Seattle, Washington. Applications will be acted upon within a week after receipt.

Independent Research. Investigators desiring to work during the summer session will forward to the director the topic of their proposed research, together with a statement of special conditions and apparatus desired.

Those who desire to work independently and who have not received the doctorate, should submit the name and address of someone who can testify as to their ability to carry on original work. A brief outline of the proposed research should also be presented, stating material and apparatus necessary.

Directed Research, Seminars and Formal Courses. Requirements for admission are the same for the summer session as for any other session of the University. With permission of the staff, a student may register for a maximum of twelve and one-half credits. Credentials and all correspondence relating to admission should be addressed to the director and official credentials filed with him as long as possible before the opening of the session.

Diplomas or certificates of graduation and personal records of credits that the applicant wishes to have returned to him, cannot be accepted as credentials.

Admission to Graduate Standing. A bachelor's or higher degree from a college or university, whose standards are equal to those of the University of Washington, is required for admission to the Graduate School.

Admission of Undergraduate Students. The work of the laboratories is primarily for graduate students and advanced investigators. Exceptional upper division students may, however, be admitted to the work of the laboratories after complying with the above requirements and obtaining the consent of the director of the laboratories and the professors in charge of the courses in which they desire to register.

Official blanks for transfer of credits earned during the summer will be furnished by the Registrar of the University, on request to the Director of the Laboratories.

Registration

All persons desiring to work at the Laboratories are required to make formal application. Blanks for this purpose are included in this bulletin.

GENERAL INFORMATION

Lectures. General lectures are given each Wednesday evening by members of the staff or by visiting scientists, and special seminars are conducted in various fields.

Expenses

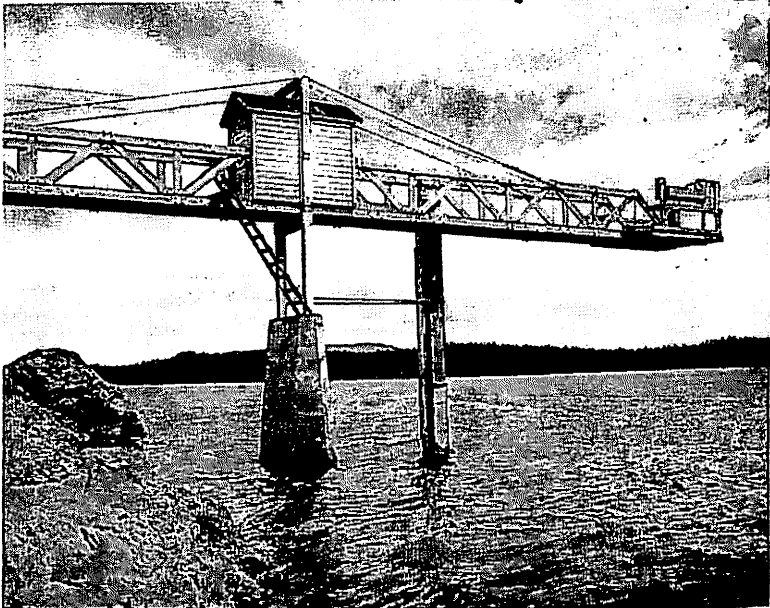
(All fees must be paid in advance.)

Tuition Fee.....	\$31.00
Tent, two or more in a tent, each.....	6.50
Individual tent.....	13.00
Board, per week in advance.....	5.75
Stockroom ticket.....	5.00

The tuition fee is for maintenance of the equipment, not for supplies, breakage, and the like.

Research Reservations. Private laboratories are obtainable for \$50 for the summer session, or \$65 if two investigators occupy the same laboratory. The fee for research space in the main research laboratory is \$31.00. Application for reservations should be made to the director.

The *Medea*, with its equipment for dredging is available for the use of independent investigators.



CANTILEVER OBSERVATION PIER AT FRIDAY HARBOR

Living Conditions

Tents with board floors and half walls, accommodating two persons, are available on the grounds. These tents are equipped with cots and mattresses; pillows and bedding are not provided. Shower rooms and lavatories are centrally grouped. A limited number of cottages and furnished rooms are available in the town of Friday Harbor.

Rain may be expected during the first weeks of the session. In June and early July, the weather may be cool and it is essential that sufficient blankets be brought. Plenty of warm clothing should also be provided.

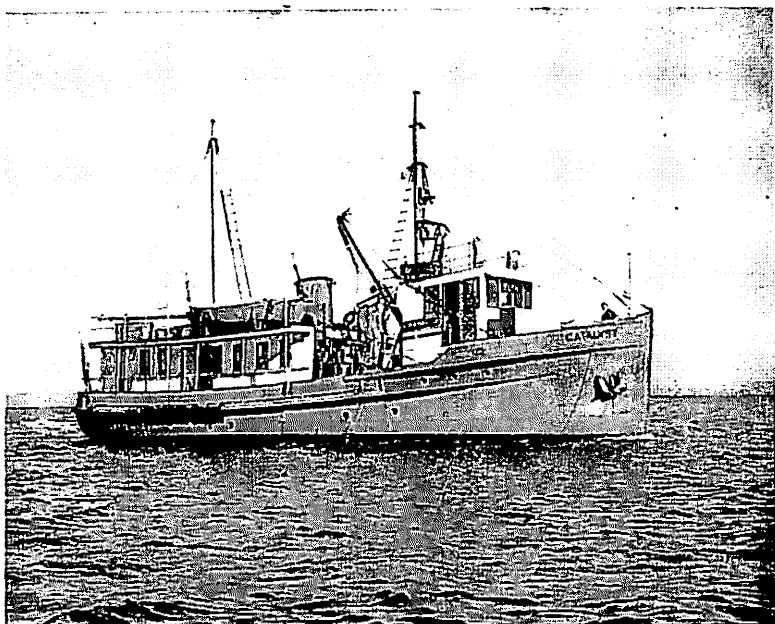
Dining service is maintained from June 10 to August 30. There is a limited number of opportunities for students to wait table in return for their board. Those interested may apply to the director.

Tent Reservations. Tent reservations must be made through the director of the Laboratories by depositing the regular tent fee. This fee will not be refunded after June 10.

Auto Parking. There are no garages on the grounds, but parking space is provided. No parking will be permitted in areas other than those designated. Garage facilities are obtainable in Friday Harbor.

Transportation to the Laboratories

The Friday Harbor laboratories may be reached by frequent ferry service from Anacortes or Bellingham (Chuckanut), on the mainland, and from Sidney, Vancouver Island. Phone Main 2222 (Seattle) for the latest schedule. Frequent stage service is provided between Seattle, Victoria or Vancouver and the ferry terminals.



THE M. S. "CATALYST," FLOATING OCEANOGRAPHIC LABORATORY

COURSES OF STUDY

(Numbers in parentheses indicate number of credits)

BACTERIOLOGY

201. **Physiology of Bacteria.** (6) Th., F., S. Ordal and Taylor.
Environmental factors influencing marine bacteria, bacterial metabolism and activities. Open to qualified students after consultation.
212. **Research Problems in Oceanographic Bacteriology.** (†) Ordal.
Open to qualified students after consultation.
- For graduate seminar, see also Oceanography.**

BOTANY

161. **Marine Plants.** (6) Th., F., S. Phifer and Assistant.
Morphology and distribution of marine thallophytes and spermatophytes in the San Juan Archipelago. Material obtained with the dredge and on shore trips. An herbarium of the plants of the region is available. Prereq., general botany.
- 205-206. **Physiology of Marine Plants.** (6) M., T., W. Rigg, Williams.
Lectures, conferences and laboratory work. Shore and dredging trips will be made to collect material for physiological work and to familiarize students with the environmental conditions under which marine plants grow. Prereq., general botany, organic chemistry.
- 210-211. **Phytoplankton.** Phifer.
Offered in summer of 1941 and alternate years.
233. **Research.** (†) Rigg, Phifer.
For graduate seminar, see also Oceanography.

CHEMISTRY

- 155-156. **Oceanographic Chemistry.** (6) Th., F., S. Thompson, Robinson, Zwicker.
General physical and chemical properties of sea water. Prereq., organic chemistry, qualitative and quantitative analysis, one year each of college physics and mathematics.
157. **Biochemistry of Marine Life.** (6) M., T., W. Norris.
Biochemistry applied to life in the sea. Prereq., quantitative analysis, organic chemistry, 10 hours of biological science.
225. **Problems in Analytical Chemistry.** (3-6) Thompson, Robinson.
As applied to the sea and sea products.
250. **Research.** (†) Thompson, Norris, Robinson.
For graduate seminar, see also Oceanography.

METEOROLOGY

- Geog. 162. **Oceanographic Meteorology.** (6) Th., F., S. Church.
Temperature interactions between ocean surface and atmosphere. Effect of temperature on vertical structure of wind. Open to qualified students after consultation.
- Geog. 211. **Research.** (†) Church.
For graduate seminar, see also Oceanography.

†To be arranged.



TAKING A WATER SAMPLE ON THE "CATALYST"

OCEANOGRAPHY

249. Graduate Seminar. (†) Staff.

Students who are qualified may, after consultation with their major professor, select topics in which they are particularly interested. Assigned readings and reports.

250. Research. (†) Staff.

The work in research in the several departments is of three types: (1) special investigations by advanced students; (2) research leading to the master's degree; (3) research leading to the doctor's degree.

†To be arranged.

PHYSICS

166. **Physical Oceanography.** (6) M., T., W. Utterback, Wilson.
Lectures, conferences and laboratory. A study is made of various types of tides with an introduction to tidal theory; ocean currents and methods of measurement; and dynamical optical and electrical properties of sea water with methods of measuring these properties, and their relations to environmental conditions. Prereq., one year college physics.
256. **Research.** (†) Utterback.
For graduate seminar, see also Oceanography.

ZOOLOGY

- 213-214. **Advanced Invertebrate Embryology.** (6) Th., F., S. Guberlet, Breuer.
Development of marine animals illustrating types of embryos, with emphasis upon their life histories. Prereq., at least two years of college zoology.
216. **Zooplankton.**
Not offered in 1940.
225. **Advanced Invertebrate Zoology.** (6) M., T., W. Kincaid, Pertuit.
Marine invertebrate animals from the point of view of biological oceanography. Prereq., two years of college zoology.
201. **Research.** (†) Kincaid, Guberlet.
For graduate seminar, see also Oceanography.

†To be arranged.

APPLICATION FOR ADMISSION
University of Washington, Oceanographic Laboratories
Summer Session, 1940

Name of applicant, in full.....
Last Name First Name Middle Name

Mailing address.....

Have you credentials on file at the University of Washington?.....

What is your major academic interest?.....

Date of Birth.....

Institutions previously attended (with year of graduation) :

College or University.....

Degrees with dates.....

Are you, during the present school year, attending any college or

university?.....

If not, when did you last attend?.....

Are you a member of the instructional staff of an elementary, high school,

junior college, normal school, college, or university?.....
(State which, with title.)

.....

In what courses, if any, do you plan to register?.....

.....

Will your research be conducted independently..... under supervision.....

If under supervision, with whom will you work?.....

(If independently, write director, stating proposed work, the necessary apparatus and equipment required, and research room or table desired.)

Tent specification: Whole tent.....; half tent..... If married, will you

be accompanied by wife, family?.....

State number and ages of children.....

Date of arrival..... Will you bring your car?.....