FOR INFORMATION ON

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 to change any other regulations affecting the student body. Such regulations shall go into force whenever the proper authorities so determine, and shall apply not only to prospective students, but also to those who at such time are matriculated in the University. The University also reserves the right to withdraw courses or change fees at any time.

Preserve This Catalogue for Future Use

The attention of all students is called to the following regulation (see paragraph 1, "Degrees—Additional Regulations," page 88 of this catalogue): "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 be graduated. All responsibility for fulfilling the requirements for graduation rests upon the student concerned." For your own guidance, therefore, you should retain this catalogue and familiarize yourself with all the provisions that apply to you.

BULLETIN
UNIVERSITY OF WASHINGTON

CATALOGUE ISSUE
1949-1950

GENERAL SERIES JUNE, 1949 No. 832

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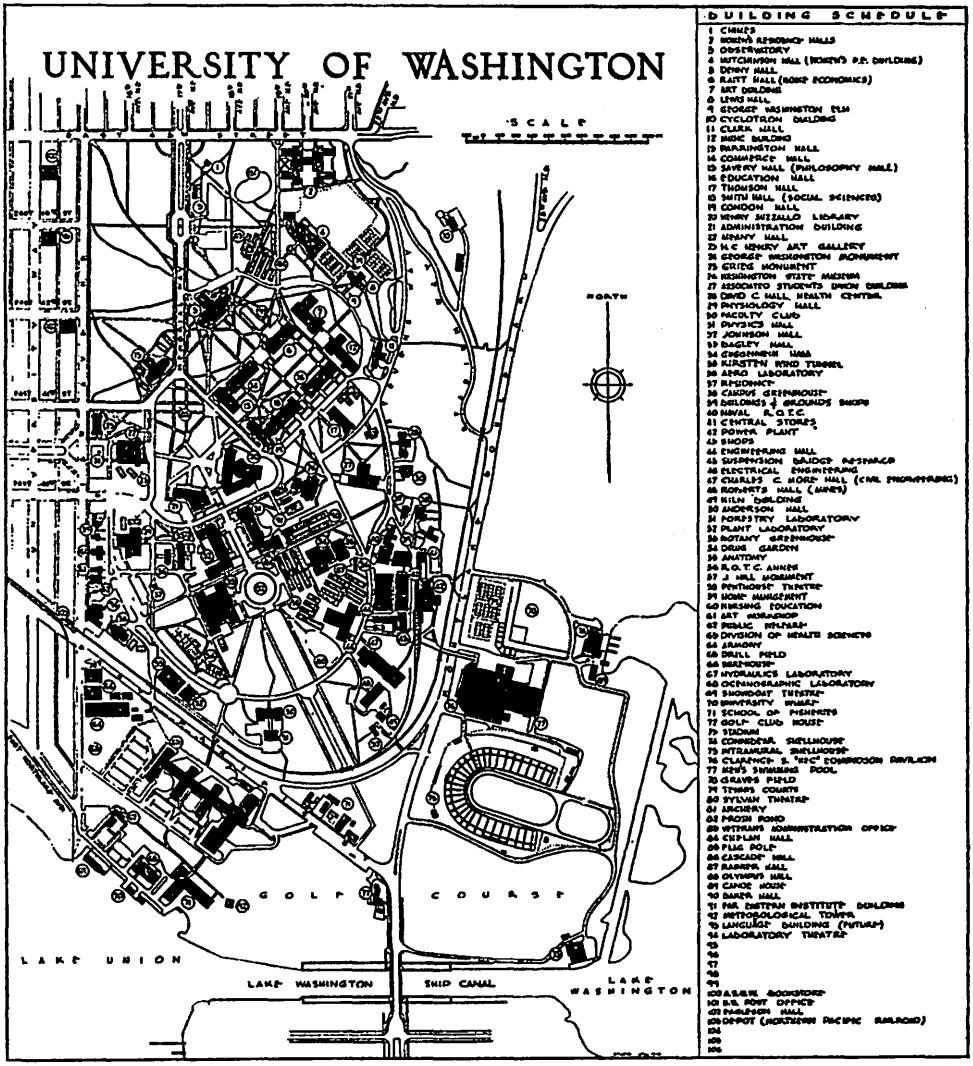

THE UNIVERSITY CAMPUS, composed of 605 acres, lies between Fifteenth Avenue Northeast and Lake Washington, and East Forty-fifth Street and Lake Union. The 15th Ave. N.E., Ravenna, and Montlake trolley coach lines run one block west of the campus; Laurelhurst-Sand Point motor coach line passes the campus on the north; University-Ballard coaches come to East Forty-fifth Street and University Way.

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UNIVERSITY OF WASHINGTON CALENDAR—1949-1950

SUMMER QUARTER, 1949

General registration in person (by appointment only).....May 31 to June 18, 12 m.

All fees must be paid at time of registration

Instruction begins:
University courses.....June 20, 8:00 a.m.
Nursing: Hospital Division and Public Health Field Work only.....June 13, 8:00 a.m.
Independence Day (holiday).....Monday, July 4
First term ends.....July 20, 6:00 p.m.
Second term begins.....July 21, 8:00 a.m.
Last day to add a University course:
First term.....June 22, 4:30 p.m.
Full quarter.....June 25, 12 m.
Second term.....July 23, 12 m.
Instruction ends:
University courses.....August 19, 6:00 p.m.
Nursing: Public Health Field Work.....August 26, 6:00 p.m.
Hospital Division.....September 4, 6:00 p.m.

AUTUMN QUARTER, 1949

Registration dates:

For students in residence, Spring 1949.....September 1 to September 27, 4:30 p.m.
Appointments may be obtained at Registrar's Office upon presentation of A.S.U.W. card not later than September 16, 4:30 p.m.

For former students not in residence, Spring, 1949....September 9 to September 27, 4:30 p.m.
Appointments may be obtained by writing or calling at the Registrar's Office not later than September 16, 4:30 p. m.

For new students.....September 12 to September 27, 4:30 p.m.
Appointments will be mailed with the Notification of Admission blank.

All fees must be paid at time of registration

Last day for new students to submit applications for admission to undergraduate or graduate standing in the Autumn Quarter, with complete credentials.....September 1, 4:30 p.m.
Last day for former students to apply for registration appointments for Autumn Quarter .....September 16, 4:30 p.m.
Last registration day before beginning of instruction.....Tuesday, September 27
Instruction begins.....Wednesday, September 28, 8 a.m.
The President's Convocation.....Thursday, September 29, 10:50 a.m.
Last day to add a course.....Tuesday, October 4, 4:30 p.m.
Armistice and Admission Day (Holiday).....Friday, November 11
Thanksgiving recess begins.....Wednesday, November 23, 6 p.m.
Thanksgiving recess ends.....Monday, November 28, 8 a.m.
Instruction ends.....Friday, December 16, 6 p.m.

WINTER QUARTER, 1950

Registration dates:

For students in residence, Autumn Quarter, 1949.....November 14 to December 9
Appointments will be issued, by classes only, on presentation of A.S.U.W. card, beginning October 21, 8 a.m.

For former students not in residence, Autumn Quarter, 1949.....
December 27 to December 30, 4:30 p.m.
Appointments may be obtained by writing to or calling at the Registrar's Office beginning October 12.

For new students.....December 27 to December 30, 4:30 p.m.
Appointments will be mailed with the Notification of Admission blank.

All fees must be paid at time of registration

Last registration day before beginning of instruction.....Friday, December 30, 4:30 p.m.
Instruction begins.....Tuesday, January 3, 8 a.m.
Last day to add a course.....Monday, January 9, 4:30 p.m.
Washington's Birthday (Founder's Day and Legal Holiday).....Wednesday, February 22
Instruction ends.....Friday, March 17, 6 p.m.

SPRING QUARTER, 1950

Registration dates:

For students in residence, Winter Quarter, 1950.....February 13 to March 10
Appointments will be issued, by classes only, on presentation of A.S.U.W. card, beginning January 20, 8 a.m.

For former students not in residence, Winter Quarter, 1950.....March 20 to March 25, 12 m.
Appointments may be obtained by writing to or calling at the Registrar's Office beginning January 13.

For new students.....March 20 to March 25, 12 m.
Appointments will be mailed with the Notification of Admission blank.

All fees must be paid at time of registration

Last registration day before beginning of instruction.....Saturday, March 25, 12 m.
Instruction begins.....Monday, March 27, 8 a.m.
Last day to add a course.....Saturday, April 1, 12 m.
Honors Convocation.....Wednesday, May 24, 10 a.m.
Memorial Day (Holiday).....Tuesday, May 30
Governor's Day.....Thursday, June 1
Baccalaureate Sunday.....Sunday, June 4
Instruction ends.....Friday, June 9, 6 p.m.
Commencement.....Saturday, June 10

SCHEDULE OF UNIVERSITY SENATE AND EXECUTIVE COMMITTEE MEETINGS FOR THE YEAR 1949-1950

Autumn 1949

Executive Committee.....Monday, September 19
Senate (Election of Executive Committee for 1949-50).....Thursday, September 29
Executive Committee.....Monday, October 10
Senate.....Thursday, October 20
Executive Committee.....Monday, November 21
Senate.....Thursday, December 1

Winter 1950

Executive Committee.....Monday, January 9
Senate.....Thursday, January 19
Executive Committee.....Monday, February 20
Senate.....Thursday, March 2

Spring 1950

Executive Committee.....Monday, April 3
Senate.....Thursday, April 13
Senate Elections Begin.....Monday, April 17
Executive Committee.....Monday, May 15
Senate.....Thursday, May 25

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1949-1950

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Term ends March, 1952

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VICE-PRESIDENT ..... Jack Westland, LL.B., 1926
VICE-PRESIDENT ..... Frances Morrill, B.A., 1921
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Audio-Visual Activities Board—Chairman, Loew; Edwin Adams, Cochran, Hayden, Pauline Johnson, Normann, Schram; F. F. Powers, ex-officio and secretary; Don Anderson, ex-officio.

Board of Admissions—Chairman, Burd; A. V. Eastman, Rahskopf; Registrar, secretary.

Board of Health Sciences—Chairman, Turner; L. Carlson, Goodrich, Guthrie, Jones, Lauer, L. E. Powers, Soule, Tartar, Wahlstrom.

Board of Veterans' Problems—Chairman, Burd; A. V. Eastman, Rahskopf; Registrar, secretary.

Campus Residences for Students—Chairman, Conrad; Kidwell, Newhouse, Pringle, Leona Saunders, Terrell, Wahlstrom; Miss McClure, ex-officio.

Coordinating Committee on Academic Relations with Public and Private Colleges of Washington—Chairman, Toner; Emery, F. F. Powers, Verne Ray, E. R. Wilcox.

Engineering Experiment Station Board—Chairman, Wessman; A. V. Eastman, F. S. Eastman, Farquharson, C. W. Harris, Goodspeed, Grondal, McMinn, Moulton, Pifer, Utterback, Van Horn.

Exchange Scholarship Committee—Chairman, C. E. Martin; Executive Secretary, Riley; Huber, A. W. Martin, H. C. Meyer, Michael, García-Prada, E. R. Wilcox; James Davis, Counsel of Foreign Students, ex-officio.

Far Eastern and Russian Institute Advisory Board—Chairman, G. E. Taylor, Bauer, Falknor, Gunther, Guthrie, Holt, Huber, Isaacs, Lauer, Lundberg, C. E. Martin, H. H. Martin, E. J. Nelson.

General Publications Board—Chairman, Guthrie; Burd, Eastman, Lauer, Savage, Vail, Winger, Comptroller, Registrar, University Editor.

Graduate Council—Chairman, Guthrie; H. S. Bennett, F. Eastman, Eby, Harrison, Hitchcock, Lundberg, Mander, Marckworth, A. W. Martin, F. F. Powers, Verne Ray, Rex Robinson, Vail, Van Horn. Sub-Committee—Walker-Ames Fund Chairman, Verne Ray; Eby, Hitchcock.

Graduate School Publications Committee—Chairman, Verne Ray; Bauer, Carpenter, K. C. Cole, Davidson, Goodspeed, Griffith, Hitchcock, Ordal, Savage; University Editor, ex-officio.

High School Student Relations and Orientation—Chairman, Toner; Secretary, Harold Adams; Donald Anderson, Barr, Bechtholt, Cassill, Cole, Emery, Hamack, Harris, Newhouse, F. F. Powers, Rahskopf, Schram, Tyler, Warner.

Labor Economics Institute Advisory Council—Chairman, Hopkins; Burd, Cole, Guthrie, MacKenzie, McMinn, Mund, D. Miller.

Nursery School Board—Chairman, Powers; Grace Ferguson, Lauer, Rowntree, S. Smith, Soule.

Room Assignments Committee—Chairman, Wahlstrom; Guthrie, May, Toner, and Dean of College concerned.

Special Board on Retirement for Health—Chairman, D. MacKenzie; Dean of the Medical School, executive officer in charge of academic personnel and/or the adviser for nonacademic personnel, Pullen, Birnbaum.

University Research Committee—Chairman, Macklin; Guthrie, Verne Ray, Lauer, Preston, Tartar, Weaver, Smith.

Washington Public Opinion Advisory Council—Chairman, Dodd; Edwards, Birnbaum, Guthrie, Hopkins, Lundberg, F. F. Powers, Verne Ray, Webster.

OFFICERS OF THE FACULTY 1948-1949

Chairman of the Senate.....E. R. Wilcox

Chairman of the Executive Committee.....Raymond B. Allen

Vice-Chairman of the Senate and the Executive Committee.....Donald Mackenzie

Secretary.....Ethelyn Toner

Executive Committee: Group I, Donald Cornu; Group II, Kathleen Munro; Group III, Edward Lingafelter; Group IV, E. R. Wilcox; Group V, William S. Holt; Group VI, Donald Mackenzie; Group VII, John C. Brauer.

COMMITTEES OF THE FACULTY 1948-1949

Admissions and Scholastic Standards—Chairman, Hayden; Church, Irvine, Jerbert, Sergev, Stirling, Youngken; Registrar, ex officio.

Adult Education and Extension Services—Chairman, Arestad; E. Draper, Franzke, Henderson, Mander; Director, Division of Adult Education and Extension Services, ex officio; Comptroller, ex officio.

Athletics—Chairman, Everest; Barksdale, Corbally, Donaldson, Harsch, Mackenzie, Schrader; Manager of Athletics, ex officio.

Budget—Chairman, Farquharson; Cornu, H. M. Cross, C. J. Miller, R. Robinson, Schmid, Shipman; Comptroller, ex officio.

Building Needs—Chairman, McMinn; Bauer, Dille, Gowen, Isaacs, Rhodes, Strother; Superintendent of Buildings and Grounds, ex officio.

Committee on Committees—Chairman, H. M. Cross; E. H. Adams, Brauer, Cornu, Dille, A. V. Eastman, Holt, Isaacs, Lingafelter, Mackenzie, Munro, E. J. Nelson, Wilcox, Winger.

Curriculum—Chairman, Roman; Becker, Cochran, Demmery, Hald, Normann, Williston; plus one ex officio member without vote representing each college and distinct unit of the University; University Editor, ex officio.

Graduate Study and Research—Chairman, Hopkins; Dauben, F. S. Eastman, Eby, C. A. Evans, Goodspeed, Lawton, Savelle; Dean of the Graduate School, ex officio.

Graduation—Chairman, Munro; Coombs, A. V. Eastman, C. A. Evans, Smullyan; Registrar, ex officio.

Honors—Chairman, Densmore; R. Adams, W. Hill, Huber, Jacobs, Katz, Zuckerman; Registrar, ex officio.

Junior Colleges—Chairman, T. R. Cole; Beaumont, R. Q. Brown, Creore, Emery, Gates, Hamack, Kinscella, Lawson, Lingafelter, Robertson; Dean of the College of Education, ex officio; Registrar, ex officio.

Library—Chairman, E. J. Nelson; Benham, Bostetter, Emerson, J. K. Hall, Jessup, Marckworth, Moritz, Munro, Ruch, Uehling; Librarian, ex officio.

Museum—Chairman, Gunther; Brockman, Hatch, P. Johnson, Michael, Mackin, Pries; Director of the Museum, ex officio.

Personnel—Chairman, W. R. Wilson; Burgess, Cady, Grondal, Hennes, Melden, Perrin; Director of Faculty Personnel, ex officio; Dean of the Graduate School, ex officio.

Public Exercises—Chairman, Lindblom; Coombs, Jerbert, Kuether, Kingston, Kunde, Lawrence, McCarthy, A. L. Miller.

Public Lectures and Concerts—Chairman, Savage; Astel, Chapple, Conway, Gitler, Gunther, McKay, Rader, Schram; Director of Student Affairs, ex officio.

Public Relations—Chairman, Tyler; E. H. Adams, Christian, Everest, Mackenzie, C. E. Martin, Mund; Comptroller, ex officio; Director of Public Information and University Relations, ex officio; Executive Secretary of the Alumni Association, ex officio.

Rhodes Scholarship—Chairman, J. B. Harrison; K. C. Cole, Cook, Costigan, Densmore (chairman, pro tem), Lawton, Ruch.

R.O.T.C. Programs—Chairman, Pifer; M. D. Green, Lorig, Mackin, W. C. E. Wilson.

Rules—Chairman, Stirling; H. C. Douglas, Hennes; Registrar, ex officio; University Editor, ex officio.

Schedule and Registration—Chairman, Powell; S. F. Anderson, Brauer, Butterbaugh, Orell, Van Horn, Woodcock; Registrar, ex officio; Assistant to the Dean of the College of Arts and Sciences, ex officio.

Student Discipline—Chairman, Horton; K. C. Cole, Cramlet, Gose, Leahy, Reeves, Ruth Wilson; Executive Officer of the Department of Psychiatry, ex officio.

Student Organizations—Chairman, Zillman; Baisler, Crain, R. J. Johnson, Johnston, L. B. Patterson, Redford; Counselor for Men, ex officio; Associate Director of Student Affairs, ex officio.

Student Welfare—Chairman, Kidwell; Carrell, A. Edwards, Garfield, Guberlet, Helen Kahin Kaufman, McCullough, Marckworth, Mansfield, R. Sylvester; Director of Student Affairs, ex officio; Registrar, ex officio.

Tenure and Academic Freedom—Chairman, Gose; M. Benson, Densmore (pro tem), Goodspeed, Harrison, Hatch, Huber, R. Robinson, Rowntree, Sholley, T. G. Thompson, C. T. Williams.

Special Committees

Advanced Credit Examinations—Chairman, C. T. Williams; Creore, Katz.

General Education—Chairman, Pauline Johnson (Group II); Perrin (Group I), Uehling (Group III), Van Horn (Group IV), Edwards (Group V), Lorig (Group VI), L. D. Carlson (Group VII).

Investigate the Grading System—Chairman, Horst; R. P. Adams, Carrell, Dudek, Dvorak, Goldberg, W. R. Hill, Schmidt, Smullyan.

Summer Session Policy—Chairman, R. P. Adams; Corbally, Loucks, Melden, Moulton, Shipman, Sholley.

UNIVERSITY SENATE FOR 1948-1949

I. LETTERS. *Terms expire spring, 1951:* Robert Heilman, *English;* Howard Nostrand, *Rom. Lang.;* Brents Stirling, *English;* Curtis Vail, *German;* Frank Williston, *Far Eastern. Terms expire spring, 1950:* Edwin H. Adams, *Radio Education;* Sverre Arestad, *Scandinavian;* E. Harold Eby, *English;* George Taylor, *Far Eastern;* Lawrence Zillman, *English. Terms expire spring, 1949:* Donald Cornu, *English;* Harvey Densmore, *Classics;* Joseph B. Harrison, *English.*

II. ARTS. *Terms expire spring, 1951:* Ruth Penington, *Art;* Edith Woodcock, *Music. Terms expire spring, 1950:* Kathleen Munro, *Music;* Walter Isaacs, *Art. Term expires spring, 1949:* Lionel H. Pries, *Architecture.*

III. SCIENCES. *Terms expire spring, 1951:* Phil E. Church, *Meteorology;* C. Leo Hitchcock, *Botany;* Rex Robinson, *Chemistry. Terms expire spring, 1950:* George H. Cady, *Chemistry;* Edwin H. Uehling, *Physics;* Roy M. Winger, *Mathematics. Terms expire spring, 1949:* Edward C. Lingafelter, *Chemistry;* Herschel Roman, *Botany.*

IV. TECHNOLOGY. *Terms expire spring, 1951:* Alfred Miller, *Civil Engr.,* Ralph Moulton, *Chem. Engr.;* Drury Pifer, *Min. Engr. Terms expire spring, 1950:* Lauren Donaldson, *Fisheries;* George L. Hoard, *Elec. Engr.;* Gilbert Schaller, *Mech. Engr. Terms expire spring, 1949:* Austin Eastman, *Elec. Engr.;* Robert B. Van Horn, *Civil Engr.;* E. R. Wilcox, *General Engr.*

V. Social Sciences. *Terms expire spring, 1951:* Paul Horst, *Psych.;* William S. Hopkins, *Econ. Terms expire spring, 1950:* Solomon Katz, *History;* Everett Nelson, *Phil. Term expires spring, 1949:* William S. Holt, *History.*

VI. Applied Social Studies. *Terms expire spring, 1951:* Roland Belshaw, *Men's Phys. Ed.;* Stephen D. Brown, *Bus. Adm.;* Donald Mackenzie, *Bus. Adm.;* Curtis Williams, *Education; Terms expire spring, 1950:* Joseph Demmery, *Bus. Adm.;* Nathanael Engle, *Bus. Adm.;* Margaret Terrell, *Home Ec.;* Ruth Wilson, *Women's Phys. Ed. Terms expire spring, 1949:* Harry M. Cross, *Law;* Blanche Payne, *Home Ec.;* Henry A. Burd, *Bus. Adm.*

VII. Health Sciences. *Terms expire spring, 1951:* John C. Brauer, *Dent.;* Loren D. Carlson, *Physiol.;* Charles A. Evans, *Micro. Terms expire spring, 1950:* James M. Dille, *Pharmacol.;* Erling Ordal, *Micro.;* Lillian B. Patterson, *Nursing.*

ALPHABETICAL LIST OF THE UNIVERSITY FACULTY

February 28, 1949

RAYMOND BERNARD ALLEN, 1946.....President of the University
B.S., 1924, A.M., 1925, M.B., 1928, M.D., 1928, Ph.D., 1934, Minnesota; LL.D., 1946, Tulane; LL.D., 1946, Illinois; LL.D., 1946, Lake Forest College; D.Sc., 1947, Whitman

ABBOTT, GORDON A., 1948.....Consultant in Medicine
B.S., 1927, North Dakota; M.B., 1929, M.D., 1930, Northwestern

ADAMS, CATHERINE MARIE, 1946.....Instructor in Music
A.B., 1929, B.M., 1930, Coe College; M.A., 1932, Columbia

ADAMS, EDWIN HUBBARD, 1939 (1946).....Assistant Professor of Radio Education; Executive Officer of the Board of Directors of Radio Education
B.A., 1927, M.A., 1931, Washington State

ADAMS, JANET ANN, 1947 (1948).....Associate in Music
B.A., 1935, Washington

ADAMS, ROBERT PARDEE, 1947.....Associate Professor of English
B.A., 1931, Oberlin; Ph.D., 1937, Chicago

ADDINGTON, ERCELL ADELBERT, 1948.....Clinical Assistant Professor of Radiology
B.A., 1928, Carleton College (Minnesota); M.D., M.A., 1939, Minnesota

AHNQUIST, GERHARD, 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1926, Washington State; M.D., 1933, New York

AIRTH, ANNABELLE MARGARET, 1946.....Instructor in Nursing
R.N., B.S., 1946, Washington

ALBOUY, ROBERT NOEL, 1948.....Associate in Romance Languages and Literature

ALFORD, HAROLD JUDD, 1946.....Associate in English; Assistant Director of Adult Education and Extension Services
B.A., 1938, Washington

ALLIGER, RUTH MARY, 1947.....Head Teacher and Associate in the Nursery School
B.A., B.E., 1940, Washington State

ALLISON, MARY CLARA, 1944 (1948).....Acting Instructor in Romance Languages and Literature
B.A., 1926, College of Idaho; M.A., 1928, Northwestern

ALPS, GLEN EARL, 1945 (1948).....Instructor in Art
B.A., 1940, Colorado State College of Education; M.F.A., 1947, Washington

ALTOSE, ALEXANDER RICHARD, 1947.....Clinical Instructor in Medicine
M.B., 1937, M.D., 1938, Northwestern

AMASSIAN, VAHE EUGENE, 1949.....Instructor in Physiology and Biophysics
B.A., 1945, M.B., B.Ch., 1948, Trinity College, Cambridge University (England)

ANDERSON, ARTHUR G., JR., 1946 (1947).....Assistant Professor of Chemistry
A.B., 1940, Illinois; M.S., 1942, Ph.D., 1944, Michigan

ANDERSON, BERTON EMMETT, 1948...Assistant Professor in Dental Science and Literature
D.M.D., 1925, Oregon

ANDERSON, CARL ORLANDO, 1947.....Clinical Instructor in Prosthetics
D.D.S., 1924, Northwestern

ANDERSON, DONALD LORRAINE, 1947 (1948).....Instructor in Mining Engineering
B.S., 1938, St. Francis Xavier University (Nova Scotia); B.S. in Min. Engr., 1941, Illinois

ANDERSON, ELAM JONOTHAN, JR., 1947.....Associate in Psychology
A.B., 1946, University of Redlands

ANDERSON, FREDERICK NEIL, 1945 (1948).....Acting Instructor in Art
B.A., 1943, Washington

ANDERSON, HELEN CORNELIA, 1945.....Instructor in Nursing Education
R.N., 1934, Bishop Johnson College of Nursing (Los Angeles); B.S., 1945, Washington

ANDERSON, ROGER, 1948.....Senior Consultant in Orthopedic Surgery
B.S., 1915, Hamline University (Minnesota); B.S., 1918, M.D., 1918, Northwestern

ANDERSON, SYLVIA FINLAY, 1920 (1947).....Assistant Professor of English
B.A., 1919, M.A., 1923, Washington

ANDERSON, VICTORIA, 1937 (1948).....Instructor in English
B.A., 1914, M.A., 1917, 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.

ANDREWS, FRED CHARLES, 1948.....Associate in Mathematics
B.S., 1946, Washington

ANKELE, FELICITAS CHARLOTTE, 1927 (1947).....Assistant Professor of German
B.A., 1925, M.A., 1926, Ph.D., 1936, Washington

ANSELM, COURTNAY DAVID, 1949.....Research Associate in Oceanography
B.S., 1941, Washington

ANSHUTZ, HERBERT LEO, 1947 (1948).....Instructor in English
B.A., 1937, Washington

ARBINGAST, STANLEY ALAN, 1948.....Associate in Geography
B.E., 1934, Winona State Teachers College; M.A., 1948, Washington

ARESTAD, SVERRE, 1937 (1948).....Associate Professor of Scandinavian Languages; Executive Officer of the Department of Scandinavian Languages
B.A., 1929, Ph.D., 1938, Washington

ARONSON, SAMUEL FREDERICK, 1947.....Clinical Instructor in Medicine
B.S., 1927, Washington; M.D., 1936, Northwestern

ARRIGONI, LOUIS, 1941 (1945).....Assistant Professor of Pharmaceutical Chemistry
B.S., 1938, M.S., 1940, Ph.D., 1945, Washington

ASTEL, GEORGE BERNARD, 1943 (1944).....Assistant Professor of Journalism
B.A., 1923, Washington

AUERNHEIMER, AUGUST A., 1928 (1937).....Assistant Professor of Physical Education
B.P.E., 1926, Normal College of the American Gymnastic Union (Indiana);
B.S., 1931, Washington; M.A., 1932, Columbia

AULT, NELSON ALLEN, 1947.....Associate in English
B.A., 1939, M.A., 1947, Washington

AVANN, SHERWIN PARKER, 1946.....Assistant Professor of Mathematics
B.S., 1938, Washington; M.S., 1940, Ph.D., 1942, California Institute of Technology

AVERY, DON EDWARD, 1945 (1948).....Instructor in General Engineering
B.S. in M.E., 1937, Washington

AYER, LESLIE JAMES, 1916 (1947).....Professor Emeritus of Law
B.S., 1899, Upper Iowa; J.D., 1906, Chicago

BACKSTROM, MAJOR BERT HAROLD, U.S.A., 1946.....Assistant Professor of Military Science and Tactics

BAILEY, ALAN JAMES, 1939 (1942).....Associate Professor and Acting Director of Lignin and Cellulose Research
B.S., 1933, M.S., 1934, Ph.D., 1936, Washington

BAIRD, JOHN DOUGLAS, 1947.....Associate in Romance Languages and Literature
B.A., 1924, British Columbia

BAISLER, PERRY EMANUEL, 1937 (1947).....Assistant Professor of Speech
B.A., 1932, M.A., 1938, Washington

BAKER, CARVER LOWELL, 1948.....Acting Instructor in Architecture
B.Arch., 1947, Washington

BAKER, CLAUDE ROWE, 1947 (1948).....Associate Professor of Fixed Partial Denture Executive Officer of the Department of Fixed Partial Denture Prosthetics
D.D.S., 1935, B.A., 1937, M.S., 1939, Minnesota

BAKER, FREDERICK BRUCE, 1948.....Associate in Forest Products
B.A., 1932, California; M.A., 1941, Columbia

BAKER, JOEL WILSON, 1948.....Consultant in Surgery
M.D., 1928, Virginia

BAKER, KATHERINE KING, 1948.....Instructor in Nursing
B.A., 1932, California; M.A., 1941, Columbia

BAKER, WILLIAM Y., 1947.....Clinical Instructor in Psychiatry
B.S., 1931, M.D., 1933, Nebraska

BALL, RICHARD WILLIAM, 1948.....Instructor in Mathematics
B.A., 1944, M.A., 1945, Ph.D., 1948, Illinois

BALLANTINE, JOHN PERRY, 1926 (1937).....Professor of Mathematics
A.B., 1918, Harvard; Ph.D., 1923, Chicago

BALLARD, ARTHUR CONDICT, 1929.....Honorary Research Associate in Anthropology
B.A., 1899, Washington

BALLIS, WILLIAM BELCHER, 1948.....Professor of Russian Government and Politics
B.A., 1929, Stanford; Ph.D., 1936, Chicago

BANGS, JACK LESTER, 1947.....Assistant Professor of Speech
B.S., 1939, M.A., 1941, Washington

BANGS, NAN J., 1944 (1947).....Acting Instructor in Art
B.F.A., 1937, Nebraska State Teachers College (Wayne, Nebraska)

BANNICK, EDWIN GEORGE, 1947.....Clinical Professor of Medicine
B.S., 1918, M.D., 1920, Iowa

BARBEE, Capt. BILLIE M., U.S.A., 1948...Assistant Professor of Military Science and Tactics
B.A., 1941, Colorado College

BARBER, THEODORE MELVIN, 1945.....Lecturer in Nursing
B.S., 1925, M.D., 1927, Nebraska

BARKSDALE, JULIAN DEVREAU, 1936 (1943).....Associate Professor of Geology
B.A., 1930, Stanford; Ph.D., 1936, Yale

BARNES, CLIFFORD ADRIAN, 1947.....Associate Professor of Oceanography
B.S., 1930, Ph.D., 1936, Washington

BARNOWE, THEODORE JOSEPH, 1947.....Assistant Professor of Personnel Administration
B.A., 1939, Morningside College (Iowa); M.A., 1940, Ph.D., 1946, Washington

BARR, ERIC LLOYD, 1936 (1946).....Director of the Summer Sessions; Professor Emeritus of Naval Science and Tactics
Graduate, 1911, U.S. Naval Academy; Ph.D., 1938, Washington

BARR, JOHN ALTON, 1947.....Acting Assistant Professor of Elementary Education
B.S., 1936, M.A., 1938, Minnesota

BARTER, LEROY DONALD, 1947....Research Assistant in the Engineering Experiment Station
B.S. in A.E., 1942, Washington

BARTON, PAUL, 1947.....Associate in English
A.B., 1939, DePauw

BASKERVILLE, BARNET, 1948.....Assistant Professor of Speech
B.A., 1940, M.A., 1944, Washington

BATES, ALAN PHILIP, 1947.....Associate in Sociology
B.A., 1938, M.A., 1940, Washington

BATIE, HARRIETT VIRGINIA, 1941.....Associate in Education
B.S., 1935, Hastings College (Nebraska); M.A., 1945, Washington

BAUER, HARRY C., 1945 (1947).....Professor of Librarianship; Director of Libraries
B.A., 1927, M.S., 1929, Washington University (St. Louis); Certificate of Librarianship, 1931, St. Louis Library School

BEAL, MAUD LAYTON, 1933 (1947).....Assistant Professor of English
B.A., 1926, M.A., 1929, Washington

BEALE, JAMES MAC ARTHUR, JR., 1948.....Assistant Professor of Music
B.A., 1945, Harvard; B.M., 1946, M.M., 1947, Yale

BEAT, ALBERTA MARGARET, 1947 (1948).....Acting Instructor in Dental Hygiene
Cert. in Dental Hygiene, 1946, Columbia

BEAUMONT, ROSS ALLEN, 1940 (1948).....Associate Professor of Mathematics
A.B., 1936, M.S., 1937, Michigan; Ph.D., 1940, Illinois

BEEBE, WINN LAPHAM, 1949.....Clinical Instructor in Fixed Partial Dentures
D.D.S., 1929, Minnesota

BECHTEL, LENORE ALBERTA, 1948.....Associate in Humanistic-Social Studies
B.M., 1938, DePauw

BECHTHOLT, EDWARD, 1947.....Director of the Bureau of Teacher Service and Placement
B.A., 1934, M.A., 1947, Washington

BECK, ELEANOR NORDHOFF, 1932.....Associate in Music

BECKER, ROLAND FREDERICK, 1946 (1947).....Associate Professor of Anatomy
B.S., 1935, M.S., 1937, Massachusetts State; Ph.D., 1940, Northwestern

BELL, FREDERICK HEWARD, 1931.....Lecturer in Fisheries
B.A., 1924, British Columbia

BELL, MARJORIE LAWSON, 1946 (1947).....Associate in English
B.A., 1931, Washington

BELL, WARREN WATSON, 1948.....Consultant in Obstetrics and Gynecology
M.D., 1917, Vanderbilt

BELSHAW, ROLLAND ELWOOD, 1930 (1948).....Professor of Physical Education; Executive Officer of the Department of Physical Education for Men
B.A., 1927, Oregon; M.A., 1930, Columbia

BENDER, CHARLES EDWARD, 1946 (1947).....Clinical Instructor in Medicine and Assistant Health Officer
Ph.G., 1925, Ohio Northern; A.B., 1931, Ohio State; M.D., 1935, Jefferson Medical College (Philadelphia)

BENEPE, OTIS JEROME, 1947.....Associate in Psychology
B.S., 1947, Washington

BENHAM, ALLEN ROGERS, 1905 (1916).....Professor of English
A.B., 1900, A.M., 1901, Minnesota; Ph.D., 1905, Yale

BENNETT, EDWIN SAXTON, 1947.....Clinical Professor of Medicine
M.D., 1914, New York University

BENNETT, HENRY STANLEY, 1948.....Professor of Anatomy; Executive Officer of the Department of Anatomy
A.B., 1932, Oberlin College; M.D., 1936, Harvard

BENNO, NORMAN LLOYD, 1946.....Associate in Music

BENSON, EDNA GRACE, 1927 (1936).....Associate Professor of Art
B.A., 1909, Iowa; M.A., 1923, Columbia

BENSON, HENRY KREITZER, 1904 (1947).....Professor Emeritus of Chemical Engineering; Research Consultant, Departments of Chemistry and Chemical Engineering
A.B., 1899, A.M., 1902, D.Sc., 1926, Franklin and Marshall College (Pennsylvania); Ph.D., 1907, Columbia

BENSON, MERRITT ELIHU, 1931 (1948).....Professor of Journalism; Assistant Director of the School of Journalism
LL.B., 1930, Minnesota; B.A., 1942, Washington

BERGER, JOHN WILLIAM, 1948.....Associate in Economics
B.A., 1943, Washington

BERGSETH, FREDERICK ROBERT, 1947.....Assistant Professor of Electrical Engineering
B.S. in E.E., 1937, Washington; S.M. in E.E., 1938, Massachusetts Institute of Technology

BEVIS, LEURA DOROTHY, 1947.....Assistant Professor of Librarianship
B.A., 1927, Pomona; B.S. in L.S., 1947, Southern California

BICKLEY, JOHN STROCK, 1948.....Acting Assistant Professor of Insurance
B.A., 1939, M.B.A., 1947, Wisconsin

BIJOU, SIDNEY WILLIAM, 1948.....Associate Professor of Psychology; Director of the Child Development Clinic
B.S., 1933, Florida; M.A., 1936, Columbia; Ph.D., 1941, Iowa

BILL, ALEXANDER HARVEY, 1948.....Clinical Associate in Surgery
A.B., 1935, M.D., 1939, Harvard

BILLINGTON, SHEROD MARSHALL, 1947.....Clinical Instructor in Pediatrics
A.B., 1932, M.D., 1935, Vanderbilt

BINDER, BETTY JEAN, 1947.....Associate in English
B.A., 1938, M.A., 1942, Minnesota

BINGHAM, JAMES BALDWIN, Jr., 1947.....Clinical Instructor in Medicine
B.S., 1935, M.D., 1937, Wisconsin

BIRD, WINFRED WYLAM, 1928 (1946).....Associate Professor of Speech
A.B., 1926, Lawrence College; Ph.D., 1938, Iowa

BIRNBAUM, ZYGMUNT WILLIAM, 1939 (1945).....Associate Professor of Mathematics; Director of the Laboratory of Statistical Research
LL.M., 1925, Ph.D., 1929, John Casimir University (Lwow, Poland)

BITAR, EMMANUEL, 1948.....Clinical Instructor in Pathology
B.S., 1935, M.D., 1939, Oregon

BLACKMAN, JAMES, 1948.....Consultant in Surgery
A.B., 1928, Kalamazoo College (Michigan); M.D., 1932, Johns Hopkins

BLACKMAN, HELEN MARIE, 1943.....Instructor in Nursing
R.N., 1929, St. Luke's (Iowa); B.S., 1942, Washington

BLANKENSHIP, WILLIAM RUSSELL, 1932 (1943).....Professor of English
A.B., 1914, Missouri; M.A., 1929, Ph.D., 1935, Washington

BLASER, HENRY WESTON, 1946 (1948).....Associate Professor of Botany
B.S., 1931, A.M., 1933, Temple (Pennsylvania); Ph.D., 1940, Cornell University

BLATT, FRANK JOACHIM, 1948.....Associate in Electrical Engineering
B.S. in E.E., 1946, M.S., in E.E., 1948, Massachusetts Institute of Technology

BLISS, ADDIE JEANNETTE, 1922 (1937).....Associate Professor of Home Economics
B.A., 1906, Washington; M.A., 1917, Columbia

BLIVEN, PAUL, 1941.....Lecturer in General Engineering
B.S. in M.E., 1927, Minnesota; LL.B., 1933, Georgetown

BLUMENFELD, IRWIN S., 1948.....Associate in Journalism; Assistant Director of the Office of Public Information
B.A., 1930, Washington

BOEHMER, HERBERT, 1937 (1945).....Assistant Professor of General Engineering
Dipl. Ing., 1928, German Technical University; M.S. in A.E., 1933, Washington

BOGARDUS, MIRIE PLAYTER, 1948.....Acting Instructor in Home Economics
B.S., 1920, Washington

BOGGS, THEODORE HARDING, 1947.....Acting Professor of Economics
B.A., 1902, Acadia University (Nova Scotia); B.A., 1905, Ph.D., 1908, Yale

BOLTON, FREDERICK ELMER, 1912 (1947).....Professor Emeritus of Education; Research Consultant; Dean Emeritus of the College of Education
B.S., 1893, M.S., 1896, Wisconsin; Ph.D., 1898, Clark University

BONE, HUGH ALVIN, 1948.....Professor of Political Science
B.A., 1931, North Central College (Illinois); M.A., 1935, Wisconsin; Ph.D., 1937, Northwestern

BONIFAS, PAUL AMI, 1946 (1947).....Associate Professor of Art

BONNELL, MILDRED, 1947.....Assistant Professor of Home Economics; Assistant Director of the University Dining Halls
B.A., 1927, Illinois; M.A., 1942, Columbia

BOROUGHS, HOMER, JR., 1948.....Associate in Education
B.A., 1939, Western Washington College of Education; M.A., 1947, Washington

BOSTETTER, EDWARD EVERETT, 1940 (1947).....Associate Professor of English
A.B., 1935, Franklin and Marshall College (Pennsylvania); M.A., 1937, Ph.D., 1938, Princeton

BOSTWICK, IRENE NEILSON, 1930 (1942).....Assistant Professor of Music
B.M., 1922, Washington

BOTZER, WILLIAM HOLST, 1946.....Lecturer in Business Law
B.A., 1935, LL.B., 1938, Washington

BOUGHTON, GLADYS R., 1947.....Assistant Professor of Librarianship
B.A., 1932, M.S., 1939, University of Denver

BOWERMAN, CHARLES EMERT, 1946.....Assistant Professor of Sociology
A.B., 1935, Denison; M.A., 1941, Ph.D., 1948, Chicago

BOWERS, JAMES MICHAEL, 1947.....Clinical Assistant Professor of Medicine
A.B., 1922, M.D., 1925, Michigan

BOWLER, FRANK TAIT, 1947.....Clinical Instructor in Pedodontics
D.M.D., 1945, Oregon

BOWLES, ALBERT J., 1948.....Consultant in Surgery
A.B., 1919, M.D., 1923, Oregon

BOYLE, JEAN ELIZABETH, 1946.....Assistant Professor of Nursing Education
R.N., 1931, B.S., 1936, M.N., 1941, Washington

BRADFORD, FLORENCE IRENE, 1947 (1949).....Lecturer in Social Work; Supervisor of Field Work in the Graduate School of Social Work
B.S., 1939, Springfield College (Massachusetts); M.A., 1946, Chicago

BRAGG, KENNETH NORTON, 1948.....Research Associate in the Bureau of Governmental Research and Services
B.A., 1947, Washington

BRAKEL, HENRY LOUIS, 1905 (1947).....Professor Emeritus of Physics; Major Adviser of the Department of Physics
B.A., 1902, Olivet College (Michigan); M.A., 1905, Washington; Ph.D., 1912, Cornell

BRAKEL, MARY OLGA, 1947 (1948).....Research Associate in Home Economics
B.S., 1932, M.S., 1935, Washington

BRANT, DANIEL HOSMER, 1949.....Associate in Zoology
B.S., 1943, Minnesota

BRAUER, JOHN CHARLES, 1947.....Professor of Pedodontics; Executive Officer, Department of Pedodontics; Director of Postgraduate Dental Education
D.D.S., 1928, A.B., 1934, M.S., 1936, Nebraska

BRAZEAU, WENDELL PHILLIPS, 1945 (1948).....Instructor in Art
B.F.A., 1933, M.F.A., 1947, Washington

BREWER, STANLEY HAROLD, 1946 (1948).....Acting Assistant Professor of Transportation
B.A., 1942, M.B.A., 1943, Washington

BRIDGES, WILLIAM CHARLES, 1949.....Clinical Instructor in Medicine
B.S., 1938, Washington; M.D., 1940, Yale

BRIER, HOWARD MAXWELL, 1947.....Assistant Professor of Journalism
B.A., 1925, M.Ed., 1931, Washington

BRIGHTBILL, LINWOOD JAMES, 1947 (1948).....Acting Assistant Professor of General Engineering
B.S., 1931, M.S., 1933, Minnesota

BROBACK, IDA MARIE, 1948.....Acting Instructor in Home Economics
B.A., 1943, Washington

BROCKMAN, C. FRANK, 1946.....Assistant Professor of Forestry
B.S., 1924, Colorado State; M.S., 1931, Washington

BROER, MARION RUTH, 1947 (1948).....Assistant Professor of Physical Education
B.S., 1933, M.S., 1936, Wisconsin

BROWN, EDWARD GORDON, 1948.....Acting Associate Professor of Business Administration
A.B., 1929, Washington; M.B.A., 1932, Harvard

BROWN, HAROLD ROSWELL, 1948.....Lecturer in Aeronautical Engineering
B.S. in E.E., 1926, Washington

BROWN, LUNA BOWDOIN, 1947.....Assistant Professor of Social Work
B.S., 1926, Florida State College for Women; M.A., 1937, New York

BROWN, MALCOLM JOHNSTON, 1946 (1947).....Assistant Professor of English
B.A., 1931, Ph.D., 1946, Washington

BROWN, MARIE BAARSLAG, 1948.....Associate in Art
B.A., 1939, Washington

BROWN, ROBERT HENRY, 1948.....Acting Instructor in Physics
B.A., 1940, Union College (Nebraska); M.S., 1942, Nebraska

BROWN, ROBERT QUIXOTE, 1919 (1947).....Professor of General Engineering
B.S. in E.E., 1916, Washington

BROWN, ROBERT WHITCOMB, 1949.....Lecturer in Nursing
B.A., 1943, Wisconsin; M.D., 1948, Harvard; M.S., 1940, Minnesota

BROWN, SHOLIE RICHARDS, 1947.....Instructor in Speech
A.B., 1925, Wyoming; A.M., 1935, Southern California

BROWN, STEPHEN DARDEN, 1930 (1937).....Associate Professor of Business Law
LL.B., 1925, B.A., 1932, Washington; LL.M., 1938, Stanford

BRUENNER, BERTRAM F., 1938 (1948).....Clinical Instructor in Dermatology; Lecturer in Nursing
B.S., 1926, M.D., 1929, Minnesota

BRUGGEMAN, GENEVIEVE MARGARET, 1949.....Instructor in Nursing
R.N., 1928, Creighton Memorial St. Joseph's Hospital (Nebraska); B.S., 1947, Michigan

BRUMBACH, WAYNE BAKER, 1947.....Acting Instructor in Physical Education
B.S., 1943, M.S., 1947, Washington

BRYANT, Capt. JACK M., U.S.A., 1947....Assistant Professor of Military Science and Tactics

BUCK, F. A. MACKINNON, 1948.....Instructor in Chemical Engineering
B.A.Sc., 1943, M.A.Sc., 1944, British Columbia; Ph.D., 1948, Purdue

BUCKLEY, ROBERT WILLIAM, 1942.....Associate in Physical Education

BUCKNER, HUBBARD T., 1948.....Senior Consultant in Orthopedic Surgery
M.D., 1913, Jefferson Medical College (Pennsylvania)

BUECHEL, HENRY THEODORE, 1946.....Assistant Professor of Economics
B.A., 1929, M.A., 1937, Washington State

BURD, HENRY ALFRED, 1924 (1927).....Professor of Marketing; Acting Dean of the College of Business Administration
B.S., 1910, Illinois Wesleyan; M.A., 1911, Ph.D., 1915, Illinois

BURGESS, ERNEST MORTON, 1948.....Clinical Instructor in Orthopedics
A.B., 1932, Utah; M.D., 1937, Columbia

BURGESS, JANNA POTGIETER, 1937 (1947).....Assistant Professor of English
B.A., 1912, Iowa; M.A., 1928, Washington

BURKE, AGNES EVELYN, 1943 (1948).....Assistant Professor of Nursing
R.N., 1930, M.A., 1941, Western Reserve; B.S., 1930, Akron Municipal University; C.P.H.N., 1943, Washington

BURNAM, THOMAS BOND, 1946 (1947).....Associate in English
B.A., 1936, M.A., 1937, Idaho

BURNETT, ELIZABETH MC INTYRE, 1948.....Associate in Psychology
B.S., 1947, Washington

BURNS, HARRY HAMILTON, 1934 (1948).....Associate Professor of English
B.A., 1928, Ph.D., 1935, Washington

BURNS, WAYNE, 1948.....Assistant Professor of English
A.B., 1938, Miami (Ohio); A.M., 1940, Harvard; Ph.D., 1946, Cornell

BURROUGHS, CARROLL ARMAND, 1947 (1948).....Instructor in Anthropology
B.A., 1940, New Mexico

BURRUS, MARY EMMA, 1943.....Lecturer in Business Law
B.A., 1935, LL.B., 1937, Washington

BURUM, HENRY SHELTON, FCC, U.S.N., 1947.....Instructor in Naval Science

BUTLER, CHARLES, 1945.....Lecturer in Fisheries
B.S., 1929, Monmouth College (Illinois)

BUTLER, RALPH H. R., 1942 (1948).....Associate in Mathematics
B.S., 1940, M.S., 1945, Washington

BUSCHKE, FRANZ JULIUS, 1948.....Clinical Assistant Professor of Radiology
M.D., 1926, University of Berlin (Germany)

BUTLER, FRANCIS ANDREW, 1948.....Assistant Professor of Naval Science
B.S., 1942, U.S. Naval Academy

BUTTERBAUGH, GRANT ILLION, 1922 (1937).....Associate Professor of Statistics
A.B., 1916, Wisconsin; M.B.A., 1923, Washington; Ph.D., 1942, Chicago

BUXBAUM, EDITH, 1948.....Lecturer in the Graduate School of Social Work
Ph.D., 1925, University of Vienna

CADY, GEORGE HAMILTON, 1938 (1947).....Professor of Chemistry
A.B., 1927, A.M., 1928, Kansas; Ph.D., 1930, California

CAMBER, ROBERT LOUIS, 1947.....Clinical Instructor in Medicine
B.A., 1939, Reed; M.D., 1943, Oregon

CAMPBELL, ALEXANDER DUNCAN, 1946 (1948).....Clinical Instructor in Dermatology
Lecturer in Nursing
B.A., 1930, Whitman; M.D., 1934, Johns Hopkins

CAMPBELL, GORDON PORTIN, 1947.....Instructor in Mechanical Engineering
B.S. in M.E., 1945, Colorado

CAMPBELL, THOMAS HERBERT, 1945 (1946).....Assistant Professor of Civil Engineering
B.S. in C.E., 1934, Washington; M.S. in C.E., 1938, Massachusetts Institute of Technology

CANNON, ARTHUR MONROE, Jr., 1947 (1948).....Associate Professor of Accounting
B.S., 1933, C.P.A., 1936, M.A., 1947, Oregon; C.P.A., 1947, Washington

CANNON, C. VERNON, 1947.....Assistant Professor of Physics
B.S., 1935, Virginia; Ph.D., 1940, North Carolina

CANTRIL, SIMEON THEODORE, 1948.....Clinical Associate Professor of Radiology
A.B., 1929, Dartmouth; M.D., 1932, Harvard

CAPACCIO, GEORGE D., 1947.....Clinical Assistant Professor of Medicine
M.D., 1931, Virginia

CARDONA-COOPER, RODOLFO, 1948.....Instructor in Spanish
Bachiller, 1941, Liceo Sarmiento (Costa Rica); B.A., 1946, Louisiana State University

CARLBERG, EDWARD FREDERICK, Jr., 1948.....Associate in Mechanical Engineering
B.S., 1948, Washington

CARLILE, THOMAS BURHAM, Jr., 1948.....Clinical Assistant Professor of Radiology
A.B., 1936, M.D., 1939, Michigan

CARLSON, LOREN DANIEL, 1945 (1946).....Assistant Professor of Physiology;
Assistant Dean of the School of Medicine
B.S., 1937, St. Ambrose (Iowa); Ph.D., 1941, Iowa

CARMODY, L. G. CLATON, 1948.....Acting Associate Professor of Physical Education
B.A., 1947, Central Washington College of Education; M.A., 1948, Columbia

CARNEVALI, DORIS SCHOLIN BENSON, 1947.....Instructor in Nursing
B.S., 1947, Washington

CARPENTER, ALLEN FULLER, 1909 (1926).....Professor of Mathematics
A.B., 1901, D.Sc., 1937, Hastings College (Nebraska); A.M., 1909, Nebraska; Ph.D., 1915, Chicago

CARPENTER, DAVID BAILEY, 1948.....Instructor in Sociology
B.A., 1937, M.A., 1938, Washington; M.A., 1944, Columbia

CARR, KENNETH MILLS, 1944 (1948).....Instructor in Drama
B.A., 1942, Eastern Washington College of Education; M.A., 1945, Washington

CARRELL, JAMES AUBREY, 1939 (1947).....Professor of Speech
A.B., 1927, Nebraska Wesleyan; M.A., 1929, Ph.D., 1936, Northwestern

CARRILLO-ESPEJO, FRANCISCO E., 1947.....Associate in Romance Languages and Literature
Bachiller, 1947, San Marcos University (Lima)

CARRITHERS, SUSANNE, 1948.....Associate in German
A.B., 1943, Colorado College

CARTER, Capt. HAMLET R., Jr., U.S.A., 1947.....Assistant Professor of
Military Science and Tactics
B.S., 1943, U.S. Military Academy

CARTWRIGHT, PHILIP WINDSOR, 1947 (1948).....Assistant Professor of Economics;
Assistant Director of the Institute of Labor Economics
A.B., 1940, M.A., 1942, Stanford

CASTILE, DANIEL SHETLER, 1949.....Lecturer in Nursing
A.B., 1939, Fresno State College; M.D., 1943, Washington University (St. Louis)

CAVANAUGH, JOSEPH A., 1948.....Associate in Sociology
B.A., 1936, Eastern Washington College of Education; M.A., 1943, Washington

CAVE, ALICE ADELE, 1948.....Instructor in Voice
B.Mus., 1945, Eastman School of Music (New York)

CHALCRAFT, EDWIN PICKERING, 1948.....Lecturer in Journalism

CHAMBERS, E. F. S., 1948.....Consultant in Orthopedics
M.D., 1907, Pennsylvania

CHAMBERS, RICHARD POWELL, 1948.....Associate in Sociology
B.S., 1945, Washington College (Maryland); M.A., 1948, Oklahoma

CHAPMAN, STUART WEBSTER, 1947.....Associate Professor of Humanistic-Social Studies
A.B., 1927, Boston University; Ph.D., 1939, Yale

CHAPMAN, WILBERT McLEOD, 1947.....Professor of Fisheries; Director of the School of Fisheries
B.S., 1932, M.S., 1933, Ph.D., 1937, Washington

CHAPPLE, STANLEY, 1948.....Professor of Music; Director of the School of Music
Dr.Mus., Colby College (Maine)

CHENOWETH, HARRY HOLT, 1946 (1947).....Instructor in Civil Engineering
B.S. in C.E., 1937, Washington

CHESSEX, JEAN CHARLES WILLIAM, 1928 (1948).....Professor of French
B.A., 1920, B.D., 1922, M.A., 1925, Lausanne (Switzerland)

CHEW, ERIC MacMILLAN, 1947.....Clinical Assistant Professor of Medicine
B.S., 1929, Washington; M.D., 1933, Pennsylvania; M.S., 1938, Minnesota

CHEYNE, VIRGIL D., 1948.....Professor of Oral Pathology and Oral Diagnosis; Executive Officer of the Department of Oral Diagnosis
D.D.S., 1933, Iowa; B.A., 1938, Ph.D., 1940, Rochester

CHINQUE, KATHERINE MADELINE, 1947.....Instructor in Nursing
R.N., 1931, Providence Hospital (Michigan); B.S., 1946, Wayne University

CHIPPS, HENRY DAVIS, 1947 (1948).....Associate Professor of Pathology and Oncology
B.S., 1930, Alabama; M.D., 1934, University of Louisville

CHITTENDEN, HIRAM MARTIN, 1923 (1936).....Assistant Professor of Civil Engineering
B.S. in C.E., 1920, C.E., 1935, Washington

CHITTICK, VICTOR LOVITT OAKES, 1948.....Visiting Professor of English
A.B., 1905, A.M., 1906, Acadia University (Nova Scotia); A.M., 1908, Harvard; Ph.D., 1924, Columbia

CHRISTIAN, BYRON HUNTER, 1926 (1936).....Associate Professor of Journalism
B.A., 1921, M.A., 1929, Washington

CHRISTIANSON, KALMA ELEANOR, 1949.....Instructor in Nursing
R.N., 1948, B.S., 1948, Washington

CHU, SHIH-CHIA, 1947 (1948).....Assistant Professor of Chinese Languages and Literature
A.B., 1928, A.M., 1931, Yenching University

CHU, TUNG-TSU, 1947.....Research Associate in the Far Eastern and Russian Institute
B.A., 1934, M.A., 1936, Yenching University

CHURCH, PHIL EDWARDS, 1935 (1948).....Professor of Meteorology and Climatology; Executive Officer of the Department of Meteorology and Climatology
B.S., 1923, Chicago; M.A., 1932, Ph.D., 1937, Clark University

CLANCY, JOHN, 1948.....Clinical Instructor in Obstetrics and Gynecology
A.B., 1932, Montana; M.D., 1936, Jefferson Medical College (Pennsylvania)

CLANTON, JACK REED, 1947.....Assistant Professor of Civil Engineering
B.S. in C.E., 1936, Missouri School of Mines; M.S. in C.E., 1939, Pittsburgh

CLARK, CAROL LOIS, 1946.....Associate in Zoology
A.B., 1941, Baylor; M.S., 1945, Oklahoma

CLARK, DONALD HATHAWAY, 1947.....Research Associate in the Engineering Experiment Station
B.S., 1916, M.S.F., 1917, Washington

CLARK, EARL FRANKLIN, 1935.....Associate in Physical Education

CLARK, ERNEST DUNBAR, 1945.....Lecturer in Fisheries
B.A., 1908, Harvard; M.A., 1909, Ph.D., 1910, Columbia

CLARK, KENNETH COURTRIGHT, 1948.....Assistant Professor of Physics
B.A., 1940, Texas; M.A., 1941, Ph.D., 1947, Harvard

CLARK, LOIS, 1940.....Research Associate in Botany
B.A., 1907, M.A., 1910, Washington; Ph.D., 1919, Minnesota

CLAY, JAMES RICHARD, 1948.....Acting Instructor in Electrical Engineering
A.B., 1939, Butler University; M.S., 1946, Purdue

CLEIN, NORMAN WARD, 1947.....Clinical Instructor in Pediatrics
B.S., 1922, M.D., 1924, Northwestern

CLEMENS, LOIS GERARD, 1947.....Associate in English
A.B., 1935, Nebraska

CLOUD, KENNETH ALLEN, 1946.....Associate in Music
B.A., 1942, Washington

CLOUGH, RAY WILLIAM, 1945.....Lecturer in Fisheries
B.A., 1908, M.A., 1909, Tufts College; Ph.D., 1922, Washington

COCHRAN, LYALL BAKER, 1934 (1943).....Associate Professor of Electrical Engineering
B.S. in E.E., 1923, E.E., 1936, Washington

CODLING, JOHN WILLIAM, 1947.....Lecturer in Nursing
Ph.C., 1929, B.S., 1932, Washington; M.D., 1942, Oregon

COE, HERBERT EVERETT, 1935 (1947).....Senior Consultant in Surgery; Lecturer in Nursing
A.B., 1904, M.D., 1906, Michigan

COFFMAN, GRACE MAE, 1939.....Instructor in Nursing
B.A., 1920, C.P.H. N., 1929, Washington; R.N., 1925, Presbyterian Hospital (Chicago)

COHEN, JAY DAVID, 1947.....Associate in Psychology
B.A., 1941, M.A., 1947, Mississippi

COHEN, JOSEPH, 1932 (1941).....Assistant Professor of Sociology
B.A., 1925, M.A., 1927, Washington; Ph.D., 1935, Michigan

COLE, KENNETH CAREY, 1924 (1936).....Professor of Politics and Public Law; Co-director of the Institute of Public Affairs
LL.B., 1924, Oxford; Ph.D., 1930, Harvard

COLE, THOMAS RAYMOND, 1930....Professor of Educational Administration and Supervision
Ph.B., 1902, M.A., 1903, LL.D., 1931, Upper Iowa

COLE, WILLIAM DAVID, 1947.....Associate in Music
B.S., 1946, Illinois

COLLIER, IRA LEONARD, 1919.....Assistant Professor of Civil Engineering
B.S. in C.E., 1913, C.E., 1917, Washington

COLLINS, FRANK HUMISTON, 1947.....Associate in Mechanical Engineering

COLLINS, JOHN DAVISON, 1947.....Clinical Instructor in Medicine
B.S., 1933, Washington; M.D., 1937, Northwestern

COLLINS, ROBERT, 1948.....Instructor in Art
B.F.A., 1947, M.F.A., 1947, Cranbrook Academy of Art (Michigan)

COLTON, AGNES LOUISE, 1941 (1947).....Assistant Professor of English
B.A., 1925, Whitman; M.A., 1928, Oregon; Ph.D., 1939, Washington

CONNOR, Capt. FRANK WALTER, Jr., U.S.A., 1948.....Assistant Professor of Military Science and Tactics
B.A., 1933, Wisconsin

CONWAY, JOHN ASHBY, 1927 (1943).....Associate Professor of Drama
B.A., 1927, Carnegie Institute of Technology

COOK, THOMAS IRA, 1939 (1945).....Professor of Political Science
B.S., 1928, London University; Ph.D., 1937, Columbia

COOMBS, HOWARD ABBOTT, 1934 (1943).....Associate Professor of Geology
B.S., 1929, M.S., 1932, Ph.D., 1935, Washington

COOPER, LEMUEL BROWNING, 1939 (1943)..Assistant Professor of Mechanical Engineering
B.S., in M.E., 1931, Washington

CORBALLY, JOHN EDWARD, 1927 (1942).....Professor of Secondary Education and Director of Cadet Teaching
B.A., 1918, Whitworth; M.A., 1925, Ph.D., 1929, Washington

CORNU, MAX DONALD, 1928 (1943).....Associate Professor of English
LL.B., 1922, M.A., 1926, Ph.D., 1928, Washington

COSTIGAN, GIOVANNI, 1934 (1948).....Professor of History
B.A., 1926, B.Litt., 1930, M.A., 1930, Oxford; M.A., 1928, Ph.D., 1930, Wisconsin

COWLES, RALPH GANO, 1948.....Associate in Humanistic-Social Studies
B.A., 1947, Washington

COVINGTON, DUANE MONROE, 1945.....Instructor in Forestry
Resident Manager at Pack Forest
B.S.F., 1927, Washington

COX, EDWARD GODFREY, 1911 (1947).....Professor Emeritus of English; Editorial Consultant of the Department of English
B.A., 1899, Wabash College; M.A., 1901, Ph.D., 1906, Cornell

COX, TOM R., 1947.....Associate in Mathematics
B.S., 1933, College of Idaho

COX, WILLIAM EDWARD, 1919 (1923).....Professor of Accounting
B.A., 1909, M.A., 1910, Texas

CRAIN, RICHARD WILLSON, Sr., 1936 (1947).....Assistant Professor of Mechanical Engineering
B.S. in E.E., 1930, B.S. in M.E., 1931, Colorado A.M. College; M.S. in M.E., 1946, Washington

CRAMLET, CLYDE MYRON, 1920 (1948).....Professor of Mathematics
B.S., 1916, Walla Walla; M.S., 1920, Ph.D., 1926, Washington

CRAMPTON, JOSEPH HAMILTON, 1947.....Clinical Assistant Professor of Medicine
B.S., 1938, Idaho; M.D., 1941, Vanderbilt

CREEL, WILHELMINE SCHAEFFER, 1940 (1944).....Assistant Professor of Music
B.A., 1946, Washington; B.M., 1927, M.M., 1929, American Conservatory of Music (Chicago)

CREORE, ALVIN EMERSON, 1940 (1947).....Assistant Professor of Romance Languages
A.B., 1934, M.A., 1936, University of Rochester; Ph.D., 1939, Johns Hopkins

CRITTENDEN, ALDEN LARUE, 1947.....Instructor in Chemistry
B.S., 1942, Ph.D., 1947. Illinois

CROSS, HARRIET, 1932 (1941).....Assistant Professor of Nursing
R.N., 1921, Columbia Hospital (Wisconsin); B.S., 1925, Minnesota; C.P.H.N., 1938, M.N., 1940, Washington

CROSS, HARRY MAYBURY, 1943 (1945).....Associate Professor of Law
B.A., 1936, Washington State; LL.B., 1940, Washington

CROUCH, MIRIAM JANE, 1947.....Instructor in Nursing
A.B., 1939, Marietta College (Ohio); M.N., 1942, Western Reserve; M.S., 1947, Boston University

CRYSTAL, DEAN KNEELAND, 1947.....Clinical Instructor in Surgery
B.S., 1936, Washington; B.A., 1938, Oxford; M.D., 1941, Johns Hopkins

CULBERT, SIDNEY SPENCE, 1947.....Associate in Psychology
B.A., 1943, Washington

CURTIS, ELIZABETH LONG, 1930 (1947).....Assistant Professor of Art
B.F.A., 1929, M.F.A., 1933, Washington

CUTLER, RUSSELL KELSEY, 1946 (1948).....Associate Professor of Physical Education
B.Ed., 1930, U.C.L.A.; M.S., 1934, Oregon

CUTTS, ROLLIN EDWARD, 1947 (1948).....Clinical Assistant Professor of Pediatrics
B.S., 1926, M.B., 1927, M.D., 1928, Minnesota

DAKAN, CARL SPENCER, 1919 (1923).....Professor of Corporation Finance
B.S., 1910, Missouri

D'AMELIO, Major GEORGE LOUIS, 1946..Assistant Professor of Military Science and Tactics
B.S., 1940, M.A., 1941, Wisconsin

DANIELS, JOSEPH, 1911 (1923).....Professor of Mining and Metallurgical Engineering
S.B., 1905, Massachusetts Institute of Technology; M.S., 1908, E.M., 1933, Lehigh (Pennsylvania)

DANILOFF, MITCHELL M., 1947.....Associate in Slavic Languages
B.A., 1947, Washington

DASSOW, JOHN ROBERT, 1948.....Lecturer in Fisheries

DAUBEN, HYP JOSEPH, JR., 1945.....Assistant Professor of Chemistry
B.A., 1937, M.S., 1937, Ohio State; M.A., 1941, Ph.D., 1941, Harvard

DAVID, JEAN FERDINAND, 1936.....Assistant Professor of Romance Languages
Baccalaureat es Lettres, 1925, Sorbonne (Paris); B.A., 1929, M.A., 1932, Saskatchewan; Ph.D., 1936, Johns Hopkins

DAVIDSON, DANIEL SUTHERLAND, 1948.....Associate Professor of Anthropology
B.S., 1923, A.M., 1924, Ph.D., 1928, Pennsylvania

DAVIES, ROBERTS JUDSON, 1947.....Clinical Assistant Professor of Medicine
M.B., 1933, M.D., 1934, Minnesota

DAVIS, ALANSON BEWICK, 1947 (1948).....Instructor in Drama
B.A., 1947, Washington

DAVIS, CLARENCE DANIEL., 1947.....Clinical Associate in Physiology, Obstetrics and Gynecology
B.S., 1935, Massachusetts Institute of Technology; M.D., 1939, Johns Hopkins

DAVIS, JOHN BAIRD, 1946 (1947).....Acting Instructor in Art
B.A., 1936, M.A., 1937, Washington

DAVIS, MERRELL REES, 1947.....Assistant Professor of English
A.B., 1935, Whitman; M.A., 1937, Tufts; Ph.D., 1948, Yale

DAY, EMMETT ELBERT, 1947 (1948).....Assistant Professor of Mechanical Engineering
B.A., 1936, East Texas State Teachers College; B.S., 1945, M.S., 1947, Massachusetts Institute of Technology

de ALVAREZ, RUSSELL R., 1948.....Professor of Obstetrics and Gynecology; Executive Officer of the Department of Obstetrics and Gynecology
B.S., 1933, M.D., 1935, Michigan

DEAN, RUTH WHEWELL, 1949.....Instructor in Nursing
B.N., 1936, Yale; M.A., 1941, Columbia

DEERING, WILLIAM V. B., 1947.....Clinical Instructor in Pediatrics
B.S., 1933, Washington; M.B., 1937, M.D., 1938, Northwestern

de GREIFF, CARLOS, 1947.....Associate in Romance Languages and Literature
Bachiller, 1943, Academia Militar DeRamirez (Bogota)

DEHN, WILLIAM MAURICE, 1907 (1947).....Professor Emeritus of Organic Chemistry; Research Consultant in the Department of Chemistry
A.B., 1893, A.M., 1896, Hope College (Michigan); Ph.D., 1903, Illinois

DEKKER, DAVID BLISS, 1948.....Instructor in Mathematics
A.B., 1941, California; M.S., 1943, Illinois Institute of Technology

De LACY, ALLAN CLARK, 1946 (1947).....Assistant Professor of Fisheries
B.S., 1932, M.S., 1933, Ph.D., 1941, Washington

de la VEGA, ELIAS GAMALIEL, 1947.....Associate in Romance Languages and Literature
Bachiller, 1939, Colegio Nacional de Catamarca

DEL GIUDICE, FRANK, 1948..... .....Lecturer in Art

De MARSH, QUIN BERNARD, 1947.....Assistant Professor of Anatomy
B.S., 1935, Washington; M.S., 1937, M.B., 1939, M.D., 1940, Northwestern

DEMMERY, JOSEPH, 1928 (1934).....Professor of Business Fluctuations and Real Estate; Acting Executive Officer of the Department of General Business
Ph.B., 1920, M.A., 1924, Chicago

DENNY, GRACE GOLDENA, 1913 (1934).....Professor of Home Economics
B.A., 1907, Nebraska; M.A., 1919, Columbia

DENSMORE, HARVEY BRUCE, 1907 (1933)..Professor of Greek; Executive Officer of the Department of Classical Languages
A.B., 1903, Oregon; A.B., 1907, Oxford

de VRIES, MARY AID, 1921 (1939).....Associate Professor of Physical Education
B.A., 1920, Wisconsin

DEWEY, LEONARD A., 1946.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1928, M.D., 1928, Nebraska; C.P.H., 1935, D.P.H., 1939, Johns Hopkins

DIETZ, ROBERT HENRY, 1947 (1948).....Assistant Professor of Architecture
B.Arch., 1941, Washington; M.Arch., 1944, Massachusetts Institute of Technology

DILLE, JAMES MADISON, 1936 (1941).....Professor of Pharmacology; Executive Officer, Department of Pharmacology
B.S., 1930, M.S., 1933, Nebraska; Ph.D., 1935, Georgetown; M.D., 1946, Illinois

DILLE, RODGER SWAIN, 1948.....Clinical Associate in Pharmacology
Ph.C., 1931, B.S., 1932, M.S., 1933, Washington; B.M., 1938, M.D., 1939, Northwestern

DIRSTINE, MORRIS JOHN, 1946.....Clinical Associate in Anatomy and Surgery
Ph.G., 1926, Washington State; B.S., 1932, Ph.C., 1932, Washington; M.D., 1937, Northwestern

DIXON, RAYMOND THOMAS, 1948.....Associate in Mechanical Engineering
B.S. in M.E., 1948, Washington

DOBIE, EDITH, 1926 (1937).....Associate Professor of History
B.A., 1914, Syracuse; A.M., 1922, Chicago; Ph.D., 1925, Stanford

DOCTER, JACK MERTON, 1947 (1948)...Lecturer in Nursing; Clinical Associate in Pediatrics
B.S., 1937, Washington; M.D., 1941, Columbia

DODD, STUART CARTER, 1947.....Professor of Sociology; Director of the Washington Public Opinion Laboratory
B.S., 1922, M.A., 1924, Ph.D., 1926, Princeton

DOLCH, EDWARD WILLIAM, 1948.....Associate in General Engineering
B.S., 1946, Illinois

DONALDSON, L. BRUCE, 1948.....Clinical Associate in Obstetrics and Gynecology
B.S., 1935, Northwestern; M.D., 1939, Michigan

DONALDSON, LAUREN RUSSELL, 1935 (1948)....Professor of Fisheries; Director of the Applied Fisheries Laboratory
A.B., 1926, Intermountain Union College (Montana); M.S., 1931, Ph.D., 1939, Washington

DONLON, Major JAMES DAMIAN, Jr., 1946 .....Assistant Professor of Military Science and Tactics
A.B., 1935, M.B.A., 1939, Stanford

DONOHUE, JERE WILLIAM, 1949.....Research Associate in Chemistry
B.A., 1949, Montana

DORE, GEORGE DAVID, Jr., 1949.....Clinical Instructor in Oral Surgery
D.D.S., 1941, Northwestern

DORLAND, EDISON GRAHAM, 1946.....Lecturer in Nursing
B.S., 1931, M.B., 1936, M.D., 1937, Northwestern; M.A., 1933, Utah

DOUGLAS, HOWARD CLARK, 1941 (1943).....Assistant Professor of Microbiology
A.B., 1936, California

DOUGLASS, CLARENCE EADER, 1939 (1945).....Assistant Professor of General Engineering
B.S. in C.E., 1927, Washington State

DOUGLASS, DAVID ROBERT, 1947.....Instructor in General Engineering
B.S., in A.E., 1946, Washington

DRAKE, JOHN BEACH, 1948.....Instructor in Public Health and Preventive Medicine
B.S., 1921, Missouri; M.S., 1924, Washington State

DRAPER, EDGAR MARIAN, 1925 (1936)..Professor of Secondary Education and Curriculum; Executive Officer of the Department of In-Service Teacher Training in the Division of Adult Education and Extension Services
B.A., 1916, M.A., 1925, Ph.D., 1926, Washington

DRAPER, OSCAR ELDRIDGE, 1920 (1923).....Lecturer in Accounting
M.Acct., 1902, Vories Business College (Indianapolis)

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 ALWINE, 1940.....Research Associate in Microbiology
B.S., 1934, Washington

DUCKETT, MARGARET RUTH, 1947.....Instructor in English
A.B., 1926, Winthrop College (South Carolina); M.A., 1941, North Carolina

DUDEK, EDMUND EMIL, 1948.....Assistant Professor of Psychology; Director of the Bureau of Testing
A.B., 1935, M.A., 1936, Nebraska; Ph.D., 1948, Purdue

DUDLEY, ELEANOR MARGUERITE, 1948.....Instructor in Nursing
B.S., 1944, Massachusetts; M.A., 1947, Yale

DUDLEY, HOMER DANIEL, 1947.....Senior Consultant in Surgery
M.D., 1902, Northwestern

DUNCAN, GEORGE WALTON, 1948.....Assistant Professor of Surgery
M.D., 1938, Emory (Georgia)

DUNCAN, JOHN ALEXANDER, 1948.....Consultant in Surgery
B.S., 1931, Washington; M.D., 1933, McGill University (Montreal)

DUNCAN, WILLIAM RAYMOND, 1948.....Clinical Instructor in Orthopedics
M.D.C.M., 1938, McGill University (Montreal)

DUNLOP, HENRY ADAM, 1931 (1947).....Lecturer in Fisheries
B.A., 1919, M.A., 1922, British Columbia

Du PEN, EVERETT GEORGE, 1945 (1947).....Assistant Professor of Art
B.F.A., 1937, Yale

DURAND, JAY ISAAC, 1947.....Senior Consultant in Pediatrics
B.A., 1902, Minnesota; M.D., 1905, Vienna

DUSENBERY, BEA BOE, 1946 (1947).....Associate in English
A.B., 1939, Whitman; M.A., 1946, Washington

DUTTON, HARRY HORACE, 1938.....Lecturer in Nursing
M.D., 1914, Vermont

DVORAK, AUGUST, 1923 (1937)....Professor of Education; Director of Admissions Research
B.A., 1920, Ph.D., 1923, Minnesota

DWINNELL, JAMES HERBERT, 1941 (1945).....Assistant Professor of Aeronautical Engineering
B.S. in A.E., 1939, Washington

DYAR, MARGARET THEKLA, 1947.....Instructor in Botany
B.S., 1943, M.S., 1945, Washington; Ph.D., 1947, Cornell University

DYE, Lt. Comdr. IRA, U.S.N., 1947.....Assistant Professor of Naval Science

EARLE, FRANCES M., 1931 (1941).....Associate Professor of Geography
B.A., 1918, Winthrop College (South Carolina); M.S., 1926, Columbia; Ph.D., 1929, George Washington

EASTMAN, AUSTIN VITRUVIUS, 1924 (1942).....Professor of Electrical Engineering
Executive Officer of the Department of Electrical Engineering
B.S. in E.E., 1922, M.S. in E.E., 1929, Washington

EASTMAN, FRED SCOVILLE, 1927 (1943).....Professor of Aeronautical Engineering; Executive Officer of the Department of Aeronautical Engineering
B.S. in E.E., 1925, Washington; M.S., 1929, Massachusetts Institute of Technology

EASTON, DEXTER MORGAN, 1947.....Instructor in Zoology
A.B., 1943, Clark University; M.A., 1944, Ph.D., 1947, Harvard

EASTWOOD, EVERETT OWEN, 1905 (1947)..Professor Emeritus of Mechanical Engineering; Research Consultant
C.E., 1896, B.S., 1897, A.B., 1899, A.M., 1899, Virginia;
B.S., 1902, Massachusetts Institute of Technology

EBY, EDWIN HAROLD, 1927 (1947).....Professor of English
Ph.B., 1923, Chicago; Ph.D., 1927, Washington

ECKELMAN, ERNEST OTTO, 1911 (1947).....Professor Emeritus of Germanic Literature; Librarian in Germanics
B.A., 1897, Northwestern; B.L., 1898, Wisconsin; Ph.D., 1906, Heidelberg

EDMINSTER, ROBERT REGAN, 1948.....Associate in Economics
B.A., 1948, Washington

EDMUNDS, LOUIS HENRY, 1948.....Consultant in Orthopedics
A.B., 1922, Hampden-Sidney (Virginia); M.D., 1928, Virginia

EDMUNDSON, CLARENCE SINCLAIR, 1920.....Associate in Physical Education
B.S.A., 1910, Idaho

EDWARDS, ALLEN L., 1944 (1948).....Professor of Psychology
B.A., 1937, Central College (Chicago); M.A., 1938, Ohio State; Ph.D., 1940, Northwestern

EDWARDS, THEODORA, 1948.....Associate in Chemistry
B.A., 1945, Willamette

EGGERS, HAROLD EVERETT, Jr., 1948.....Clinical Associate in Anatomy; Clinical Associate in Urology
B.S., 1933, M.D., 1937, Nebraska

EGGERS, ROLF VAN KERVAL, 1942 (1948).....Clinical Instructor in Medicine; Lecturer in Nursing
B.A., B.S., 1930, North Dakota; M.D., 1933, Chicago

EICHINGER, WALTER A., 1936 (1945).....Assistant Professor of Music
B.M., 1932, M.M., 1933, Northwestern

EKLIND, HERINA IDA, 1946.....(Hon.) Assistant Professor of Nursing
R.N., 1917, Ravenswood Hospital, Chicago

EKSE, MARTIN INGVALD, 1948.....Assistant Professor of Civil Engineering
B.S., 1932, South Dakota State College; M.S., 1948, Wisconsin

ELDREDGE, RUTH VIRGINIA, 1947.....Associate in English
A.B., 1939, Central Washington College of Education

ELLERBROOK, LESTER DAMON, 1946.....Assistant Professor of Pathology
A.B., 1932, Hope College (Michigan); Ph.D., 1936, New York University

ELLIOTT, R. PAUL, 1947.....Lecturer in Fisheries
B.S., 1940, Washington

ELMENDORF, WILLIAM WELCOME, 1946 (1947).....Instructor in Anthropology
B.A., 1934, M.A., 1935, Washington

EMERSON, BETTINA MEYERHOF, 1948.....Clinical Associate in Pediatrics; Pediatrician in the Child Health Center
M.D., 1943, Johns Hopkins

EMERSON, DONALD EUGENE, 1946.....Assistant Professor of History
A.B., 1937, Ph.D., 1942, Johns Hopkins; M.A., 1938, Columbia

EMERY, DONALD WILLIAM, 1934 (1947).....Assistant Professor of English
B.A., 1927, M.A., 1928, Iowa

EMMELL, HARRY ELWIN, 1948.....Clinical Associate in Anatomy and Orthopedics
B.A., 1936, Willamette; M.D., 1940, Oregon

EMORY, Captain CAMPBELL DALLAS, U.S.N., 1947.....Professor of Naval Science
B.S., 1921, U. S. Naval Academy

ENGEL, ERNEST DIRCK, 1934 (1941).....Assistant Professor of General Engineering; Assistant to the Dean of the College of Engineering
B.S. in E.E., 1930, Washington

ENGLE, NATHANAEL HOWARD, 1941.....Professor of Business Research; Director of Bureau of Business Research
B.A., 1925, M.A., 1926, Washington; Ph.D., 1929, Michigan

ENQUIST, LUCILLE ENGDAHL, 1944 (1946).....Instructor in Speech
B.A., 1937, M.A., 1941, Washington

ERICKSON, HARVEY D., 1947.....Associate Professor of Forest Products
B.S., 1933, B.S., 1934, M.S., 1936, Ph.D., 1937, Minnesota

ERIKSEN, GOSTA, 1942.....Associate in Physical Education
B.A., 1939, Washington

ERLICH, VICTOR, 1948.....Assistant Professor of Slavic Languages and Literature
M.A., 1937, Free Polish University (Warsaw)

ESPEDAL, BIRGER ROLF, 1947.....Lecturer in Business Law
A.B., 1941, LL.B., 1947, Washington

ESPER, ERWIN ALLEN, 1927 (1934).....Professor of Psychology
B.A., 1917, M.A., 1920, Ph.D., 1923, Ohio State

ESTEVES, NELSON GERALDO, 1946 (1947).....Acting Instructor in Romance Languages and Literature
B.A., 1945, California

ETHEL, GARLAND ORAL, 1927 (1947).....Assistant Professor of English
B.A., 1923, M.A., 1927, Ph.D., 1928, Washington

EVANS, CHARLES ALBERT, 1946.....Professor of Microbiology; Executive Officer of Department of Microbiology
B.S., 1935, B.M., 1936, M.D., 1937, Ph.D., 1942, Minnesota

EVANS, DONALD GUTHERIE, 1947.....Clinical Instructor in Pediatrics
B.S., 1926, M.D., 1929, Iowa; M.P.H., 1939, D.P.H., 1940, Johns Hopkins

EVANS, ELEANOR, 1944 (1946).....Assistant Professor of Nursery Education and Acting Director of Nursery School
B.S., 1934, Illinois; M.E., 1936, Winnetka

EVANS, MERRILL De VON, 1946.....Lecturer in Nursing
A.B., Kansas State Teachers College; M.D., Kansas

EVEREST, HAROLD PHILIP, 1940 (1945).....Professor of Journalism; Director, School of Journalism
B.A., 1938, Washington

EVERETT, NEWTON BENNIE, 1946 (1948).....Associate Professor of Anatomy
B.S., 1937, M.S., 1938, North Texas State College; Ph.D., 1942, Michigan

EVOY, MATTHEW HARPUR, 1948.....Clinical Associate in Surgery
M.D., 1941, St. Louis University

EWING, ETHEL ELIZABETH, 1947.....Assistant Professor of Far Eastern Education
B.A., 1928, Muskingum College; M.A., 1936, Radcliffe; Ph.D., 1944, Cornell University

FAIRBROOK, JOHN GRAY, 1949.....Associate in General Engineering
B.S., 1945, Washington

FALKNOR, JUDSON FAHNESTOCK, 1936....Professor of Law; Dean of the School of Law
B.S., 1917, LL.B., 1919, Washington

FANG, CHAO-YING, 1949.....Research Associate in the Far Eastern and Russian Institute
B.S., 1928, Yenching University

FANG, LIEN-CHI TU, 1949.....Research Associate in the Far Eastern and Russian Institute
B.A., 1924, M.A., 1926, Yenching University

FARAH, ALFRED EMIL, 1947.....Assistant Professor of Pharmacology
B.A., 1937, M.D., 1940, American University of Beirut (Lebanon)

FARIS, ROBERT E. LEE, 1948.....Professor of Sociology
Ph.B., 1928, M.A., 1930, Ph.D., 1931, Chicago

FARNER, LLOYD MARVIN, 1946 (1947).....Assistant Professor of Public Health and Preventive Medicine
A.B., 1930, M.D., 1936, C.P.H., 1937, California

FARQUHARSON, FREDERICK BURT, 1925 (1940).....Professor of Civil Engineering; Director of Engineering Experiment Station
B.S. in M.E., 1923, M.E., 1927, Washington

FARWELL, GEORGE WELLS, 1948.....Assistant Professor of Physics
B.S., 1941, Harvard; Ph.D., 1948, Chicago

FARWELL, RAYMOND FORREST, 1921 (1940).....Professor of Transportation
B.A., 1920, California; M.A., 1926, Washington

FEEK, IRJA KNUTE, 1948.....Instructor in Nursing
R.N., 1935, Swedish Hospital (Seattle); B.S., 1948, Washington

FEI, EDWARD, 1947 (1948).....Associate in Economics
B.A., 1941, St. John's University (Shanghai); M.A., 1948, Washington

FELTON, VIRGINIA ELLEN, 1943.....Instructor in Nursing
R.N., 1936, Toronto General Hospital; B.S., 1943, Washington

FERGUSON, EVELYN VIOLET, 1948.....Acting Instructor in Physical Education
B.S., 1927, Washington

FERGUSON, GRACE BEALS, 1941 (1945).....Professor of Medical Social Work
A.B., 1917, Minnesota; M.A., 1930, Indiana

FERNALD, ROBERT LESLIE, 1945 (1947).....Assistant Professor of Zoology
A.B., 1937, Monmouth College (Illinois); Ph.D., 1941, California

FETTERLY, LLOYD COCHRANE, 1947 (1948).....Instructor in Chemical Engineering
B.S., in Chem.E., 1940, M.S., 1941, Washington

FEY, LOUIS D., 1947.....Clinical Instructor in Medicine
B.S., 1934, Washington; M.B., 1938, M.D., 1939, Northwestern

FIELDER, MARY JANE, 1948.....Acting Associate in Romance Languages and Literature
B.A., 1939, College of Puget Sound; M.A., 1941, Iowa

FINE, CHARLES SANFORD, 1948.....Clinical Instructor in Obstetrics and Gynecology
M.D., 1937, Toronto

FINLAY, DONALD WILLIAM, 1949.....Lecturer in Aeronautical Engineering
B.S., 1934, Oregon State

FINLAYSON, BLISS L., 1948.....Clinical Associate in Anatomy
B.A., 1928, Brigham Young University; M.D., 1933, Jefferson Medical College (Pennsylvania)

FINLEY, JARVIS MARION, 1948.....Associate in Sociology
B.A., 1941, Arkansas; M.A., 1947, Texas

FINLEY, JOHN A., 1946.....Instructor in Metallurgical Engineering
B.S., in Met. Engr., 1939, Michigan College of Mines

FIORINO, JOHN FRANCIS, 1948.....Clinical Associate in Obstetrics and Gynecology
B.S., 1924, M.D., 1926, St. Louis University

FISCHER, LOUIS, 1929, (1945).....Professor of Pharmaceutical Chemistry
B.S., Ph.C., 1926, M.S., 1928, Ph.D., 1933, Washington

FISH, ANDREW, 1947.....Acting Professor of History
B.A., 1920, M.A., 1921, Oregon; Ph.D., 1923, Clark University

FISHER, JAMES HAYDEN, 1945 (1947).....Instructor in General Engineering
B.S. in M.E., 1944, B.S. in E.E., 1947, Washington

FITZ, Lt. HOLLIS WATSON, USN, 1948.....Assistant Professor of Naval Science
B.S., 1928, San Diego State College; M.S., 1938, Southern California

FITZMAURICE, BERTRAND T., 1946.....Clinical Associate in Anatomy
B.S., 1930, Washington; M.D., 1934, Northwestern

FLEAGLE, ROBERT GUTHRIE, 1948.....Assistant Professor of Meteorology
A.B., 1940, Johns Hopkins; M.S., 1944, Ph.D., 1949, New York University

FLEEGE, HERBERT W., 1948.....Associate in Pedodontics
D.D.S., 1948, Iowa

FLEMING, JULIA, 1948.....Instructor in Nursing
R.N., 1931, St. Anthony School of Nursing (Denver); B.S., 1947, Colorado

FLETCHER, THOMAS LLOYD, 1948.....Associate Research Chemist, Pulp Mills Waste Research Project
A.B., 1937, M.A., 1938, Clark University

FLORER, ROBERT EMERSON, 1948.....Clinical Associate in Surgery
B.S., 1938, Western Kentucky State Teachers College; M.D., 1941, University of Louisville

FLOTHOW, PAUL, G., 1940.....Lecturer in Nursing
B.S., 1921, Nebraska; M.D., 1923, Pennsylvania; M.S., 1927, Minnesota

FLOYD, MARGARET, 1948.....Associate in General Business
B.A., 1948, Washington

FLOYD, MYRTLE LEE, 1947.....Instructor in Nursing
R.N., 1932, St. Lukes Hospital (Florida); B.S., 1943, Florida

FOOTE, EARLE GARVIN, 1947.....Instructor in Mechanical Engineering
S.B., 1942, S.M., 1946, Massachusetts Institute of Technology

FOOTE, HOPE LUCILE, 1923 (1948).....Professor of Art
A.B., 1920, Iowa State Teachers College; M.A., 1923, Columbia

FOOTE, LEONE La VERNE, 1946.....Clinical Professor of Dentistry; Special Lecturer in Nomenclature
B.S., 1928, D.M.D., 1929, Oregon

FORBES, ROBERT D., 1947.....Senior Consultant in Surgery
M.B., 1903, McGill

FORDON, JOHN VIVIAN, 1935 (1946).....Lecturer in Accounting
B.B.A., 1931, M.B.A., 1934, Washington

FORE, Capt. CHARLES H., U.S.A., 1948....Assistant Professor of Military Science and Tactics
B.A., 1939, Kansas

FORSBERG, RUTH ELLEN, 1947.....Instructor in Nursing
B.S., 1918, Rockford College (Illinois)

FOSTER, ROBERT FRANCIS, 1948.....Clinical Assistant Professor of Medicine
B.S., 1929, M.D., 1930, Northwestern

FOX, KATHERINE S., 1945 (1948).....Assistant Professor of Physical Education
B.S., 1938, Washington; M.S., 1943, Oregon

FRANCIS, BYRON FRANKLIN, 1940 (1947).....Clinical Professor of Medicine
B.S., 1922, Washington; M.D., 1926, Washington University (St. Louis)

FRANCIS, FREDERICK HENDERSON, 1949.....Clinical Instructor in Oral Surgery
D.D.S., 1936, Northwestern

FRANZKE, ALBERT LEONARD, 1936 (1939).....Associate Professor of Speech
B.A., 1916, M.A., 1923, Lawrence

FREEMAN, VICTOR JULIUS, 1947.....Instructor in Public Health and Preventive Medicine
B.A., 1941, British Columbia; M.D., 1945, Toronto

FREIN, PIERRE JOSEPH, 1903 (1947).....Professor Emeritus of Romance Languages
A.B., 1892, Williams College (Massachusetts); Ph.D., 1899, Johns Hopkins

FRENCH, GRACE MARIAN, 1947.....Research Associate in the Graduate School
B.A., 1945, Maryland

FROST, VERNON R., 1945 (1946).....Associate Professor of Journalism
B.A., 1926, Washington

FRYE, THEODORE CHRISTIAN, 1903 (1947).....Professor Emeritus of Botany; Research Consultant in the Department of Botany
B.S., 1894, Illinois; Ph.D., 1902, Chicago

FULLER, RICHARD EUGENE, 1930 (1948).....Professor of Geology
Ph.B., 1921, Yale Sheffield Scientific School; B.S., 1924, M.S., 1925, Ph.D., 1930, Washington; LL.D., 1944, Washington State

FULLER, STEVEN D., 1946 (1948).....Instructor in Art
B.A., 1939, Washington

GALLAGHER, MARIAN GOULD, 1944 (1948)..Law Librarian and Associate Professor of Law
B.A., 1935, LL.B., 1937, B.A. in L.S., 1939, Washington

GANNON, MARGARET ELIZABETH, 1949.....Instructor in Nutrition in the Child Health Center
B.A., 1932, Montana

GANZER, VICTOR MARTIN, 1947.....Assistant Professor of Aeronautical Engineering
B.A., 1933, Augustana College (Illinois); B.S. in Aero. Engr., 1941, Washington

GRACIA-PRADA, CARLOS, 1925 (1939).....Professor of Spanish
Ph.B., 1918, Colegio del Rosario (Bogota); M.A., 1924, Michigan; Ph.D., 1929, Universidad Nacional (Bogota)

GARBER, DAVID HARRISON, 1948.....Instructor in Physics
A.B., 1940, A.M., 1941, Pennsylvania

GARFIELD, VIOLA EDMUNDSON, 1937 (1945).....Assistant Professor of Anthropology
B.A., 1928, M.A., 1931, Washington; Ph.D., 1939, Columbia

GATES, CHARLES MARVIN, 1936 (1943).....Associate Professor of History
B.A., 1926, Yale; M.A., 1928, Harvard; Ph.D., 1934, Minnesota

GEBALLE, RONALD, 1946.....Assistant Professor of Physics
B.S., 1938, M.A., 1940, Ph.D., 1943, California

GEISSMAR, ELSE JOHANNA-MARIE, 1947.....Instructor in Piano
L.R.A.M., 1937, Royal Academy, London; M.M., 1944, Michigan

GERAGHTY, THOMAS PETER, 1947.....Clinical Instructor in Medicine
B.S., 1934, Washington; M.D., 1939, Oregon

GERALD, CURTIS FRANKLIN, 1947.....Assistant Professor of Chemical Engineering
B.S., 1936, Iowa State College; M.S., 1938, Cincinnati; Sc.D., 1941, Massachusetts Institute of Technology

GERMAN, WILLIAM MYNDERT, 1946.....Clinical Instructor in Fixed Partial Dentures
B.S., D.D.S., 1943, Southern California

GERSHEVSKY, NOAH DAVID, 1943 (1947).....Assistant Professor of Russian Language
B.S. in Met., 1930, Montana School of Mines

GERSHUN, THEODORE LEONARD, 1948.....Instructor in Mechanical Engineering
B.S. in M.E., 1948, Iowa

GESSEL, STANLEY PAUL, 1948.....Instructor in Forest Soils
B.S., 1939, Utah State Agricultural College

GIEDT, WALVIN ROLAND, 1946.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1933, South Dakota; M.D., 1937, Rush Medical College (Chicago); M.P.H., 1941, Johns Hopkins

GILL, DOROTHY, 1947.....Clinical Instructor in Medicine
B.S., 1931, M.S., 1932, Washington; M.D., 1938, Washington University (St. Louis)

GILLETTE, ALLETTA M., 1912 (1947).....Assistant Professor of English
A.B., 1907, Smith; M.A., 1911, Washington

GILLINGHAM, JOHN BENTON, 1947.....Assistant Professor of Economics; Assistant Director, Institute of Labor Economics
A.B., 1939, Washington State; M.A., 1941, Wisconsin

GITLER, ROBERT LAURENCE, 1946.....Associate Professor of Librarianship; Director of the School of Librarianship
A.B., 1930, Certificate in Librarianship, 1931, California; M.S., 1939, Columbia

GLENN, DAVID LEONARD, Jr., 1946 (1948).....Instructor in General Engineering
B.S. in C.E. and N.S., 1945, Washington

GLICK, ROBERT MAX, 1948.....Instructor in Civil Engineering
B.S., 1944, California

GLYNN, DOROTHY ELIZABETH, 1948.....Assistant Professor of Nursing
B.A., 1926, Colorado School of Education; R.N., 1932, Kahler Hospital (Minnesota)

GOETSCH, EDWARD JOSEPH, JR., 1948 ..... Associate in Mechanical Engineering
B.S. in M.E., 1945, Illinois Institute of Technology

GOFORTH, EUGENE GEORGE, 1948 ..... Clinical Instructor in Psychiatry
B.S., 1938; M.D., 1941, Illinois

GOGGIO, CHARLES, 1920 (1936) ..... Professor of Romance Languages
A.B., 1910, Harvard; A.M., 1914, Ph.D., 1919, Wisconsin

GOLDBERG, LEONARD D., 1947 ..... Assistant Professor of Business Law
A.B., 1943, J.D., 1945, Chicago

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., 1927, Washington

GOODSPEED, GEORGE EDWARD, 1919 (1934) ..... Professor of Geology; Executive Officer of the Department of Geology
B.S. in Min.E., 1910, Massachusetts Institute of Technology

GORMLEY, GENEVA JEFFERS, 1948 ..... Instructor in Speech
B.A., 1944, M.A., 1947, Washington

GOSE, J. GORDON, 1946 ..... Professor of Law
B.A., 1926, Whitman; LL.B., 1928, Washington

GOULD, FLORENCE JONES, 1948 ..... Instructor in English
A.B., 1928, M.A., 1931, Oregon

GOWEN, HERBERT HENRY, 1909 (1944) ..... Professor Emeritus of Oriental Studies
St. Augustine's College (Cantebury); D.D., 1912, Whitman

GOWEN, LANCE EDWARD, 1924 (1937) ..... Professor of Architecture
B.A. in Arch., 1916, M.A. in Arch., 1921, Gr. Arch., 1922, California

GRAEBNER, PHYLLIS RUTH, 1948 ..... Associate in Physical Education
A.B., 1945, Valparaiso (Indiana)

GRAF, HUBERT ARTHUR, 1936 ..... Associate in Music

GRATZER, LOUIS BERNARD, 1947 (1949) ..... Instructor and Research Associate in Aeronautical Engineering
B.S. in A.E., 1944, Washington

GRAY, FLORENCE IRENE, 1945 ..... Instructor in Nursing
R.N., B.S.N., 1945, Washington

GRAY, MARGARET LUCILE, 1948 ..... Instructor in Nursing
B.S., 1943, Washington

GRAY, ROBERT SIMPSON, 1939 (1947) ..... Instructor in Drama
B.A., 1936, M.A., 1938, Washington

GRAYUM, HELEN STOLTE, 1947 ..... Instructor in Speech
A.B., 1933, Nebraska State Teachers College (Chadron, Nebraska); M.A., 1935, Iowa

GREEN, ALVIN WARREN, 1947 ..... Instructor in Public Health and Preventive Medicine; Acting Public Health Engineer
B.S. in C.E., 1940, Iowa

GREEN, DANIEL M., 1946 ..... Associate Professor of Experimental Medicine and Therapeutics
A.B., 1931, Fordham; M.S., 1935, M.D., 1938, New York University

GREEN, MILTON DOUGLAS, 1945 ..... Professor of Law
B.A., 1926, J.D., 1928, Michigan; LL.M., 1938, Jur. Sc.D., 1944, Columbia

GREGORY, HOMER EWART, 1920 (1933) ..... Professor of Accounting
A.B., 1914, Washington State; M.A., 1917, Chicago

GREGORY, NORMAN WAYNE, 1946 (1947) ..... Assistant Professor of Chemistry
B.S., 1940, M.S., 1941, Washington; Ph.D., 1943, Ohio State

GRIFFITH, DUDLEY DAVID, 1924 (1927) ..... Professor of English
B.A., 1903, Simpson College (Iowa); Ph.D., 1916, Chicago

GRIFFITH, ROBERT LELAND, 1948 ..... Clinical Instructor in Medicine
B.A., 1932, Alabama; M.D., 1936, Harvard

GRIFFITHS, KEITH S., 1947 ..... Associate in Sociology
B.A., 1947, Washington

GRILL, LAURETTA MARKUS, 1949 ..... Lecturer in Graduate School of Social Work; Psychiatric Social Work Supervisor, Division of Counseling and Testing
B.A., 1931, Wisconsin; M.S.S., 1932, Smith College

GRISWOLD, MANZER JOHN, 1946 (1947) ..... Research Associate in the Washington Public Opinion Laboratory
B.S., 1940, Montana; M.A., 1947, Washington

GRONDAL, BROR LEONARD, 1913 (1929) ..... Professor of Forest Products
B.A., 1910, D.Sc., 1943, Bethany College (Kansas); M.S.F., 1913, Washington

GROVES, ELIZABETH ALICE, 1945 ..... Assistant Professor of Librarianship
B.A., 1929, British Columbia; B.S. in L.S., 1930, Certificate in Librarian Work for Children, 1931, Washington

GRYTBAK, MARGIT H., 1948.....Clinical Associate in Pediatrics; Director of the Child Health Center
B.S., 1930, B.M., 1932, M.D., 1933, Minnesota

GUBERLET, MURIEL LEWIN, 1943 (1946).....Instructor in English
A.B., 1910, Bethany College (Kansas); A.M., 1928, Washington

GUIDON, MICHAEL, III, 1946 (1947).....Instructor in Mechanical Engineering
B.S. in M.E., 1942, Lehigh

GULLIKSON, ALBERT CLARENCE, 1942 (1947)..Assistant Professor of General Engineering
B.S. in M.E., 1924; M.E., 1938, Washington

GUNN, ELIZABETH (McCain), 1946.....Assistant Professor of Physical Education; Clinical Physician, Health Center
B.S., 1921, Washington; M.D., 1927, Oregon

GUNTHER, ERNA, 1923 (1941).....Professor of Anthropology; Director of the Museum; Executive Officer, Department of Anthropology
A.B., 1919, Barnard; A.M., 1920, Ph.D., 1928, Columbia

GUSTAFSON, PAUL VICTOR, 1948.....Assistant Professor of Microbiology
B.S., 1936, Whitworth; M.S., 1937, Ph.D., 1942, Illinois; M.D., 1947, Chicago

GUTHRIE, EDWIN RAY, 1914 (1928)..Professor of Psychology; Dean of the Graduate School; Executive Officer of Academic Personnel
B.A., 1907, M.A., 1910, Nebraska; Ph.D., 1912, Pennsylvania; LL.D., 1945, Nebraska

GUY, MAY BORQUIST, 1948.....Clinical Associate in Pediatrics
A.B., 1923, Reed College; M.D., 1932, Cornell University; M.P.H., 1938, Harvard

GUY, PERCY F., 1947.....Clinical Instructor in Pediatrics
M.D., 1922, Michigan; M.P.H., 1938, Harvard

HAAGA, AGNES MARIE, 1947.....Instructor in Drama; Extension Representative in the Division of Adult Education and Extension Services
B.A., 1936, Siena College (Tennessee)

HAASE, MYRTLE ELIZABETH, 1947.....Instructor in Nursing
R.N., 1932, Cook County School of Nursing (Illinois); B.S., 1936, C.P.H.N., 1936, Wayne University

HADDOCK, PHILIP GEORGE, 1947.....Assistant Professor of Forestry
B.S., 1934, Ph.D., 1942, California

HAERTIG, ELMER WALTER, 1948.....Clinical Instructor in Psychiatry
M.D., 1939, Chicago

HAFFLY, GILBERT NORIE, 1948.....Clinical Associate in Anatomy
B.M., 1932, M.D., 1936, Northwestern

HAGEN, WILLIAM H., 1947.....Clinical Professor of Dental Ceramics
D.D.S., 1920, Minnesota

HAGER, PHILIP ERNEST, 1947.....Associate in English
B.A., 1939, M.A., 1946, Washington

HALD, EARL CARLSEN, 1946 (1947).....Associate Professor of Economics
B.S., 1931, A.M., 1932, Nebraska; Ph.D., 1939, California

HALL, AMY VIOLET, 1924 (1945).....Associate Professor of Humanistic-Social Studies; Acting Executive Officer of the Department of Humanistic-Social Studies
B.Ed., 1920, M.A., 1923, Ph.D., 1940, Washington

HALL, DAVID CONNOLY, 1908 (1947).....Professor Emeritus of Hygiene and Assistant Health Officer
Ph.B., 1901, Brown; Sc.M., 1903, Chicago; M.D., 1907, Rush Medical College

HALL, DONALD THORNTON, 1948.....Clinical Instructor in Surgery
B.S., 1931, Washington; M.D., 1935, Harvard

HALL, HELEN MARIE, 1931 (1943).....Associate Professor of Music
B.M., 1925, Washington

HALL, JAMES KENDALL, 1930 (1934).....Professor of Economics
B.A., 1925, M.A., 1926, Oregon; Ph.D., 1929, Stanford

HALL, NATHAN ALBERT, 1948 (1949).....Instructor in Pharmacy
B.S., 1939, Ph.D., 1948, Washington

HALL, SAMUEL J., 1948.....Medical Administrative Consultant
A.B., 1922, Maryville College (Tennessee); M.D., 1927, Louisiana

HALL, WALTER ALEXIS, JR., 1947.....Instructor in Prosthetics
B.S., D.D.S., 1938, Southern California

HALLER, MARY ELIZABETH, 1931 (1941).....Assistant Professor of Mathematics
B.A., 1924, M.S., 1931, Ph.D., 1934, Washington

HAMACK, FRANK HARTMOND, 1921 (1942).....Lecturer in Accounting
LL.B., 1916, Georgetown

HAMES, GEORGE HAMILTON, 1948.....Clinical Instructor in Medicine
B.A., 1926, Victoria College (Toronto); M.D., 1929, Toronto

HAMMER, VERNON BENJAMIN, 1947.....Instructor in General Engineering
B.S. in C.E., 1940, Washington; M.S., 1941, Harvard

HAMPSON, ROBERT EDWARDS, 1946.....Clinical Professor of Operative Dentistry
D.M.D., 1917, North Pacific College

HANAHAN, DONALD JAMES, 1948.....Instructor in Chemistry
B.S., 1941, Ph.D., 1944, Illinois

HANKS, THRIFT GENE, 1947.....Clinical Instructor in Medicine
B.S., 1934, M.S., M.D., 1939, Illinois

HANNAH, BRUCE FRANK, Jr., 1948.....Associate in English
B.A., 1940, M.A., 1942, Arizona

HANSET, Lt. Comdr. HERBERT EUGENE, U.S.N., 1947.....Assistant Professor of Naval Science
B.A., 1938, Washington

HANSON, KERMIT OSMOND, 1948.....Assistant Professor of Accounting and Statistics
A.B., 1938, Luther College (Iowa); M.S., 1940, Iowa State

HAPP, NINA MAURINE, 1945.....Lecturer in Secretarial Studies
B.A., 1930, Northwestern; M.B.A., 1937, Chicago

HARDY, MARTHA ELIZABETH, 1943 (1946).....Associate in Mathematics
B.A., 1929, Washington

HARDY, ROBERT MONTAGUE, 1949.....Instructor in Botany
B.S., 1939, Washington; M.S., 1947, Ohio State

HARKINS, HENRY NELSON, 1947.....Professor of Surgery; Executive Officer of the Department of Surgery
B.S., 1925, M.S., 1926, Ph.D., 1928, M.D., 1931, Chicago

HARLOW, JOHN STAFFORD, 1948.....Lecturer in Business Administration
A.B., 1935, Princeton; LL.B., 1939, Harvard

HARPER, FLORA GWENDOLINE, 1947.....Associate in Music
B.A., 1946, M.A., 1947, Washington

HARRINGTON, DONAL FRANCIS, 1938 (1947).....Associate Professor of Drama
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 University

HARRIS, EDISON D., 1947.....Associate Professor of Music
B.S., 1942, New York University

HARRIS, GLEN ALFRED, 1946 (1947).....Associate in English
B.S., 1923, M.A., 1924, Colgate

HARRIS, MARKHAM, 1946 (1947).....Assistant Professor of English; Editorial Consultant, Division of Adult Education and Extension Services
A.B., 1929, M.A., 1931, Williams

HARRISON, ARTHUR ELLIOT, 1948.....Associate Professor of Electrical Engineering
B.S., 1936, California; M.S., 1937, Ph.D., 1940, California Institute of Technology

HARRISON, BEATRICE ELEANORA, 1948...Associate in Romance Languages and Literature

HARRISON, HOWARD LENT, 1948.....Associate in Mechanical Engineering

HARRISON, JOSEPH BARLOW, 1913 (1933).....Professor of English
B.A., 1910, Washington; A.B., 1913, Oxford

HARRISON, ROBERT CHARLES, 1949.....Associate in Psychology
B.S., 1947, Washington

HARRISON, ROGER WEBSTER, 1945.....Lecturer in Fisheries
B.S. in Chem. Engr., 1925, Washington State; M.S., 1928, George Washington

HARSCH, ALFRED ELMER, 1930 (1940).....Professor of Law
B.A., 1926, LL.B., 1928, Washington; LL.M., 1940, Columbia

HARTZELL, HOMER VINCENT, 1948.....Clinical Assistant Professor of Radiology
A.B., 1930, Stanford; M.D., 1936, Harvard

HARWOOD, CHARLES WILSON, 1949.....Associate in Psychology
B.S., 1947, Washington

HASTINGS, WALDON HOUSTON, 1948.....Associate Professor of Fisheries
B.S., 1934, Maine; M.S., 1938, Minnesota; Ph.D., 1940, Massachusetts

HATCH, MELVILLE HARRISON, 1927 (1941).....Professor of Zoology
B.A., 1919, M.A., 1921, Ph.D., 1925, Michigan

HAUAN, MERLIN JAMES, 1928.....Lecturer in Civil, Mechanical and Electrical Engineering
B.S. in E.E., 1925, Washington

HAVEN, HALE AURAND, 1948..... Consultant in Neurosurgery
B.S., 1927, M.D., 1928, M.S., 1930, Ph.D., 1933, Northwestern

HAVERSTOCK, RICHARD TEAL, 1948.....Clinical Associate in Urology
B.S., 1933, M.D., 1936, Illinois

HAVILAND, JAMES WEST, 1946 (1947).....Clinical Assistant Professor of Medicine
A.B., 1932, Union College (New York); M.D., 1936, Johns Hopkins

HAWKINS, NANCY, 1949.....Associate in Art

HAWLEY, SYDNEY JAMES, 1948.....Consultant in Radiology
B.S., 1921, Washington; M.D., 1924, Pennsylvania

HAYDEN, ALICE HAZEL, 1942 (1946).....Associate Professor of Educational Research
Ph.C., 1928, B.S., M.S., 1929, Oregon State; Ph.D., 1932, Purdue

HAYNER, NORMAN SYLVESTER, 1925 (1937).....Professor of Sociology
B.A., 1920, Washington; A.M., 1921, Ph.D., 1923, Chicago

HAZEN, BERNICE MERRIAM, 1948.....Lecturer in Nursing
M.D., 1921, Tufts College

HEARNE, RODNEY BUGBEE, 1948.....Clinical Associate in Surgery
B.S., 1933, Washington; M.D., 1937, Harvard

HEARST, JOSEPH ALBERT, 1947.....Special Research Associate in the Institute of Public Affairs
B.A., 1940, Washington

HEATHERS, LOUISE BUSSARD, 1945.....Assistant Professor of Psychology; Senior Clinical Psychologist, Counseling Center
B.A., 1933, Washington; Ph.D., 1940, Yale

HECHTMAN, ROBERT AARON, 1949.....Associate Professor of Structural Research
B.S. in C.E., 1938, M.S. in C.E., 1939, Washington; Ph.D., 1948, Illinois

HEIBERG, MALVINA MATTHEWS, 1947.....Acting Instructor in Art
B.F.A., 1939, New York

HEILBRUN, GERT, 1948.....Lecturer in the Graduate School of Social Work and Department of Psychiatry
B.A., 1929, City College (Germany); M.D., 1935, Vienna

HEILMAN, ROBERT BECHTOLD, 1948.....Professor of English; Executive Officer of the Department of English
A.B., 1927, Lafayette College (Pennsylvania); M.A., 1930, Ohio State; M.A., 1931, Ph.D., 1935, Harvard

HEINITZ, EVA MARIA, 1948 (1949).....Assistant Professor of Music

HELMLINGE, CHARLES LOUIS, 1911 (1944).....Professor Emeritus of Romance Languages and Literature
B.Ph., 1911, German-Wallace College, Berea; A.M., 1915, Washington

HELWIG, CARL MILTON, 1948.....Consultant in Obstetrics and Gynecology
M.D., 1926, Ohio State

HEMENWAY, ANSEL ARTHUR, 1947.....Assistant Professor of Humanistic-Social Studies
B.A., 1937, Arizona

HEMENWAY, ISABEL WOLFE, 1946 (1948).....Editorial Associate, Engineering Experiment Station
B.A., 1909, Nebraska; M.A., 1912, Chicago

HENDERSON, JESSE LESTER, 1948.....Clinical Instructor in Psychiatry
B.S., 1924, Eureka College (Illinois); M.D., 1929, Washington University (St. Louis)

HENDERSON, JOSEPH EDMONDS, 1929 (1942).....Professor of Physics; Director of Applied Physics Laboratory
B.S., 1922, College of Wooster (Ohio); Ph.D., 1928, Yale

HENNES, ROBERT GRAHAM, 1934 (1947).....Professor of Civil Engineering
B.S. in C.E., 1927, Notre Dame; M.S., 1928, Massachusetts Institute of Technology

HENNING, CHARLES NATHANIEL, 1948.....Acting Assistant Professor of Finance
B.A., 1938, M.A., 1940, University of California at Los Angeles

HENRY, BERNARD STAUFFER, 1931 (1941).....Professor of Microbiology
B.S., 1925, M.A., 1926, Ph.D., 1931, California

HENRY, MARJORIE RUTH, 1947.....Associate in English
A.B., 1938, M.A., 1940, Baylor

HENRY, WILLIAM JAMES, 1948.....Acting Instructor in Mechanical Engineering
B.S. in M.E., 1907, Purdue

HENSLEY, MERDECES HOOVER, 1939 (1948).....Assistant Professor of Art
B.F.A., 1930, M.F.A., 1938, Washington

HERMANS, THOMAS GERALD, 1929 (1940).....Assistant Professor of Psychology; Chief Examiner, Bureau of Testing
B.S., 1923, M.A., 1927, Washington

HERRE, ALBERT WILLIAM C. T., 1948.....Research Associate in Fisheries
A.B., 1904, A.M., 1905, Ph.D., 1908, Stanford

HERRING, JOHN PEABODY, 1947....Research Associate in the Institute of Labor Economics
A.B., 1904, Brown; B.D., 1907, Union Theological Seminary; Ph.D., 1924, Columbia

HERRMAN, ARTHUR PHILIP, 1923 (1937).....Professor of Architecture; Director of the School of Architecture
B.A. in Arch., 1921, Carnegie Institute of Technology

HERRMANN, SIEGFRIED M., 1948.....Senior Consultant in Surgery
B.S., 1915, Hamline University (Minnesota); M.B., 1919, M.A., 1919, M.D., 1920, Denver University

HEWITT, EDWIN, 1948.....Assistant Professor of Mathematics
A.B., 1940, M.A., 1941, Ph.D., 1942, Harvard

HIGGS, PAUL McCLELLAN, 1926 (1939).....Assistant Professor of Physics
B.S., 1919, Washington

HIGHSMITH, RICHARD MORGAN, JR., 1948.....Associate in Geography
B.A., 1941, Central Washington College of Education; M.A., 1946, Washington

HILDEBRAND, ALICE GRACE, 1946 (1947).....Clinical Assistant Professor of Medicine; Lecturer in Nursing
B.S., 1934, M.D., 1936, Nebraska; M.Sc., 1940, Minnesota

HILDEBRAND, JAMES LESLIE, 1946.....Associate in Mathematics
B.A., 1938, M.A., 1940, N. Texas State Teachers College

HILE, FREDERIC WEBB, 1946 (1947).....Assistant Professor of Speech
B.Or., 1933, A.B., 1935, M.A., 1937, University of Denver;
Th.M., 1944, Iliff School of Theology

HILEN, ANDREW REUBEN, JR., 1945 (1948).....Assistant Professor of English
B.A., 1937, Washington; Ph.D., 1943, Yale

HILL, RAYMOND LEROY, 1927 (1945).....Professor of Art
Grad., 1913, Rhode Island School of Design

HILL, WILLIAM RYLAND, JR., 1941 (1947)....Associate Professor of Electrical Engineering
B.S. in E.E., 1934, Washington; M.S. in E.E., 1938, E.E., 1941, California

HIRABAYASHI, GORDON KIYOSHI, 1947.....Associate in Sociology
B.A., 1946, Washington

HITCHCOCK, CHARLES LEO, 1937 (1944).....Professor of Botany; Executive Officer of the Department of Botany
A.B., 1927, Pomona; A.M., 1929, Claremont Colleges; Ph.D., 1931, Washington University (St. Louis)

HITCHCOCK, RALPH CLARK, 1949.....Lecturer in Aeronautical Engineering
B.S. in M.E., 1937, Washington

HITCHNER, DELL GILLETTE, 1947.....Assistant Professor of Political Science
B.A., 1936, Wichita University; M.A., 1937, Missouri; Ph.D., 1940, Wisconsin

HO, PHILIP WEN JEN, 1947.....Research Associate in the Far Eastern and Russian Institute
B.A., 1938, M.A., 1941, Yenching University

HOAG, ALBERT LYNN, 1946 (1947).....Instructor in General Engineering
B.S.F., 1941, Washington

HOARD, GEORGE LISLE, 1920 (1941).....Professor of Electrical Engineering
B.S. in E.E., 1917, M.S. in E.E., 1926, Washington

HOEDEMAKER, EDWARD DAVID, 1935 (1947).....Clinical Instructor in Psychiatry; Lecturer in the Graduate School of Social Work
B.S., 1927, M.D., 1929, Michigan

HOFFMAN, KATHERINE JANET, 1942 (1945).....Assistant Professor of Nursing; Educational Director, Harborview Division
B.A., 1929, College of Puget Sound; R.N., 1934, Tacoma General Hospital;
M.N., 1941, Washington

HOFFSTADT, RACHEL EMILIE, 1923 (1939).....Professor of Microbiology
B.S., 1908, Hanover (Indiana); M.S., 1912, Ph.D., 1915, Chicago;
D.Sc., 1921, Johns Hopkins

HOGAN, MICHAEL, 1947.....Associate in Speech
B.A., 1938, Washington

HOGAN, VINCENT HALL, 1948.....Lecturer in Political Science
B.S., 1942, Ph.D., 1948, Notre Dame

HOLLAND, RUTH MALINDA ANDERSON, 1947.....Instructor in Nursing
R.N., 1935, Lutheran Deaconess School of Nursing (Chicago);
B.A., 1944, Luther College (Iowa); M.S., 1947, Western Reserve

HOLLENBECK, HOWARD B., 1947.....Lecturer in the Graduate School of Social Work
A.B., 1938, M.S., 1940, Louisville

HOLMES, CHARLES MERTON, 1948.....Clinical Instructor in Psychiatry
B.S., 1927, Washington; B.A., 1929, M.D., 1931, Oregon; Certificate, 1929,
University of Paris

HOLT, WILLIAM STULL, 1940.....Professor of History; Executive Officer of the Department of History
A.B., 1920, Cornell University; Ph.D., 1926, Johns Hopkins

HOPKINS, WILLIAM STEPHEN, 1946.....Professor of Economics; Director of the Institute of Labor Economics
B.S., 1925, M.A., 1928, Oregon; Ph.D., 1932, Stanford

HORNE, DORTHALEE BELLE, 1944.....Assistant Professor of Physical Education
B.S., 1930, Missouri; M.S., 1939, Oregon

HORSFALL, FRANK HENRY, 1936.....Associate in Music

HORST, AARON PAUL, 1947.....Professor of Psychology
A.B., 1927, California; Ph.D., 1931, Chicago

HORTON, GEORGE PLANT, 1934 (1946).....Associate Professor of Psychology; Executive Officer of the Department of Correspondence Study in the Division of Adult Education and Extension Services
B.S., 1926, M.A., 1930, Ph.D., 1932, Princeton

HORTON, ROBERT J. M., 1948.....Clinical Assistant Professor of Public Health and Preventive Medicine
A.B., 1934, Princeton; M.D., 1938, Western Reserve; M.P.H., 1947, Harvard

HORWOOD, EDGAR MILLER, 1946 (1947).....Instructor in Civil Engineering
B.S. in M.E., 1942, Georgia School of Technology

HOSHOR, JOHN PAYTON, 1947.....Assistant Professor of Speech
A.B., 1938, A.M., 1940, Washington; Ph.D., 1947, Iowa

HOSKINS, MILDRED FRANCES, 1948....Supervisor in the Graduate School of Social Work
B.A., 1937, Texas State College for Women

HOSMER, MARGARET GEORGE, 1948.....Acting Instructor in Home Economics
B.S., 1918, North Carolina

HOSSOM, HAROLD KENNETH, 1948.....Assistant Professor of Political Science
A.B., 1936, Stanford; M.F.S., 1938, Southern California; Ph.D., 1942, Princeton

HOTSON, JOHN WILLIAM, 1911 (1947).....Professor Emeritus of Botany; Research Consultant in the Department of Botany
A.B., 1901, A.M., 1902, McMaster (Toronto); Ph.D., 1913, Harvard

HOWE, JAMES BLAKE, 1948.....Lecturer in Law
LL.B., 1924, Virginia; M.B.A., 1926, Harvard

HSIA, HSIU-YUNG, 1947.....Lecturer in Chinese Language
B.A., 1941, Yenching

HSU, WELLINGTON SIANG, 1944 (1948).....Assistant Professor of Chinese Language; Assistant Professor of Zoology
B.S., 1922, Illinois; M.S., 1924, D.Sc., 1928, Harvard

HUBER, JOHN RICHARD, 1939 (1948).....Associate Professor of Economics; Acting Executive Officer of the Department of Economics
B.A., 1931, College of Wooster (Ohio); M.A., 1933, Ph.D., 1937, Princeton

HUGHES, GLENN ARTHUR, 1919 (1930).....Professor of English; Director of the School of Drama
B.A., 1916, Stanford; M.A., 1920, Washington

HUGUS, ROBERT EDWARD, 1948.....Instructor in Architecture
B.Arch., 1942, Minnesota; M.Arch., 1947, Harvard

HULSE, FREDERICK SEYMOUR, 1948.....Assistant Professor of Anthropology
A.B., 1927, M.A., 1928, Ph.D., 1934, Harvard

HUNT, ROSEMARY LONGWOOD, 1944.....Associate in Psychology
B.S., 1943, Washington

HUSTON, FRANCES BREITWEG, 1944 (1946).....Associate in English
B.A., 1931, Reed

HUTCHINS, LEWIS REID, 1946.....Clinical Associate in Anatomy and Surgery
A.B., 1928, Washington; M.D., 1935, Oregon

HUTCHINSON, JAMES CARL, 1946 (1948).....Clinical Instructor in Surgery
B.S., 1927, Idaho; M.D., 1933, Northwestern; M.S., 1945, Minnesota

HUTCHINSON, WILLIAM BURKE, 1947 (1948)..Medical Lecturer in the School of Nursing; Consultant in Surgery
B.S., 1931, Washington; M.D., 1936, McGill

HYNES, KYRAN EMMETT, 1948.....Clinical Assistant Professor of Medicine
B.M., 1935, Creighton (Nebraska); B.S., 1933, M.D., 1935, Louisiana Medical Center

INGLE, JOHN IDE, 1948.....Assistant Professor of Periodontology
D.D.S., 1942, Northwestern; M.S.D., 1948, Michigan

INGLIS, RUTH ARDELL, 1946 (1948).....Associate Professor of Sociology
A.B., 1935, M.A., 1937, Stanford; Ph.D., 1945, Bryn Mawr

IRELAND, HOSEA DEWAIN, 1948.....Clinical Instructor in Medicine
B.S., 1934, West Virginia; M.D., 1936, Virginia

IRVINE, DEMAR BUEL, 1937 (1947).....Associate 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.F.A., 1909, James Millikin University (Illinois)

JACKSON, WILLIAM THOMAS HOBDELL, 1948.....Acting Instructor in German
B.A., 1935, M.A., 1938, Sheffield University (England)

JACOBS, MELVILLE, 1928 (1945).....Associate Professor of Anthropology
A.B., 1922, College of the City of New York; A.M., 1923, Ph.D., 1931, Columbia

JACOBSEN, ANDREW BOONE, 1946 (1947)...Instructor in Electrical Engineering; Research Associate in the Engineering Experiment Station
B.S. in E.E., 1941, Washington

JACOBSEN, ELDON ERNEST, 1947.....Associate in Psychology
B.S., 1941, M.S., 1943, Utah State Agricultural College

JACOBSEN, PHILIP AMUNDS, 1927 (1939).....Assistant Professor of General Engineering; Technical Director of Audio-Visual Studies
B.S., 1926, Washington

JACOBSEN, THEODOR SIEGUMFELDT, 1928 (1941).....Associate Professor of Astronomy
B.A., 1922, Stanford; Ph.D., 1926, California

JACOBSOHN, BORIS ABBOTT, 1948.....Assistant Professor of Physics
A.B., 1938, A.M., 1939, Columbia; Ph.D., 1947, Chicago

JACOBSON, BERTHE PONCY, 1937 (1948).....Professor of Music
Conservatory of Music, Geneva; Schola Cantorum, Paris; Dalcroze School, Geneva

JACOBSON, CONRAD, 1948.....Senior Consultant in Neurosurgery
B.S., 1900, Beloit College; M.D., 1911, Johns Hopkins

JAHN, JULIUS ARMIN, 1947.....Instructor in Sociology
B.A., 1938, M.A., 1942, Minnesota

JAMISON, LAURA MAUDE, 1946.....Instructor in Nursing
R.N., B.S., 1936, Washington

JANSSEN, LAMBERT AUGUSTE ROBERT, 1949.....Associate in Romance Languages and Literature
Baccalaureat en Humanites anciennes, 1945, College de Bellevue (Belgium)

JAQUETTE, WILLIAM ALDERMAN, JR., 1947.....Clinical Instructor in Pediatrics
A.B., 1932, Harvard; M.D., 1936, Pennsylvania

JARVI, ALBERT OTTO, 1945 (1947).....Assistant Professor of Civil Engineering
B.S. in C.E., 1938, Washington; M.S. in C.E., 1939, Massachusetts Institute of Technology

JARVIS, FRED JACKSON, 1948.....Consultant in Surgery
B.S., 1932, M.D., 1932, Iowa

JEFFERSON, WILLIAM, JR., 1947.....Associate in Physical Education

JENKS, ELIZABETH MAY, 1947.....Instructor in Speech
A.B., 1920, California; M.A., 1928, Cornell University

JENSEN, ALFRED, 1930 (1947).....Associate Professor of General Engineering
B.S. in C.E., 1925, M.S. in C.E., 1937, Washington

JENSEN, CLYDE REYNOLDS, 1947.....Clinical Assistant Professor of Pathology
A.B., 1922, Dartmouth; M.D., 1925, Rush Medical College (Chicago)

JENSEN, EMIL CHRISTIAN, 1946.....Clinical Instructor in Public Health and Preventive Medicine
B.S. in C.E., 1936, Washington; M.S., 1938, Harvard

JENSEN, Col. MARSHALL NELSON, U.S.A., 1948.....Assistant Professor of Military Science and Tactics
B.S., 1941, M.D., 1943, Nebraska

JENSEN, OLE JORGEN, 1948.....Clinical Instructor in Urology
B.S., 1934, Washington; M.D.C.M., 1939, McGill; D.Med.Sc., 1944, Columbia

JENTOFT, RALPH EUGENE, JR., 1949.....Research Associate in Oceanography
B.S., 1941, Washington

JERBERT, ARTHUR RUDOLPH, 1921 (1937).....Associate Professor of Mathematics
B.S., 1916, M.S., 1923, Ph.D., 1928, Washington

JERMAIN, LEONARD LEON, 1948.....Assistant Professor of Journalism
B.S., 1940, M.S., 1946, Oregon

JESSUP, JOHN HUNNICUTT, 1926 (1927).....Associate Professor of Educational Sociology
A.B., 1920, Earlham College (Indiana); M.A., 1924, Iowa

JEWETT, ROBERT H., 1949.....Lecturer in Aeronautical Engineering
B.S. in Aero.E., 1931, Minnesota

JOBB, EMIL, 1947.....Clinical Instructor in Medicine
B.S., 1937, B.S., 1941, M.D., 1942, Wayne University

JOHNSON, ARTHUR DEAN, 1947.....Clinical Instructor in Medicine
B.A., 1934, Iowa; M.D., 1939, Northwestern

JOHNSON, Capt. BENJAMIN EDWIN, Jr., U.S.A., 1948.....Assistant Professor of Military Science and Tactics
B.B.A., 1939, Minnesota

JOHNSON, BESSIE PAULINE, 1941 (1945).....Associate Professor of Art
B.A., 1929, Washington; M.A., 1936, Columbia

JOHNSON, LILLIAN PARADISE, 1949.....Acting Instructor in Geography
B.A., 1946, Washington; M.A., 1948, Syracuse

JOHNSON, LLOYD EUGENE, 1948.....Associate in Drama
B.A., 1947, Washington

JOHNSON, LOCKREM HAROLD, 1947.....Associate in Music

JOHNSON, LUCILLE MARGUERITE, 1949.....Associate in English
B.A., 1940, Concordia (Minnesota); M.A., 1943, Washington State College

JOHNSON, MARY LOUISE, 1945 (1947).....Assistant Professor of Home Economics
B.A., 1940, Hardin-Simmons (Texas); M.S., 1942, Wisconsin

JOHNSON, PETER DANE, 1948.....Assistant Professor of Ceramic Engineering
B.S., 1941, Bethany (West Virginia); Sc.D., 1948, Massachusetts Institute of Technology

JOHNSON, ROBERT JOSEPH, 1946 (1947).....Assistant Professor of Anatomy
M.D., 1943, Iowa

JOHNSTON, KATHLEEN ARDIES, 1946 (1947).....Assistant Professor of Home Economics
B.A., 1933, British Columbia; B.S., 1940, Washington; Ph.D., 1946, Cornell University

JOHNSON, WALTER GILBERT, 1948 (1949)..Associate Professor of Scandinavian Languages
B.A., 1927, Augsburg College (Minnesota); M.A., 1929, Minnesota; Ph.D., 1935, Illinois

JONES, CHARLES HERBERT, 1948.....Lecturer in Nursing
B.S., 1940, Washington; M.D., 1943, Oregon

JONES, EARL IVERSON, 1948.....Associate in Psychology
B.A., 1941, M.A., 1948, Utah

JONES, ERNEST MORGAN, 1945.....Professor of Operative Dentistry; Dean of the School of Dentistry
D.D.S., 1916, Northwestern

JONES, GEORGE EVERETTE, 1949.....Clinical Instructor in Oral Surgery
D.D.S., 1932, Iowa

JONES, MARSHALL HENRY, 1946.....Clinical Associate in Anatomy
M.D., 1927, Northwestern

JONES, NANCY TAYLOR, 1949.....Associate in Psychology
B.S., 1942, M.A., 1947, Utah

JONES, ROBERT WILLIAM, 1920 (1934).....Professor of Journalism
B.A., 1906, LL.B., 1913, Missouri; M.A., 1918, South Dakota

JONES, Colonel WILLIAM HENRY, Jr., 1946.....Professor of Military Science and Tactics; Executive Office of Department of Military Science and Tactics
B.A., 1908, Ogden College (Kentucky); B.S., 1913, U. S. Military Academy

JONQUET, EUGENE MAURICE, 1940 (1946).....Assistant Professor of Social Work
B.A., 1932, James Millikin University (Illinois); M.A., 1933, M.S.W., 1938, Washington University (St. Louis)

JOPPA, ROBERT GLENN, 1947.....Instructor and Research Associate in Aeronautical Engineering
B.S. in A.E., 1945, Washington

JOY, FREDERICK B., 1947.....Clinical Instructor in Pediatrics
B.A., 1929, M.D., 1931, Oregon

JULOW, ROY GEORGE, 1948.....Associate in Romance Languages and Literature
B.A., 1940, M.A., 1948, Missouri

KAHL, JOHN A., 1946....Clinical Assistant Professor of Public Health and Preventive Medicine
B.S., 1933, M.D., 1935, Nebraska; M.P.H., 1940, Johns Hopkins

KAHN, ROBERT LUDWIG, 1948.....Acting Instructor in German
B.A., 1944, M.A., 1945, Dalhousie University (Nova Scotia)

KANYER, RUBY, 1948.....Instructor in Nursing
R.N., B.S., 1944, Washington

KAPLAN, CHARLES, 1948.....Clinical Associate in Pediatrics
B.A., 1934, M.D., 1937, Toronto

KASTNER, ETHEL DEVER, 1948.....Instructor in Far Eastern History
B.A., 1943, M.A., 1945, Washington

KATZ, SOLOMON, 1936 (1943).....Associate Professor of History
A.B., 1930, Ph.D., 1933, Cornell University

KAUFMAN, HELEN ANDREWS, 1930 (1943).....Assistant Professor of English
B.A., 1909, Wilson College (Pennsylvania); M.A., 1911, Indiana; Ph.D., 1934, Washington

KAUFMAN, S. HARVARD, 1945 (1947).....Clinical Assistant Professor of Psychiatry; Psychiatrist, Health Center
B.S., 1934, M.D., 1936, Wisconsin

KECHLEY, GERALD RAYMOND, 1947.....Associate in Music
B.A., 1946, Washington

KELEZ, GEORGE BOTHWELL, 1949.....Lecturer in Fisheries
B.S., 1930, Washington; A.M., 1932, Stanford

KELLER, ABRAHAM CHARLES, 1948.....Assistant Professor of French
B.A., B.S., 1936, M.A., 1937, Ohio State; Ph.D., 1946, California

KELLER, JEAN PAUL, 1948.....Instructor in Spanish
B.A., 1933, Heidelberg College (Ohio); M.A., 1940, Ohio State

KELLOGG, HOWARD B., 1946 (1948).....Clinical Associate Professor of Anatomy
B.S., 1922, Washington; M.S., 1925, Ph.D., 1927, M.B., 1929, M.D., 1930, Northwestern

KELLOGG, MILFORD KIRTLAND, 1949.....Associate in Accounting
B.A., 1941, Washington State

KENNEDY, FRED WASHINGTON, 1909 (1947).....Professor Emeritus of Journalism; Consultant on Press Relations

KENNY, DOUGLAS TIMOTHY, 1947.....Associate in Psychology
B.A., 1945, M.A., 1947, British Columbia

KENWORTHY, RAY W., 1929 (1939).....Assistant Professor of Physics
B.A., 1924, M.S., 1925, Iowa; Ph.D., 1938, Washington

KERR, GEORGE H., 1947.....Lecturer in the Department of Far Eastern and Slavic Languages and Literature
A.B., 1932, Rollins College; M.A., 1935, University of Hawaii

KIDD, EUGENE LINWOOD, 1947.....Clinical Instructor of Medicine
S.B., 1935, Washington; M.D., 1939, Rush Medical College

KIDWELL, M. KATHRO, 1939 (1944).....Assistant Professor of Physical Education
B.S., 1927, Nebraska; M.S., 1928, Wisconsin

KIMBALL, CHARLES DUNLAP, 1948.....Clinical Instructor in Obstetrics and Gynecology
M.D., 1934, Buffalo

KIMMEL, Colonel EDWARD, U.S. Army, retired, 1932 (1946).....Professor Emeritus of Military Science and Tactics
B.S., 1897, M.A., 1907, Washington State

KINCAID, TREVOR, 1899 (1947).....Professor Emeritus of Zoology; Research Consultant in the Department of Zoology
B.S., 1899, Washington; D.Sc., 1940, College of Puget Sound

KING, BRIEN THAXTON, 1947.....Senior Consultant in Surgery
M.D., 1911, Vanderbilt

KING, ROBERT LEONARD, 1947.....Clinical Assistant Professor of Medicine
M.D., 1928, B.S., 1931, Virginia

KINGSTON, JOHN MAURICE, 1940 (1946).....Assistant Professor of Mathematics
B.A., 1935, Western Ontario; M.A., 1936, Ph.D., 1939, Toronto

KINSCELLA, HAZEL GERTRUDE, 1942 (1947).....Professor of Music
B.M., 1916; B.F.A., 1928, B.A., 1931, Nebraska; M.A., 1934, Columbia; Ph.D., 1941, Washington

KINTNER, NANCY JANE, 1942.....Instructor in Nursing Education
R.N., B.S., 1940, Washington

KIRBY, BERNARD CROMWELL, 1948.....Associate in Sociology
B.A., 1929, Dennison University (Ohio)

KIRCHHEIMER, WALDEMAR FRANZ, 1948.....Instructor in Microbiology
M.D., 1947, University of Giessen (Germany)

KIRCHNER, GEORGE C., 1919 (1939).....Assistant Professor of Music
Grad., 1911, University of Leipzig

KIRSTEN, FREDERICK KURT, 1915 (1946)..Research Professor of Aeronautical Engineering
B.S., in E.E., 1909; E.E., 1914, Washington

KITZHABER, ALBERT RAYMOND, 1948.....Associate in English
B.A., 1939, Coe College (Iowa); M.A., 1941, Washington State

KLEMPERER, WOLFGANG W., 1948.....Clinical Associate in Anatomy and Neurosurgery
M.D., 1936, Cornell

KLIMA, JOAN ROBERTS, 1946 (1948).....Instructor in Marketing
A.B., 1940, College of Puget Sound; M.S., 1941, New York University

KLOBUCHER, MARION LOUISE, 1948.....Associate in English
B.A., 1938, Whitman College

KNECHT, NORBERT FRANCIS, 1948.....Research Associate in the Municipal Research and Services

KOLB, BURTON A., 1948.....Instructor in Finance
A.B., 1946, M.B.A., 1947, Michigan

KOLESAR, JOHN, T.Sgt., U.S.M.C., 1947.....Instructor in Naval Science

KOSOBUD, RICHARD, 1948.....Associate in Management
B.S., 1946, Illinois

KRANTZ, CLEMENT IRENEUS, 1947.....Clinical Assistant Professor of Medicine
A.B., 1920, M.D., 1924, Johns Hopkins

KRASTIN, AUDREY ANNA, 1948.....Associate in Physical Education
B.S., 1947, Rutgers University

KRAUSE, ROBERT PAUL, 1948.....Instructor in Mechanical Engineering
B.M.E., 1947, Detroit

KREBS, EDWIN GERHARD, 1948.....Assistant Professor of Biochemistry
B.S., 1940, Illinois; M.D., 1943, Washington University (St. Louis)

KRETZLER, HARRY HAMLIN 1947.....Clinical Instructor in Medicine
B.S., 1921, M.D., 1923, Nebraska

KRUPSKI, EDWARD, 1944 (1947).....Instructor in Pharmaceutical Chemistry
B.S., 1939, M.S., 1941, Washington

KUETHER, CARL ALBERT, 1946.....Assistant Professor of Biochemistry
A.B., 1936, University of Miami (Ohio); M.S., 1940, Wayne University; Ph.D., 1943, George Washington University

KUHN, BERTHA MEHITABLE, 1940 (1947).....Assistant Professor of English
B.A., 1916, M.A., 1917, North Dakota; Ph.D., 1941, Washington

KUNDE, NORMAN FREDERICK, 1930 (1937).....Assistant Professor of Physical Education
B.S., 1928, M.S., 1932, Washington; D.Ed., 1946, New York University

KUSIAN, ROSS NORTHEY, 1949.....Associate in Mechanical Engineering

LAMPMAN, ROBERT JAMES, 1948.....Acting Assistant Professor of Economics
B.A., 1942, Wisconsin

LAMSON, OTIS FLOYD, 1947.....Senior Consultant in Surgery
M.D., 1907, Pennsylvania

LANCZOS, CORNELIUS, 1948.....Lecturer in Physics
Ph.D., 1921, University of Szeged (Hungary)

LANDBERG, HARRY MORTON, 1948.....Lecturer in Nursing
B.S.M., 1937, Northwestern; M.D., 1939, Loyola University (Chicago)

LANGENHAN, HENRY AUGUST, 1947.....Lecturer in Pharmacy
Ph.C., 1909, Illinois; B.S., 1914, M.S., 1916, Ph.D., 1918, Wisconsin

LANKFORD, MARGARET ALICE, 1946.....Instructor in Nursing
R.N., 1943, St. Mary's School of Nursing (Minnesota);
B.S., 1944, College of St. Teresa (Minnesota)

LANTOS, THOMAS PETER, 1948.....Associate in Hungarian Language

LARROWE, CHARLES PATRICK, 1948.....Associate in Economics
B.A., 1946, Washington

LARSON, CHARLES P., 1947 (1948).....Clinical Assistant Professor of Pathology
B.A., 1931, Gonzaga (Spokane); M.D., C.M., 1936, McGill

LASATER, JAMES HARVEY, 1948.....Clinical Instructor in Psychiatry
B.S., 1934, Washington; M.D., 1939, George Washington University

LASHER, EARL PARSONS, Jr., 1946 (1948).....Assistant Professor of Anatomy; Clinical Instructor in Surgery
B.A., 1931, M.D., 1934, Cornell University

LATOURETTE, HAROLD KENNETH, 1949.....Research Associate in Chemistry
A.B., 1947, Whitman College

LAUBHAN, ROYLE KENNETH, 1948.....Instructor in Anatomy
A.B., 1936, M.D., 1941, Stanford

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

LAVASKA, ANNA, 1946.....Instructor in Russian Language
B.A., 1946, Washington

LAW, DAVID BARCLAY, 1947 (1948).....Associate Professor of Pedodontics
B.S.D., 1938, D.D.S., 1938, M.S., 1941, Northwestern

LAWRENCE, CHARLES WILSON, 1926 (1934).....Associate Professor of Music
B.M., 1918, Oberlin; M.A., 1930, Washington

LAWS, E. HAROLD, 1947.....Clinical Instructor in Medicine
B.S., 1938, M.D., 1940, Indiana

LAWSON, JANE SORRIE, 1922 (1948).....Professor of English
M.A., 1907, St. Andrews (Scotland)

LAWSON, LEONARD LLOYD, 1949.....Associate in General Business
B.A., 1939; B.Ed., 1941, Washington State

LAWTON, GRAHAM HENRY, 1947.....Assistant Professor of Geography
B.A., 1934, B.Ed., 1936, Melbourne; B.A., 1941, M.A., 1944, Oxford

LAY, COY LAFAYETTE, 1947.....Clinical Associate in Anatomy
M.D., 1946, Texas

LAZARUS, ALFRED S., 1948.....Associate Professor of Public Health and Preventive Medicine
A.B., 1935; M.A., 1937, Ph.D., 1938, California

LEAHY, KATHLEEN MABEL, 1927 (1943).....Associate Professor of Nursing; Director of Field Work
R.N., 1921, Stanford; A.B., 1926, C.P.H.N., 1927, Oregon; M.S., 1931, Washington

LEAVITT, DARRELL G., 1948.....Consultant in Orthopedics
M.D., 1927, Oregon

LEAVITT, HARRY LINWOOD, 1947, (1948).....Lecturer in the School of Nursing; Consultant in Orthopedics
B.A., 1927, Oregon; M.D., 1930, Michigan

LE COCQ, EDWARD ANTHONY, 1948.....Consultant in Orthopedics
B.A., 1926, M.D., 1929, Oregon

LE COCQ, JOHN F., 1948.....Senior Consultant in Orthopedic Surgery
M.D., 1925, N.B., 1926, Oregon

LEEDE, WILLIAM EDWARD, 1947.....Clinical Instructor in Medicine
B.S., 1934, M.D., 1937, Oregon

LEDEBOER, Lt. Col. FREDERIC W. C., U.S.A., 1948.....Assistant Professor of Military Science and Tactics
B.S., 1927, Southern California

LEE, ALBERT FRANCIS, 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1935, College of Puget Sound; M.D., 1937, Duke University

LEE, CHI-YUAN, 1948.....Associate in Electrical Engineering
B.S. in E.E., 1947, Cornell University; M.S. in E.E., 1948, Washington

LEE, KYUNG-SUN, 1948.....Associate in Korean Language
B.A., 1922, Korea

LEE, SHERMAN EMERY, 1948.....Lecturer in Art
A.B., 1938, M.A., 1939, American University; Ph.D., 1941, Western Reserve

LEGG, HERBERT, HUGH, JR., 1947.....Research Associate, Bureau of Governmental Research and Services
B.A., 1942, Central Washington College of Education

LEHMANN, STANLEY WINEMAN, 1948.....Associate in Psychology
B.A., 1947, Stanford

LEIMAN, JOHN MELVIN, 1947.....Associate in Psychology
B.S., 1940, Ohio; M.S., 1946, Oregon

LEMERE, FREDERICK, 1946 (1947).....Clinical Professor of Psychiatry, and Acting Chairman of the Section on Psychiatry
M.A., 1930, M.D., 1932, Nebraska

LEMON, BERLAN, 1947.....Associate in Psychology
B.S., 1941, Oregon State; M.S., 1948, Oregon

LESTER, CHARLES NELSON, 1939 (1947).....Clinical Instructor in Medicine; Assistant Director of the Health Center
B.A., 1928, M.D., 1934, Colorado

LEVY, ERNST, 1937.....Professor of History, Law, and Political Science
LL.D., 1906, Berlin

LEWIS, LAUREL JONES, 1946 (1949).....Associate Professor of Electrical Engineering
A.B., 1933, E.E., 1935, Ph.D., 1947, Stanford

LINBURG, DONNAMAE ELIZABETH, 1948.....Instructor in Nursing
B.S., 1944, Seattle University

LINCOLN, MIRIAM, 1947.....Clinical Assistant Professor of Medicine
A.B., 1922, Radcliffe; M.S.S., 1923, Smith; M.D., 1932, Rochester

LINDAHL, WALLACE WILLIAM, 1947 (1948).....Clinical Associate in Anatomy
B.S., 1933, Washington State; M.D., 1938, Northwestern

LINDBLOM, ANNA MATHILDA, 1948.....Instructor in Nursing
B.A., 1941, Colorado State College of Education

LINDBLOM, ROY ERIC, 1924 (1945).....Professor of Electrical Engineering
B.S. in E.E., 1922, M.S. in E.E., 1929, Washington

LINDEN, HARRY EUGENE, 1947.....Instructor in Music

LINGAFELTER, EDWARD CLAY, Jr., 1939 (1947).....Associate Professor of Chemistry
B.S., 1935, Ph.D., 1939, California

LIPPINCOTT, STUART WELLINGTON, 1946.....Professor of Pathology; Executive Officer of the Department of Pathology
A.B., 1929, Clark University; M.D., C.M., 1935, McGill

LISLE, RUTH, 1946.....Associate in Classical Languages
B.A., 1938, Washington

LIU, JAMES TZE-CHIEN, 1948.....Research Associate in Far Eastern
B.A., 1943, China University

LOE, RALPH HARVEY, 1948.....Consultant in Surgery
B.S., 1925, Washington; M.D., 1928, Pennsylvania

LOEFFLER, MANUEL JOHN, 1949.....Associate in Geography
B.S., 1946; M.A., 1948, Colorado

LOEW, EDGAR ALLAN, 1909 (1923).....Professor of Electrical Engineering; Dean Emeritus of the College of Engineering
B.S. in E.E., 1906, E.E., 1922, Wisconsin

LOGAN, ROLF F., 1947.....Associate in Music
B.S., 1947, North Dakota State Teachers College

LONGWELL, LESLIE T., 1947.....Associate in Russian Language
B.A., 1936, M.A., 1940, Washington

LOOMIS, GORDON JAMES, 1948.....Associate in Electrical Engineering
B.S. in E.E., 1944, Washington

LOOMIS, TED ALBERT, 1947.....Assistant Professor of Pharmacology
B.S., 1939, Washington; M.S., 1941, Ph.D., 1943, University of Buffalo; M.D., 1946, Yale

LORIG, ARTHUR NICHOLAS, 1934 (1941).....Associate Professor of Accounting
B.A., 1922, Wisconsin; C.P.A., 1927; M.A., 1932, Stanford; Ph.D., 1936, Chicago

LOUCKS, ROGER BROWN, 1936 (1948).....Professor of Psychology; Executive Officer of Department of Psychology
B.S. in C.E., 1927, Ph.D., 1930, Minnesota

LOUGHLEN, IVAN KAY, 1948.....Clinical Associate in Orthopedics
B.S., 1939, Washington; M.D., 1943, Oregon

LOUGHRIDGE, DONALD HOLT, 1931 (1942).....Professor of Physics
B.S., 1923, Ph.D., 1927, California Institute of Technology

LOUNSBURY, WARREN CARSON, 1948.....Acting Instructor in Drama
A.B., 1946, Western Reserve

LOVELL, REGINALD IVAN, 1948.....Acting Professor of History
A.B., 1923, University of London; A.M., 1925, Michigan; Ph.D., 1932, Harvard

LOVETT, WENDELL HARPER, 1948.....Instructor in Architecture
B.A., 1947, Washington; M.A., 1948, Massachusetts Institute of Technology

LOWRY, STELLA MAY, 1944 (1947).....Instructor in Art
B.A., 1936, Washington

LUBITZ, THELMA GOLDIE, 1948.....Instructor in Nursing
B.A., 1944, Brooklyn College; R.N., 1947, M.N., 1947, Yale

LUBY, GRACE KATHRYN, 1947.....Instructor in Nursing
B.S., 1944, George Peabody College (Tennessee); R.N., 1928, Creighton Memorial, St. Joseph's Hospital (Nebraska)

LUCAS, HENRY STEPHEN, 1921 (1934).....Professor of History
A.B., 1913, Olivet (Michigan); A.M., 1915, Indiana; Ph.D., 1921, Michigan

LUECK, DAVID WILLIAM, 1947 (1948).....Instructor in Aeronautical Engineering
B.S.E., 1943, M.S.E., 1947, Michigan

LUND, PAUL K., 1947.....Clinical Assistant Professor of Pathology
B.A., 1934, Carleton College (Minnesota); M.D., C.M., 1940, McGill

LUNDBERG, GEORGE ANDREW, 1945.....Professor of Sociology; Executive Officer of the Department of Sociology
B.A., 1920, North Dakota; M.A., 1923, Wisconsin; Ph.D., 1925, Minnesota

LUNDMARK, VERNON OSCAR, 1948.....Clinical Associate in Surgery
M.D., 1936, Washington University (St. Louis)

LUNDY, HOWARD WINSTON, 1946.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1932, Washington State; M.S., 1934, St. Louis University Medical School; Dr. P.H., 1939, Massachusetts Institute of Technology

LUTEY, WILLIAM GLEN, 1934 (1940).....Instructor in Liberal Arts
B.A., 1930, M.A., 1931, Washington

LYLE, FLORENCE COHENOUR, 1948.....Associate in Chemistry
B.S., 1944, Utah

LYMAN, JOHN C., 1948.....Senior Consultant in Surgery
B.S., 1909, Whitman; M.D., 1913, Johns Hopkins; D.Sc., 1946, Whitman

LYNCH, JAMES ERIC, 1931 (1943).....Professor of Fisheries
B.A., 1917, M.A., 1921, Nebraska; Ph.D., 1929, California

LYNCH, JOHN FRANCIS, 1947.....Associate in Romance Languages and Literature
B.A., 1934, M.A., 1937, Washington

McADAMS, LAURA ELIZABETH, 1941 (1945).....Assistant Professor of Home Economics
B.S., 1923, M.S., 1932, Kansas State

McCARTHY, JOSEPH LePAGE, 1941 (1947).....Associate Professor of Chemical Engineering
B.S. in Chem. E., 1934, Washington; M.S., 1936, Idaho; Ph.D., 1938, McGill

McCLENAHAN, RICHARD MYRL, SOC, U.S.N., 1948.....Instructor in Naval Science

McCONAHEY, JAMES M., 1921 (1947).....Professor Emeritus of Accounting; Adviser to Professional Accounting Students
B.S., 1896, M.S., 1899, Washington and Jefferson College; LL.B., 1899, Northwestern; C.P.A., 1916.

McCONVILLE, BERNARD EDWARD, 1948.....Clinical Associate in Orthopedics
B.S., 1935, M.D., 1936, Nebraska

McCOY, LESLIE LAYTON, 1947.....Lecturer in Nursing
B.S., 1917, Wisconsin; M.D., 1919, Columbia

McCULLOUGH, WILLIAM HAYWORTH, 1943.....Assistant Professor of Social Work
A.B., 1932, DePauw; A.M., 1940, Chicago

McDONALD, DONALD FIEDLER, 1949.....Assistant Professor of Surgery
M.D., 1942, Chicago

McELMEEL, EUGENE F., 1947.....Clinical Associate in Anatomy
B.A., 1930, College of St. Thomas (Minnesota); B.S., 1933, M.D., 1936, Minnesota

McFARLAN, LEE HORACE, 1927 (1946).....Professor of Mathematics
B.S., 1917, Kansas State Teachers College; A.M., 1921, Ph.D., 1924, Missouri

McGOWAN, THORBURN S., 1948.....Consultant in Surgery
A.B., 1928, M.A., 1929, M.D., 1932, Tennessee

McGOWND, M. JANE, 1928.....Assistant Professor of Physical Education
B.S., 1917, M.A., 1923, Columbia

McGRATH, JOSEPH JAMES, 1948.....Associate in Marketing
A.B., 1936, Notre Dame

McINTYRE, HARRY JOHN, 1919 (1943).....Professor of Mechanical Engineering
B.S. in M.E., 1915, M.B.A., 1923, Washington

McKAY, GEORGE FREDERICK, 1927 (1943).....Professor of Music
B.Mus., 1923, University of Rochester

McKEE, LYNNE G., 1947.....Lecturer in Fisheries
B.S., 1927, M.S., 1928, Washington

McKEE, MARGARET McALLISTER, 1948.....Associate in Speech
A.B., 1936, Whitman

McKELVEY, ROBERT KENNETH, 1948.....Associate in Psychology
B.A., 1947, M.A., 1948, Missouri

McKENZIE, VERNON, 1928.....Professor of Public Relations
B.A., 1909, Toronto; M.A., 1914, Harvard

McKEY, HELEN LANTZ, 1948.....Instructor in Nursing
B.S., 1934, M.A., 1943, Columbia

McKIBBIN, WILBUR BLAINE, 1948.....Consultant in Orthopedics
B.B.A., 1918, Washington; B.M., 1929, M.D., 1930, Northwestern

McKINLAY, FLORENCE DILLOW, 1937 (1945).....Instructor in English
B.A., 1908, Lombard (Illinois); M.A., 1931, Washington

McLARNEY, ARTHUR JAMES, 1946.....Associate in Physical Education
B.S., 1932, Washington State

McLELLAN, HELEN, 1937 (1945).....Associate Professor of Physical Education
B.S., 1930, Wisconsin; M.A., 1931, Columbia

McLEMORE, IRA OGLETHORPE, 1948.....Consultant in Orthopedics
M.D., 1923, Georgia

MacMAHON, CHARLES EUGENE, 1948.....Clinical Instructor in Surgery
B.S., 1932, Washington; M.D., 1936, Harvard

McMAHON, EDWARD, 1908 (1940).....Professor Emeritus of American History
Ph.B., 1898, Washington; M.A., 1907, Wisconsin

McMAHON, THERESA SCHMID, 1911 (1937)....Professor Emeritus of Economics and Labor
A.B., 1899, A.M., 1901, Washington; Ph.D., 1909, Wisconsin

McMINN, BRYAN TOWNE, 1920 (1939).....Professor of Mechanical Engineering; Executive Officer of the Department of Mechanical Engineering
B.S. in M.E., 1918, Oregon State; M.S. in M.E., 1926, M.E., 1931, Washington

McNEESE, DONALD CHARLES, 1946 (1948).....Instructor in General Engineering
B.S. in C.E., 1940, Wyoming

McVAY, JOHN PATRICK, 1947.....Clinical Instructor in Medicine
B.S., 1928, Washington; M.D., 1932, Oregon

MACARTNEY, THOMAS WAKEFIELD, 1946 (1947).....Instructor in General Engineering
B.S. in C.E., 1939, B.S. in Com. Engr., 1946, Washington

MACDONALD, CATHERINE JOAN, 1945.....Supervisor of Field Work, Graduate School of Social Work
B.A., 1936, Washington

MacIVOR, VIRGINIA ELLEN, 1945.....Instructor in Nursing
R.N., 1933, Montana Deaconess Hospital; B.S., 1945, Washington

MACKENZIE, DONALD HECTOR, 1929 (1944).....Professor of Accounting; Acting Executive Officer of Department of Accounting
B.B.A., M.B.A., 1925, Washington; C.P.A., 1933

MACKIN, JOSEPH HOOVER, 1934 (1947).....Professor of Geology
B.S., 1930, New York University; M.A., 1932, Ph.D., 1936, Columbia

MacLEAN, DOROTHY G., 1936 (1943).....Assistant Professor of Physical Education
B.S., 1933, Oregon; M.S., 1938, Washington

MAHADY, STEPHEN CHARLES FRANCIS, 1948.....Clinical Instructor in Medicine
A.B., 1935, Hamilton College (New York); M.D., 1939, Harvard

MAJNARICH, JOHN, 1948.....Research Associate in Biochemistry
B.S., 1945, Washington State

MAKI, JOHN McGILVREY, 1939 (1948).....Assistant Professor of Japanese Government and Politics
B.A., 1932, M.A., 1936, Washington; Ph.D., 1948, Harvard

MANCHESTER, ROBERT CASE, 1947.....Clinical Instructor in Medicine
B.A., 1927, Ohio Wesleyan; M.S., 1930, M.D., 1932, University of Rochester

MANDER, LINDEN ALFRED, 1928 (1937).....Professor of International Organization and Relations; Co-Director of the Institute of International Affairs
B.A., 1917, M.A., 1920, Adelaide (Australia)

MANSFIELD, ROBERT STUART, 1932 (1945).....Associate Professor of Journalism
B.A., 1926, M.A., 1931, Michigan

MARCKWORTH, GORDON DOTTER, 1939.....Professor of Forest Management; Dean of the College of Forestry
B.S.F., 1916, Ohio State University; M.F., 1917, Yale

MARK, SARA NORRIS, 1937 (1947).....Instructor in English
B.A., B.S., 1911, M.A., 1928, Washington

MARSH, HAROLD, JR., 1947.....Assistant Professor of Law
B.A., 1939, Rice Institute (Texas); LL.B., 1942, Texas; LL.M., 1947, Columbia

MARTIN, ARTHUR WESLEY, JR., 1937 (1943).....Associate Professor of Physiology Executive Officer of Department of Zoology
B.S., 1931, College of Puget Sound; Ph.D., 1936, Stanford

MARTIN, CHARLES EMANUEL, 1924...Professor of International Law and Political Science; Co-Director of the Institute of International Affairs; Executive Officer of the Department of Political Science
B.L., 1914, A.M., 1915, California; Ph.D., 1918, Columbia; LL.D., 1942, Southern California

MARTIN, HAROLD CLIFFORD, 1948.....Associate Professor of Aeronautical Engineering
B.S. in M.E., 1934, M.S., 1937, New York University

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 University; Sc.D., 1937, Monmouth College (Illinois)

MARTIN, JOHN K., 1947.....Clinical Assistant Professor of Medicine
B.S., 1926, M.D., 1928, Nebraska

MARTIN, JOHN PIERRE, 1947.....Instructor in Civil Engineering
B.S. in C.E., 1941, Armour College of Engineering (Illinois)

MARTIN, JOHN WATSON, 1947.....Associate in Romance Languages and Literature

MARTIN, LESLIE.....Associate in Music

MARTS, MARION ERNEST, 1948.....Instructor in Geography
B.A., 1937, M.A., 1944, Washington

MASKE, WILLIAM, 1944 (1947)....Research Associate in the Engineering Experiment Station
B.S., 1915, M.S., 1917, Washington

MASON, ALDEN C., 1946 (1948).....Acting Instructor in Art
B.A., 1942, M.F.A., 1947, Washington

MASON, DAVID GREENWALT, 1947 (1948).....Clinical Assistant Professor of Pathology
B.A., 1931, M.D., 1935, Oregon

MASON, MARY LUCILE, 1943 (1947).....Associate in English
B.A., 1923, Grinnell College (Iowa)

MASON, WILLIAM RALPH, 1946 (1947).....Instructor in Civil Engineering
B.S. in C.E., 1940, Washington; M.S. in C.E., 1941, Massachusetts Institute of Technology

MATHWIG, JAMES ELMER, 1948.....Clinical Associate in Surgery
B.S., 1933, Washington; M.D., 1937, Oregon

MATHY, LEONARD GEORGE, 1945 (1946).....Assistant Professor of Economics
A.B., 1941, M.A., 1943, Ph.D., 1946, Illinois

MATSUSHITA, IWAO, 1946.....Associate in Japanese Language

MATTHEWS, NORMAN LAMPKIN, 1947.....Assistant Professor of Pharmacology
S.B., 1933, Chicago; Ph.D., 1940, Ohio State; M.D., 1946, Rochester

MATTINGLY, JOSEPH FABIAN, 1948.....Associate in Meteorology and Climatology

MAULBETSCH, JEAN WORTHLEY, 1947.....Associate in English
B.A., 1942, Linfield College (Oregon)

MEESE, RICHARD HUNT, 1946.....Instructor in Civil Engineering
B.S. in C.E., 1939, Washington; S.M., 1941, Harvard

MEIGS, ROBERT CRAWFORD, 1949.....Lecturer in Fisheries
B.S., 1936, Washington

MEISNEST, FREDERICK WILLIAM, 1927 (1947)..Professor Emeritus of Germanic Literature and Graduate Examiner
B.S., 1893, Ph.D., 1905, Wisconsin

MELDEN, ABRAHAM IRVING, 1946.....Assistant Professor of Philosophy
A.B., 1931, U.C.L.A.; A.M., 1932, Brown; Ph.D., 1938, California

MELDER, FRANK STEAVENSON, 1946 (1947).....Instructor in General Engineering
B.S. in M.E., 1936, Washington

MENDENHALL, AUDREY KRAMER, 1946..Instructor in Pharmacy in the School of Nursing
B.S., 1938, Washington

MERENDINO, K. ALVIN AUREIUS, 1948.....Associate Professor of Surgery
B.A., 1936, Ohio University; M.D., 1940, Yale; Ph.D., 1946, Minnesota

MERKLINGHAUS, OTTO ELLIS, 1947.....Associate in Sociology
B.A., 1946, Washington

MERRILL, GRANT WARREN, 1947 (1949).....Associate in Journalism and Radio Education
A.B., 1925, Washington

MESSER, ROWLAND ENLOW, 1946 (1947).....Instructor in General Engineering
B.S. in M.E., 1935, Washington

METHANY, DAVID, 1948.....Consultant in Surgery
A.B., 1920, Pennsylvania; M.D., 1923, Jefferson Medical School (Pennsylvania)

METZGER, JUDITH, 1947.....Research Associate in the Bureau of Business Research
A.B., 1944, Vassar

MEYER, HERMAN CARL HENRY, 1934 (1942)..Associate Professor of Germanic Languages
B.A., 1924, Capital University (Ohio); Ph.D., 1936, Chicago

MICHAEL, FRANZ HENRY, 1942 (1948).....Professor of Far Eastern History; Assistant Director of the Far Eastern and Russian Institute
Dr. Jur., 1933, Freiburg (Germany)

MILES, FRANK FRODSHAM, 1947.....Associate in Sociology
B.A., 1935, Washington

MILLER, ALFRED LAWRENCE, 1923 (1937).....Professor of Mechanics and Structures
B.S. in C.E., 1920, C.E., 1926, Washington

MILLER, CHARLES JOHN, 1927 (1945).....Professor of Marketing; Acting Executive Officer, Department of Marketing
B.B.A., 1922, M.B.A., 1927, Washington

MILLER, DONNA MAE, 1946.....Associate in Physical Education
B.S., 1944, Utah; M.A., 1946, Stanford

MILLER, Major DANFORTH PARKER, Jr., U.S.A., 1948.....Assistant Professor of Military Science and Tactics
B.S., 1940, Grove City College of Pennsylvania

MILLER, DELBERT CHARLES, 1947.....Associate Professor of Sociology
B.S., 1934, M.A., 1937, Miami (Ohio); Ph.D., 1940, Minnesota

MILLER, JAMES WALTER, 1948.....Clinical Instructor in Orthopedics
A.B., 1936, M.D., 1939, Michigan

MILLER, MARJORIE MERCEDES, 1946 (1947).....Associate in English
B.A., 1934, M.A., 1938, Washington

MILLER, ROBERT STOECKER, 1947.....Acting Instructor in Mechanical Engineering
B.S., 1939, Washington

MILLS, BLAKE DAVID, JR., 1946 (1947).....Professor of Mechanical Engineering
B.S. in M.E., B.S. in E.E., 1934, M.E., 1947, Washington; M.S. in M.E., 1935, Massachusetts Institute of Technology

MILLS, CASWELL ALBERT, 1942 (1943).....Instructor in Physical Education
B.A., 1935, North Dakota State Teachers College; M.A., 1943, Washington

MILLS, ELIZABETH TABOR, 1947.....Assistant Professor of Medical Social Work
A.B., 1931, Washington; M.S., 1933, Washington University (St. Louis)

MILLS, MOORE ANDERSON, 1948.....Clinical Instructor in Medicine
B.S., 1931, M.S., 1931, Washington; Ph.D., 1936, M.D., 1939, Northwestern

MILNE, Major HARRY THOMSON, 1946.....Assistant Professor of Naval Science
B.S., 1940, Oregon

MINER, ADAH L., 1948.....Instructor in Speech
B.A., 1943, Washington

MISCH, PETER, 1947 (1948).....Associate Professor of Geology
D.Sc., 1932, University Goettingen (Germany)

MISKA, MONTE GEORGE, 1949.....Clinical Instructor in Fixed Partial Dentures
D.D.S., 1937, Minnesota

MITCHELL, EDITH LAUBSCHER, 1947.....Instructor in Nursing
B.S., 1929, Washington; R.N., 1929, General Hospital of Everett (Washington)

MITHUN, OMER LLOYD, 1947 (1948).....Instructor in Architecture
B.Arch., 1942, Minnesota

MITTET, HOLGER PEDER, 1946.....Instructor in Civil Engineering
B.S. in C.E., 1937, Washington; M.S. in C.E., 1938, Massachusetts Institute of Technology

MIX, Major STANLEY MONROE, 1946....Assistant Professor of Military Science and Tactics
B.S., 1940, South Dakota State

MIYAMOTO, SHOTARO FRANK, 1945.....Assistant Professor of Sociology
B.A., 1936, M.A., 1938, Washington

MOBERG, DAVID OSCAR, 1948.....Associate in Sociology
B.A., 1947, Seattle Pacific College

MOHL, RUTH, 1948.....Associate in Journalism
B.A., 1942, Pennsylvania State College

MOLL, FREDERIC CLIFFORD, 1948.....Instructor in Pediatrics
A.B., 1937, M.D., 1940, University of Rochester

MOLT, FREDERICK FELIX, 1949.....Clinical Professor of Oral Surgery
D.D.S., 1901, Chicago College of Dental Surgery

MOLTRECHT, KARL ERNEST HANS, 1948.....Instructor in Mechanical Engineering
B.S. in M.E., 1948, Ohio State

MONTANO, JOSE DURAN, 1947.....Associate in Romance Languages and Literature
Bachellor, 1944, The American Institute (Bolivia)

MOODY, LESTER DEANE, 1947.....Associate in English
B.A., 1928, Washington State

MOORE, ALTON W., 1948.....Associate Professor of Orthodontics; Executive Officer of the Department of Orthodontics
D.D.S., 1941, California; M.S., 1948, Illinois

MOORE, JOHN TERENCE, 1948.....Assistant Professor of Music
B.Mus., 1940, M.Mus., 1941, Illinois

MORE, CHARLES CHURCH, 1900 (1947).....Professor Emeritus of Structural Engineering
C.E., 1898, M.S., 1901, Lafayette; M.C.E., 1899, Cornell

MORITZ, HAROLD KENNEDY, 1928 (1939).....Associate Professor of Civil Engineering
B.S. in M.E., 1921, Massachusetts Institute of Technology

MORRISON, JAMES BRYAN, 1946 (1947).....Instructor in Mechanical Engineering
B.S. in M.E., 1943, Virginia Polytechnic Institute

MORRISON, JOHN ALLEN, 1949.....Lecturer in Aeronautical Engineering

MORRISON, JOHN WILSON, 1946 (1947).....Instructor in English
B.A., 1937, Washington

MORRISON, KENNETH NELSON, 1948.....Instructor in Operative Dentistry
D.D.S., 1943, Toronto

MORROW, CECIL LOVELAND, 1947.....Clinical Instructor in Medicine
B.S., 1923, Chicago; M.D., 1929, Rush Medical College

MORROW, JOHN GEORGE, 1948.....Instructor in Mineral Dressing
B.S., 1947, Queens University (Ontario); M.S., 1948, Washington

MORTON, ROBERT JAMES, 1948.....Clinical Instructor in Medicine
A.B., 1939, M.D., 1943, Kansas; M.S., 1947, Minnesota

MOSELEY, SPENCER, 1948.....Associate in Art
B.A., 1948, Washington

MOSSMAN, PAUL DARWIN, 1948....Medical Administrative Consultant, School of Medicine
M.D., 1912, Sterling Ohio Medical College

MOULTON, RALPH WELLS, 1941 (1945).....Associate Professor of Chemical Engineering
B.S. in Chem. E., 1932, M.S. in Chem. E., 1934, Ph.D., 1938, Washington

MUHLICK, CLARENCE VICTOR, 1948.....Instructor in Botany
B.S., 1933, Montana

MULLEMEISTER, HERMANCE, 1918, (1945).....Associate Professor of Mathematics
B.S., 1911, M.S., 1912, Ph.D., 1913, Royal University of Utrecht (Holland)

MULLEN, BERNARD PARKER, 1948.....Consultant in Surgery..
B.S., 1918, Wisconsin; M.D., 1921, Rush Medical School

MULVANY, PAUL KENNETH, 1947.....Associate in Chemical Engineering
B.S. in Chem. Engr., 1944, Washington

MUMBY, MILDRED, 1946 (1947).....Clinical Instructor in Dermatology
M.D., 1925, Oregon

MUND, VERNON ARTHUR, 1932 (1937).....Professor of Economics
B.B.A., 1928, M.B.A., 1929, Washington; Ph.D., 1932, Princeton

MUNRO, KATHLEEN, 1929 (1945).....Professor of Music
B.M., 1924, Washington; M.A., 1929, Columbia; Ph.D., 1937, Washington

MURPHY, ARTHUR EDWARD, 1949.....Visiting Professor of Philosophy
A.B., 1923, Ph.D., 1925, California

MURPHY, HERTA ALBRECHT, 1946.....Lecturer in Secretarial Studies
B.B.A., 1930, M.A., 1942, Washington

MURPHY, RALPH MASON, 1946 (1947).....Instructor in Speech
B.A., 1924, Franklin College; M.A., 1929, Wisconsin

MURTON, CLARENCE CHARLES, 1943.....Associate in Journalism
B.A., 1924, Washington

MYLROIE, WILLA W., 1948.....Associate in Civil Engineering
B.S. in C.E., 1940, Washington

NAIDEN, JAMES RICHARD, 1948.....Assistant Professor of Humanistic Social Studies
A.B., 1935, M.A., 1936, Iowa; M.A., 1941, Ph.D., 1948, Columbia

NAMKUNG, HELEN, 1948.....Associate in Japanese Languages
B.M., 1940, Toyo Conservatory of Music (Tokyo)

NAMKUNG, JOSHEL, 1948.....Associate in Japanese Language
B.M., 1940, Toyo Conservatory of Music

NEDDERMEYER, SETH HENRY, 1946.....Associate Professor of Physics
A.B., 1929, Stanford; Ph.D., 1935, California Institute of Technology

NELSEN, ROBERT JERRY, 1947....Assistant Professor of Dental Materials; Executive Officer Department Dental Materials; Assistant Professor, Operative Dentistry; Assistant Professor, Dental Radiography
D.D.S., 1940, Minnesota

NELSON, AVERLY M., 1947.....Clinical Instructor in Medicine
B.S., 1937, Washington; M.D., 1941, Oregon

NELSON, EDWIN LEONARD, 1948.....Associate in English
B.A., 1936, M.A., 1947, Washington

NELSON, EVERETT JOHN, 1930 (1941).....Professor of Philosophy; Executive Officer of the Department of Philosophy
B.A., 1923, M.A., 1925, Washington; M.A., 1928, Ph.D., 1929, Harvard

NELSON, JACK M., 1948.....Clinical Instructor in Urology
M.D., 1932, College of Medical Evangelists

NELSON, JERRY ALLEN, 1948.....Research Associate in Biochemistry
B.S., 1936, Washington

NELSON, KENNETH J., 1949.....Lecturer in Aeronautical Engineering

NELSON, OLE ANDY, 1947.....Lecturer in Nursing
M.D., 1913, University of Louisville

NELSON, OLIVER WENDELL, 1945 (1947).....Assistant Professor of Speech
B.A., 1933, M.A., 1939, Washington

NEVA, ARNOLD CARL, 1947.....Instructor in Pharmacognosy
B.S., 1941, M.S., 1943, Ph.D., 1947, Minnesota

NEWKIRK, PAUL RICHARD, 1944.....Lecturer in Nursing
M.D., 1911, Heidelberg (Germany)

NEWMAN, CHARLES WYNN, JR., 1947.....Instructor in Mechanical Engineering
B.S.E., 1941, Michigan

NEWMAN, HERBERT MARTIN, 1949.....Associate in Ceramic Engineering
B.S., 1948, Washington

NICHOLSON, DONALD A., 1946.....Senior Consultant in Psychiatry
M.D., 1897, Minnesota

NIEDER, ERIKA ELYANE DESSAUER, 1948.....Associate in Romance Languages and Literature
Baccalaureat, 1940, College Jules Ferry (France)

NISHI, MIDORI, 1948.....Associate in Geography
B.A., 1945, Nebraska Wesleyan; M.A., 1946, Clark University

NUCKLES, HUGH HUNTER, 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1930, Washington; M.D., 1934, Pennsylvania

NIX, MARTHA JEANNETTE, 1928 (1947).....Assistant Professor of English
B.A., 1922, M.A., 1925, Washington

NORDQUIST, WILLIAM BERTIL, 1947.....Instructor in Mechanical Engineering
B.M.E., 1941, Rensselaer Polytechnic Institute (New York); M.S., 1946, Massachusetts Institute of Technology

NORGORE, MARTIN, 1946.....Clinical Associate in Anatomy
B.S., 1921, Washington; M.D., 1926, Oregon

NORMANN, THEODORE FREDERICK, 1940.....Associate Professor of Music
B.A., 1925, Macalaster College (Minnesota); M.A., 1928, Columbia

NORRIS, EARL RALPH, 1927 (1940).....Professor of Chemistry; Executive Officer of Department of Biochemistry
B.S., 1919, Montana State; Ph.D., 1924, Columbia

NORTHROP, CEDRIC, 1947.....Clinical Instructor in Public Health and Preventive Medicine
B.A., 1930, M.D., 1936, Oregon

NORTHROP, MARY WATSON, 1931.....Instructor in Nursing
B.A., 1920, Vassar; M.S., 1923, Columbia

NORTON, RODERICK ARTHUR, 1946.....Lecturer in Nursing
A.B., 1934, M.D., 1937, Michigan

NOSTRAND, HOWARD LEE, 1939.....Professor of Romance Languages; Executive Officer of the Department of Romance Languages and Literature
B.A., 1932, Amherst; M.A., 1933, Harvard; Docteur de l'Université de Paris, 1934

NOTTELMANN, RUDOLPH HANS, 1927.....Professor of Law
A.B., 1912, Monmouth College (Illinois); M.A., 1913, Illinois; LL.B., 1922, Yale

NOVIKOW, ELIAS THEODORE, 1947 (1948).....Instructor in Russian Language
B.M., 1939, Oklahoma; M.Mus., 1942, Michigan; M.A., 1946, Washington

O'BRIEN, ROBERT WILLIAM, 1939 (1945).....Assistant Professor of Sociology
A.B., 1929, Pomona; A.M., 1931, Oberlin; Ph.D., 1945, Washington

O'BRYAN, JOSEPH GRATTAN, 1914 (1947).....Professor Emeritus of Law; Research Assistant to the Law Librarian
B.A., 1893, Jesuit College (Denver); LL.D., 1928, Regis College (Denver)

OBST, FRANCES MELANIE, 1944.....Assistant Professor of Home Economics
B.S., 1934, M.A., 1938, Minnesota

ODELL, HOWARD HARRY, 1948.....Associate in Physical Education; Head Football Coach
B.S., 1934, Pittsburgh

OGILVIE, ALFRED LIVINGSTON, 1948.....Instructor in Periodontology
D.D.S., 1934, Toronto

OHMAN, ALBERT C., 1948.....Clinical Instructor in Urology
M.D., 1932, Colorado

OLCOTT, VIRGINIA, 1931 (1945).....Associate Professor of Nursing
R.N., 1926, Peter Bent Brigham Hospital (Boston); B.S., 1927, M.S., 1931, Washington

OLES, KEITH FLOYD, 1947.....Associate in Geology
B.S., 1943, Washington

OLSEN, BJARNE, 1948.....Acting Instructor in Architecture
B.Arch., 1938, Washington

OLSON, DONALD ALBERT, 1948.....Lecturer in Industrial Management
B.A., 1942, M.B.A., 1946, Northwestern

O'NEIL, GORDON BLAKE, 1948.....Clinical Associate in Orthopedics
B.S., 1932, Washington; M.D.C.M., 1936, McGill University (Montreal)

ORDAL, ERLING JOSEF, 1937 (1943).....Associate Professor of Microbiology
A.B., 1927, Luther College (Iowa); Ph.D., 1936, Minnesota

ORELL, BERNARD L., 1947.....Assistant Professor of Forestry
B.S., 1939, M.F., 1941, Oregon State

ORR, DOUGLASS WINNETT, 1941 (1947)....Lecturer in the Graduate School of Social Work; Clinical Instructor in Psychiatry
A.B., 1928, Swarthmore; M.S., 1934, M.D., 1935, Northwestern

ORR, FREDERICK WESLEY, 1925 (1948).....Professor Emeritus of Speech; Research Consultant
B.L., 1901, Drury (Missouri); G.C.D., 1905, Boston School of Expression; M.A., 1925, Lawrence College (Wisconsin)

OSBURN, WORTH JAMES, 1936.....Professor of Remedial and Experimental Education
A.B., 1903, Central College (Missouri); A.M., 1904, Vanderbilt; B.S., 1910, Missouri; Ph.D., 1921, Columbia

OSTERHAUG, KATHRYN L., 1949.....Lecturer in Fisheries
B.S., 1943, Washington

OWEN, DONALD BRUCE, 1946.....Associate in Mathematics
B.S., 1945, M.S., 1946, Washington

OWENS, BERL WINFIELD, 1948.....Instructor in Mechanical Engineering
B.Aero.E., 1944, Minnesota

PAHN, VADIM OTTO, 1946 (1948).....Instructor in Russian Language
B.A., 1935, B.S.Agr., 1938, British Columbia

PALMER, LESTER JOERG, 1947.....Clinical Professor of Medicine
M.D., 1914, Northwestern

PALMER, VINSON LE ROY, 1943 (1948).....Assistant Professor of Electrical Engineering
B.S. in E.E., 1940, M.S. in E.E., 1948, Washington

PALMQUIST, EMIL EUGENE, 1944 (1946).....Clinical Assistant Professor of Public Health and Preventive Medicine
B.A., 1930, Gustavus Adolphus College (Minnesota); B.M., 1936, M.D., 1937, Northwestern; M.P.H., 1942, Michigan

PARKER, DEAN, 1948.....Clinical Instructor in Urology
B.S., 1933, M.D., 1939, Iowa

PARKER, HERBERT M., 1948.....Senior Consultant in Radiology
B.S., 1930, M.S., 1931, Manchester University (England)

PARKER, STEPHEN THOMAS, 1947.....Clinical Professor of Dermatology
M.D., 1921, Creighton (Nebraska); B.S., 1923, Gonzaga (Spokane)

PARKS, DORIS HAZEL, 1947.....Instructor in Home Economics
B.S., 1940, Illinois; M.B.A., 1948, Northwestern; C.P.A., 1947, State of Illinois

PARKS, FRANK LOVERN, 1946 (1948).....Instructor in Sociology
B.A., 1929, B.E., 1929, M.A., 1931, Colorado

PARKS, PAUL W., 1948.....Associate in Economics
B.A., 1939, Washington

PATTERSON, AMBROSE McCARTHY, 1919 (1947).....Professor Emeritus of Painting; Consultant in Painting
National School of Art (Melbourne); Juliens, Colorossi and Delacluse Schools of Art (Paris)

PATTERSON, LILLIAN BEATRICE, 1945 (1946).....Assistant Professor of Nursing
R.N., 1923, Presbyterian Hospital (Chicago); B.A., 1941, C.P.H.N., 1942, M.A., 1943, Washington

PATTERSON, VIOLA HANSEN, 1947.....Instructor in Art
B.A., 1921, B.S. in L.S., 1921, B.F.A., 1925, M.F.A., 1947, Washington

PATTON, HARRY DICKSON, 1947.....Assistant Professor of Physiology
B.A., 1939, Arkansas; Ph.D., 1943, M.D., 1946, Yale

PAULSON, EDWARD, 1947 (1948).....Assistant Professor of Mathematics
B.A., 1936, Brooklyn College (New York); M.A., 1938, Ph.D., 1948, Columbia

PAUTZKE, CLARENCE FREDRIC, 1948.....Lecturer in Fisheries
B.S., 1932, Washington

PAYNE, BLANCHE, 1927 (1942).....Professor of Home Economics
B.S., 1916, Kansas State Teachers College; M.A., 1924, Columbia

PEACOCK, ALEXANDER HAMILTON, 1946.....Senior Consultant in Urology
M.D., 1903, Pennsylvania

PEARCE, JOHN KENNETH, 1934 (1943).....Professor of Logging Engineering
B.S.F., 1921, Washington

PEARSON, CLARENCE COPLYN, 1948.....Clinical Instructor in Medicine
B.A., 1934, M.D., 1937, Texas; M.S., 1947, Minnesota

PEEK, CLIFFORD LAVERNE, 1938.....Assistant Professor of Physical Education
B.S., 1929, Washington; M.A., 1931, Columbia

PEELING, VIVIAN S., 1947.....Associate in English
B.A., 1925, Smith

PELLEGRINI, ANGELO M., 1930 (1945).....Assistant Professor of English
B.A., 1927, Ph.D., 1942, Washington

PELZ, FREDA, 1948.....Associate in Secretarial Studies
B.B.A., 1922, M.A., 1929, Washington

PENCE, ORVILLE LEON, 1941 (1946).....Assistant Professor of Speech
B.A., 1935, M.A., 1939, Washington; Ph.D., 1946, Iowa

PENINGTON, RUTH ESTHER, 1928 (1943).....Associate Professor of Art
B.F.A., 1927, M.F.A., 1929, Washington

PENNINGTON, DERROL ELWOOD, 1948.....Instructor in Microbiology
B.A., 1938, Reed College; Ph.D., 1942, Texas

PERKS, LILIAN CHARLOTTE, 1942 (1947).....Acting Instructor in Mathematics
B.A., 1905, M.A., 1905, St. Andrews, Scotland; B.S., 1906, Edinburgh

PERRIN, PORTER GALE, 1947.....Professor of English
A.B., 1917, Dartmouth; M.A., 1921, Maine; Ph.D., 1936, Chicago

PERSON, HENRY AXEL, 1937 (1947).....Assistant Professor of English
B.A., 1927, Ph.D., 1942, Washington

PETERSEN, EVALD, 1949.....Lecturer in Accounting
B.S., 1937, Denver

PETERSON, CLAIRE G., 1944.....Associate in Music
B.A., 1945, Washington

PETERSON, LEONARD DAVID, 1948.....Associate in Mechanical Engineering

PETERSON, PAUL GILBERT, 1948.....Clinical Instructor in Obstetrics and Gynecology
A.B., 1927, St. Olaf College; M.D., 1932, Rush Medical College (Chicago)

PETERSON, PHILIP LESLIE, 1947.....Clinical Instructor in Medicine
A.B., 1926, St. Olaf College (Minnesota); M.D., 1931, Rush Medical College

PETTIBONE, EARL WINTON, Jr., 1947.....Assistant Professor of Economics
B.A., 1939, Washington; M.A., 1940, Haverford College (Pennsylvania)

PETTIBONE, MARION HOPE, 1945 (1947).....Instructor in Zoology
B.S., 1930, Linfield College (Oregon); M.S., 1932, Oregon; Ph.D., 1947, Washington

PEYMAN, DOUGLAS ALASTAIR RALPH, 1947.....Associate in Psychology
B.A., 1943, M.A., 1946, British Columbia

PFAFMAN, EDWIN, 1949.....Lecturer in Aeronautical Engineering
B.S., 1935, Tri-State College (Indiana)

PHAIR, W. PHILIP, 1948.....Clinical Instructor in Pedodontics
D.D.S., 1945, Iowa; M.P.H., 1948, Michigan

PHILBRICK, WARREN WHEELER, 1947 (1948).....Assistant Professor of Mechanical Engineering; Assistant Director, Engineering Experiment Station
B.S. in M.E., 1938, Washington; M.B.A., 1940, Harvard

PHILLIPS, JAMES YOUNG, 1948.....Clinical Associate in Neurosurgery
M.D.C.M., 1940, McGill University (Montreal)

PHILLIPS, RONALD PICKERING, 1936.....Associate in Music

PIFER, DRURY AUGUSTUS, 1945 (1948).....Professor of Mining Engineering; Director of the School of Mineral Engineering
B.S. in Min. Engr., 1930, M.S. in Min. Engr., 1931, Washington

PINKHAM, ROLAND DAVIS, 1948.....Clinical Instructor in Surgery
B.S., 1934, Washington; M.D., 1939, Stanford

PLANT, ROBERT KEDZIE, 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1929, Michigan State College; M.D., 1932, Michigan

PLATT, VIRGINIA PROVINE, 1943 (1945).....Acting Instructor in Physics
B.S. in M.E., 1945, Washington

PLEIN, ELMER MICHAEL, 1938 (1945).....Associate Professor of Pharmacy
Ph.C., B.S., 1929, M.S., 1931, Ph.D., 1936, Colorado

PLUMMER, RALPH E., 1948.....Clinical Instructor in Dental Materials
D.M.D., 1914, North Pacific College of Dentistry (Oregon)

POMMERENING, ROBERT ALVIN, 1948.....Clinical Instructor in Medicine
A.B., 1938, M.D., 1942, Michigan

POOLE, H. GORDON, 1947.....Acting Associate Professor of Mineral Engineering
B.S. in Min. Engr., 1931, Case Institute of Technology (Cleveland); M.S., 1932, Idaho

PORTER, RAYMOND GEORGE, SKC, USN, 1947.....Instructor in Naval Science

POSELL, EDWARD A., 1938.....Lecturer in Nursing
B.S., 1923, College of the City of New York; M.D., 1927, Boston University

POWELL, SARGENT GASTMAN, 1919 (1943).....Professor of Chemistry
B.S., 1916, M.S., 1916, Washington; Ph.D., 1920, Illinois

POWERS, FRANCIS FOUNTAIN, 1928 (1939).....Professor of Educational Psychology; Dean of the College of Education
B.A., 1923, Ph.D., 1928, Washington; M.A., 1927, Oregon

POWERS, LELAND EARL, 1946.....University Health Officer; Professor of Public Health and Preventive Medicine; Executive Officer of the Department of Public Health and Preventive Medicine
M.D., 1933, Iowa; M.S. in Public Health, 1939, Michigan

PRATT, FRANK HOWLEY, 1946 (1947).....Associate Professor of Oral Anatomy
D.M.D., 1916, North Pacific College

PRESTON, HOWARD HALL, 1920 (1922).....Professor of Money and Banking; Acting Executive Officer of the Department of Finance; Dean Emeritus of the College of Economics and Business
B.S., 1911, LL.D., 1938, Coe College (Iowa); M.A., 1914, Ph.D., 1920, Iowa

PRIES, LIONEL HENRY, 1928 (1948).....Professor of Architecture
A.B., 1920, California; M.Arch., 1921, Pennsylvania

PRINDIVILLE, MARGUERITE, 1947.....Instructor in Nursing
B.S., 1939, Columbia

PRINS, ROBERT FREDERICK, 1947.....Associate in English
B.A., 1942, M.A., 1947, Washington

PRINS, RUTH BALKEMA, 1947.....Associate in Drama
B.A., 1942, Washington

PULLEN, ROSCOE LE ROY, 1947.....Associate Professor of Medicine; Director of Hospital Planning
B.A., 1935, Knox College (Illinois); B.M., 1939, M.D., 1940, Northwestern

PURDUE, ROBERT ALLEN, 1946.....Lecturer in Business Law
B.A., 1939, LL.B., 1942, Washington

PUTNAM, GARTH LOUIS, 1947....Research Associate in the Engineering Experiment Station
B.S., 1935, M.S., 1937, Washington; Ph.D., 1942, Columbia

RABINOVITCH, BENTON SEYMOUR, 1948.....Assistant Professor of Chemistry
B.S., 1939, Ph.D., 1942, McGill University (Montreal)

RABINOWITZ, WILSON GERSON, 1948.....Instructor in Greek and Latin
A.B., 1940, Johns Hopkins

RADCLIFFE, DONALD GREGG, 1947 (1948).....Assistant Professor of General Engineering
B.S. in C.E., 1932, M.S. in C.E., 1934, Illinois

RADER, MELVIN MILLER, 1930 (1948).....Professor of Philosophy
B.A., 1925, M.A., 1927, Ph.D., 1929, Washington

RAHSKOPF, HORACE G., 1928 (1944).....Professor of Speech; Executive Officer of the Department of Speech
B.A., 1920, Willamette (Oregon); M.A., 1927, Ph.D., 1935, Iowa

RALPH, PAUL HERBERT, 1947.....Assistant Professor of Anatomy
B.A., 1936, Westminster College (Missouri); M.S., 1937, Oklahoma A and M; Ph.D., 1942, Michigan

RAMSAY, JOHN FINLAY, 1948.....Clinical Instructor in Surgery
B.S., 1926, Washington; M.D., 1930, Oregon

RANKERT, EDWARD HENRY, QMC, USN, 1947.....Instructor in Naval Science

RANKIN, ESTELLE ALITA, 1946.....Acting Instructor in Geography
B.S., 1932, Washington; M.A., 1935, Columbia

RANKIN, ROBERT M., 1948.....Clinical Instructor in Medicine
B.S., 1937, Washington; M.D., 1942, Johns Hopkins

RASANEN, PAUL ROBERT, 1947.....Instructor in Pharmaceutical Chemistry
B.S., 1940, Washington State; M.S., 1942, Nebraska; Ph.D., 1947, Purdue

RASKIND, LEO J., 1948.....Associate in Economics
B.A., 1942, U.C.L.A.

RAY, DIXY LEE, 1945 (1947).....Assistant Professor of Zoology
B.A., 1937, M.A., 1938, Mills; Ph.D., 1945, Stanford

RAY, ROBERT DURANT, 1948.....Assistant Professor of Surgery
A.B., 1936, M.A., 1938, California; M.D., 1943, Harvard

RAY, VERNE FREDERICK, 1933 (1947).....Professor of Anthropology; Associate Dean, Graduate School
B.A., 1931, M.A., 1933, Washington; Ph.D., 1937, Yale

RAYMOND, MARGARET HEIMBACH, 1949.....Associate in Chemistry
B.S., 1947, California

READ, WILLIAM MERRITT, 1927 (1945).....Professor of Classical Languages; University Editor; Director of the University Press
A.B., 1923, DePauw; A.M., 1924, Ph.D., 1927, Michigan

REAUGH, DANIEL M., 1945.....Lecturer in Law
A.B., 1932, Washington State; J.D., 1936, Washington; J.S.D., 1940, Yale

REDFORD, GRANT H., 1945.....Assistant Professor of English
B.S., 1937, Utah State; M.A., 1940, Iowa

REED, CARROLL EDWARD, 1946 (1948).....Assistant Professor of Germanic Languages
B.A., 1936, M.A., 1937, Washington; Ph.D., 1941, Brown

REEKIE, RICHARD DOUTY, 1948.....Clinical Associate in Obstetrics and Gynecology
Ph.C., 1925, B.S., 1927, Washington; M.D., 1933, Michigan

REEVES, GEORGE SPENCER, 1935 (1948).....Associate Professor of Physical Education
B.S., 1933, Oregon State; M.S., 1938, Oregon

REIERSON, FRANCIS FREMONT, 1947.....Associate in Physical Education
B.A., 1947, Washington

REICHERT, ROBERT GEORGE, 1948.....Acting Instructor in Architecture
B.A., 1947, Minnesota

REIFLER, ERWIN, 1947 (1948).....Associate Professor of Chinese Language
Dr. Rer. Pol., 1931, Vienna

REISS, GRACE DEWEY, 1945.....Field Work Supervisor in Graduate School of Social Work
B.A., 1932, Iowa; M.A., 1940, Minnesota

REMBE, ARMIN, 1947.....Clinical Assistant Professor of Pediatrics
B.S., 1922, M.D., 1925, Northwestern

RHEA, Capt. FRANK WILLIAM, U.S.A., 1947.....Assistant Professor of Military Science and Tactics
B.S., 1943, U.S. Military Academy; M.S., 1947, Iowa

RHEES, MARK CHARLES, 1947.....Research Associate in Pathology
B.S., 1938, Utah Agricultural College; M.S., 1941, Texas A. and M.

RHODES, FRED HAROLD, Jr., 1927 (1943).....Associate Professor of Civil Engineering
B.S. in C.E., 1926, B.S. in M.E., 1926, C.E., 1935, Washington

RHYNSBURGER, WILLERT, 1948.....Instructor in Geography
B.A., 1937, M.A., 1946, Washington

RICHARDS, JOHN WILLIS, 1931 (1937).....Professor of Law
B.A., 1923, Wisconsin; LL.B., 1926, LL.M., 1930, S.J.D., 1931, Harvard

RICHARDS, LAURA ELLEN, 1948.....Lecturer in Social Work
A.B., 1922, Oberlin; M.S.S., 1933, Smith College

RICHARDSON, WILLIAM W., 1947.....Clinical Instructor in Medicine
B.A., 1934, Amherst (Massachusetts); M.D., 1938, Pennsylvania

RICHEIMER, JAMES WALTER, 1947 (1948).....Acting Instructor in German
A.B., 1944, University of Louisville; M.A., 1947, Columbia

RICHINS, WILLIAM DWAINE, 1946.....Associate in Marketing
B.A., 1936, Brigham Young University; M.B.A., 1938, Louisiana State

RICKER, WALTER ALBRA, Jr., 1946.....Assistant Professor of Pathology
M.D., 1939, Marquette (Wisconsin)

RICKLES, NATHAN K., 1948.....Clinical Instructor in Psychiatry
B.S., 1927, M.D., 1928, Northwestern

RIDEOUT, JANE GUTHRIDGE, 1947.....Instructor in Nursing
R.N., B.S., 1942, Washington

RIGG, GEORGE BURTON, 1909 (1947).....Professor Emeritus of Botany; Research Consultant in the Department of Botany
B.S., 1896, Iowa; M.A., 1909, Washington; Ph.D., 1914, Chicago

RILEY, JOHN BRANSON, 1948.....Clinical Instructor in Psychiatry
B.S., 1933, M.B., 1933, M.D., 1934, Minnesota

RILEY, THOMAS JAMES, Jr., 1949.....Clinical Instructor in Prosthodontics
A.B., 1932, D.D.S., 1936, Columbia

RILEY, WALTER LEE, 1946.....Acting Assistant Professor of Political Science
B.A., 1933, Adams State College (Colorado); M.A., 1935, Stanford

RIMLINGER, GASTON VICTOR, 1948.....Associate in Romance Languages and Literature

RINGLE, ARTHUR LEVI, 1946.....Clinical Associate Professor of Public Health and Preventive Medicine
M.D., 1935, Colorado; C.P.H., 1937, Minnesota

RISEGARI, EILENE FRENCH, 1945 (1948).....Assistant Professor of Music
B.Mus., 1916, Washington; M.A., 1920, Columbia

RISING, LOUIS WAIT, 1934 (1936).....Professor of Pharmacy
Ph.G., B.S., 1924, Oregon State; M.S., 1926, Ph.C., 1928, Ph.D., 1929, Washington

RITTER, DAVID MOORE, 1944 (1948).....Acting Associate Professor of Chemistry
S.B., 1933, Ph.D., 1937, Chicago

RIVENBURGH, VIOLA K., 1944 (1947).....Associate in English
A.B., 1919, Nebraska; M.A., 1926, University of Hawaii

ROBBINS, FLOYD DAVID, 1946 (1947).....Instructor in Electrical Engineering
B.S. in E.E., 1925, E.E., 1949, Washington

ROBERTS, EDWARD WILLIAM, 1948.....Clinical Instructor in Radiology
B.S., 1929, B.M., 1932, M.D., 1932, Minnesota

ROBERTS, JAMES RUSSELL, 1946.....Assistant Professor of English
B.A., 1930, M.A., 1931, Washington State; Ph.D., 1940, Washington

ROBERTS, MILNOR, 1901 (1947).....Dean Emeritus of the College of Mines
B.A., 1899, Stanford

ROBERTSON, JAMES CAMPBELL HAY, 1945....Associate Professor of Forest Management
B.S.F., 1927, Washington; M.S.F., 1933, California; Ph.D., 1947, Duke

ROBINSON, REX JULIAN, 1929 (1945).....Professor of Chemistry
B.A., 1925, DePauw; M.A., 1927, Ph.D., 1929, Wisconsin

ROCHLITZ, IMRE, 1948.....Associate in Serbo-Croatian Language

ROETHKE, THEODORE HUEBENER, 1947 (1948).....Professor of English
A.B., 1929, A.M., 1936, Michigan

ROGERS, ARTHUR ERNEST THEODORE, 1948.....Clinical Instructor in Medicine
B.A., 1924, Columbia; M.D., 1927, Yale

ROGERS, CALVIN ABRAHAM, 1947.....Associate in Mathematics
B.A., 1944, Washington State

ROGERS, WALTER EDWIN, 1946 (1947).....Instructor in Electrical Engineering
B.S. in E.E., 1934, California; M.S., 1948, Washington

ROGGE, EDGAR ANDREAS, 1948.....Clinical Associate in Orthopedics
B.S., 1931, Washington; M.D., 1933, George Washington University

ROHRER, JOHN ABRAM, 1948.....Instructor in Architecture
B.Arch., 1937, Washington

ROLL, LEWIS ROBERT, 1948.....Clinical Instructor in Medicine
B.S., 1931, M.D., 1941, Chicago

ROLLER, JULIUS ABRAHAM, 1945.....Assistant Professor of Accounting
B.B.A., 1934, Washington

ROLLINS, FRANCIS W., 1948.....Instructor in General Engineering
B.S., 1937, Worcester Polytechnic Institute (Massachusetts)

ROLLINS, PAUL R., 1948.....Consultant in Obstetrics and Gynecology
Ph.C., B.S., 1924, Washington; M.D., 1928, Washington University (St. Louis)

ROMAN, HERSCHEL LEWIS, 1942 (1947).....Associate Professor of Botany
A.B., 1936, Ph.D., 1942, Missouri

ROOM, THOMAS GERALD, 1948.....Visiting Professor of Mathematics
M.A., 1926, University of Cambridge (England)

ROOT, CORNELIUS, 1947.....Director of Laboratories in the School of Journalism

ROSE, THELMA SOULE, 1946 (1947).....Instructor in Home Economics
B.S., 1940, Washington

ROSELLINI, LEO JOHN, 1948.....Clinical Associate in Surgery
Ph.G., 1931, California; B.S., 1932, University of San Francisco; M.D., 1937, Creighton (Nebraska)

ROSEN, MORITZ, 1909 (1947).....Professor Emeritus of Music; Examiner of Strings
Graduate, Warsaw Conservatory, Russia

ROSENBERG, REINHARDT MATHIAS, 1948..Associate Professor of Aeronautical Engineering
B.S. in G.E., 1941, Pittsburgh; M.S. in Aero. Engr., 1946, Purdue

ROSINBUM, RALPH RAMBO, 1948.....Associate in Drama
B.A., 1947, M.A., 1948, Washington

ROSS, ZOLA HELEN, 1947.....Associate in English

ROSSBACH, CHARLES EDMUND, 1947 (1948).....Assistant Professor of Art
B.A., 1940, Washington; M.A., 1941, Columbia; M.F.A., 1947, Cranbrook Academy of Art (Michigan)

ROTTON, GLENN NELSON, 1948.....Consultant in Obstetrics and Gynecology
B.S., 1919, M.D., 1922, Iowa

ROWE, EDWARD A., 1948.....Acting Associate Professor of Metallurgical Engineering
B.S., 1935, M.S., 1939, Ph.D., 1948 Michigan State

ROWLAND, JULIA OLIVE, 1947.....Instructor in Nursing
R.N., 1941, Consolidated Deaconess School of Nursing (Montana); B.S., 1947, Washington

ROWLANDS, THOMAS McKIE, 1928 (1943).....Associate Professor of General Engineering
B.S., 1926, Massachusetts Institute of Technology

ROWLEY, ELLEN MARIE, 1947.....Acting Instructor in Physical Education
A.B., 1942, Macalester College (Minnesota); M.Ed., 1943, Minnesota

ROWNTREE, JENNIE IRENE, 1925 (1932).....Professor of Home Economics; Director of the School of Home Economics
B.S., 1918, Wisconsin; M.S., 1925, Chicago; Ph.D., 1929, Iowa

ROYS, RALPH LOVELAND, 1948....Honorary Research Assistant Professor of Anthropology
Ph.B., 1900, Michigan; H.L.D., 1936, Whitman College

RUCH, THEODORE CEDRIC, 1946.....Professor of Physiology; Executive Officer of the Department of Physiology and Biophysics
B.A., 1927, Oregon; M.A., 1928, Stanford; B.A., 1930, B.S., 1932, Oxford; Ph.D., 1933, Yale

RULIFSON, LEONE HELMICH, 1926 (1943).....Associate Professor of Physical Education
B.S., 1922, M.A., 1936, Washington

RUPP, NATALIE COLES, 1947.....Instructor in Humanistic-Social Studies
B.A., 1945, University of California at Los Angeles

RUSHMER, ROBERT FRAZER, 1947.....Assistant Professor of Physiology
B.S., 1936, Chicago; M.D., 1939, Rush Medical College

RUSTAD, JOHN, 1948.....Associate in Humanistic Social Studies
B.A., 1948, Washington

RUSTEBAKKE, HOMER MARTIN, 1947.....Instructor in Electrical Engineering
B.S., 1941, Polytechnic College of Engineering (Oakland); M.S., 1945, Pittsburgh

RUTHERFORD, FREDERICK WARNER, 1942.....Lecturer in Nursing
A.B., 1930, Illinois; M.D., 1935, Harvard

RUTHERFORD, ROBERT NORTHWALL, 1948.....Clinical Instructor in Obstetrics and Gynecology
A.B., 1932, Illinois; M.D., 1936, Harvard

RUTLEDGE, IVAN CATE, 1947.....Assistant Professor of Law
B.A., 1934, Carson-Newman College (Tennessee); M.A., 1940, LL.B., 1946, Duke

RYAN, MILO, 1946.....Acting Assistant Professor of Journalism
B.A., 1928, M.A., 1934, Michigan

ST. CLAIR, LAURA PHENELLA, 1937 (1947).....Instructor in English
A.B., 1915, West Lafayette (Ohio); M.A., 1917, Adrian College (Michigan)

SABAGH, GEORGES, 1948.....Assistant Professor of Sociology
A.B., 1941, M.A., 1943, California

SALMON, CHRISTOPHER VERNEY, 1948.....Visiting Professor of Philosophy
B.A., 1925, M.A., 1927, Oxford (England); Ph.D., 1928, Freiburg Im. Br. (Germany)

SAMPSON, DONALD CALVIN, 1946.....Municipal Research Consultant
B.A., 1932, Washington

SANDERMAN, LLEWELLYN ARTHUR, 1928 (1944).....Assistant Professor Physics
B.S., 1923, Linfield College (Oregon); M.S., 1931, Ph.D., 1943, Washington

SANDERS, JOHN C., 1949.....Lecturer in Aeronautical Engineering
B.S. in E.E., 1925, Washington

SANDERSON, ERIC ROBERT, 1947.....Clinical Associate in Anatomy and Surgery
B.S., 1935, Minnesota; M.D., 1937, Harvard

SAUERLANDER, ANNEMARIE MARGARET, 1949.....Associate Professor of German
B.A., 1928, M.A., 1930, Buffalo; Ph.D., 1936, Cornell University

SAVAGE, GEORGE MILTON, 1935 (1945).....Associate Professor of English
BA., 1928, M.A., 1928, Ph.D., 1935, Washington

SAVELLE, MAX, 1947.....Professor of History
A.B., 1925, M.A., 1926, Ph.D., 1932, Columbia

SCHALLER, GILBERT SIMON, 1922 (1937).....Professor of Mechanical Engineering
B.S. in M.E., 1916, Illinois; M.B.A., 1925, Washington

SCHALLERT, WILLIAM LOUIS, 1947 (1948).....Instructor in Meteorology
B.S., 1938, Wisconsin State Teachers College

SCHARDT, ALVIN LUDWIG, 1944.....Associate in Music

SCHERTEL, MAX, 1931 (1947).....Assistant Professor of German
B.Ed., 1909, Colorado Normal School; B.A., 1923, M.A., 1928, Ph.D., 1938, Washington

SCHLESINGER, ERNEST CARL, 1949.....Associate in Philosophy
B.S., 1947, Washington

SCHRIEVER, ALBERT NATHAN, 1948.....Assistant Professor of Management
B.S. in M.E., 1938, Illinois Institute of Technology; M.B.A., 1947, Harvard

SCHROEDER, HERMAN J., 1948.....Associate in Obstetrics and Gynecology
B.S., 1931, Washington; M.D., 1940, Oregon

SCHMID, CALVIN FISHER, 1937 (1941).....Professor of Sociology; Director of the Office of Population Research
B.A., 1925, Washington; Ph.D., 1930, Pittsburgh

SCHMIDT, FRED HENRY, 1946.....Assistant Professor of Physics
B.S.E., 1937, Michigan; M.A., 1940, Buffalo; Ph.D., 1945, California

SCHRADER, OTTO HARRY, JR., 1936 (1945).....Associate Professor of Forest Products
B.S.F., 1931, Washington; M.S., 1932, Wisconsin; Ph.D., 1942, Yale

SCHRAG, CLARENCE CLYDE, 1944 (1946).....Instructor in Sociology
B.A., 1939, Washington State; M.A., 1945, Washington

SCHUBERT, WOLFGANG MANFRED, 1947.....Instructor in Chemistry
B.S., 1941, Illinois; Ph.D., 1947, Minnesota

SCHULTZ, ARTHUR GUSTAVE, 1946...Clinical Associate Professor of Fixed Partial Dentures
D.M.D., 1924, North Pacific College

SCOTT, WILLARD FRANK, 1948.....Acting Instructor in Geology
B.S., 1941, M.S., 1947, Utah

SCUDDER, SIDNEY TOWNSEND, 1948.....Clinical Instructor in Medicine
M.D., 1943, Columbia

SEELYE, WALTER BALE, 1947.....Clinical Professor of Pediatrics; Acting Executive Officer of the Department of Pediatrics
B.S., 1922, Washington; M.D., 1926, Harvard

SEIDLIN, OSKAR, 1949.....Visiting Lecturer in Germanic Languages
Ph.D., 1935, University of Basel (Switzerland)

SERGEV, SERGIUS IVAN, 1923 (1946).....Professor of Engineering Mechanics
B.S. in M.E., 1923, M.E., 1931, Washington

SEYMOUR, ALLYN HENRY, 1948. ...Research Associate in the Applied Fisheries Laboratory
B.S., 1937, Washington

SHANNON, LYLE WILLIAM, 1946.....Associate in Sociology
B.A., 1942, Cornell College (Iowa)

SHAPLEY, JAMES LOUIS, 1947.....Associate in Speech
B.A., 1947, Washington

SHATTUCK, WARREN LOCKE, 1935 (1941).....Professor of Law
B.A., LL.B., 1934, Washington; J.S.D., 1936, Yale

SHAW, JOHN ROGER, 1948.....Associate in Russian Language
B.A., 1942, Washington

SHAW, JOSEPH WILLIAM, 1947.....Clinical Professor of Dermatology; Chairman of the Section on Dermatology
B.S., 1925, M.D., 1926, M.S., 1930, Michigan

SHEEHE, GORDON HENRY, 1948.....Lecturer in Political Science; Director of Law Enforcement Curriculum
B.S., 1935, Vermont; Certificate of Traffic Police Administration, 1938, Northwestern

SHEFELMAN, S. HAROLD, 1930.....Lecturer in Law
Ph.B., 1920, Brown; LL.B., 1925, Yale

SHELDON, CHARLES STUART, II, 1940 (1946).....Assistant Professor of Economics
B.A., 1936, M.A., 1938, Washington; A.M., 1939, Ph.D., 1942, Harvard

SHEPARD, ROBERT EASTON, 1947.....Research Associate in Hydraulic Engineering
B.S., 1940, Washington

SHERIDAN, ALFRED I., 1948.....Clinical Associate in Anatomy
B.S., 1938, Washington; M.D., 1943, Northwestern

SHERMAN, JOHN CLINTON, 1942 (1948).....Assistant Professor of Geography
A.B., 1937, Michigan; M.A., 1943, Clark University; Ph.D., 1947, Washington

SHERWOOD, KENNETH KYLER, 1940 (1947).....Clinical Assistant Professor of Medicine
B.S., 1923, B.M., 1925, M.D., 1926, Minnesota

SHIH, VINCENT YU-CHUNG, 1945.....Assistant Professor of Chinese Language, Literature, and Philosophy
B.A., 1925, Fukien Christian University (Foochow); M.A., 1930, Yenching University; Ph.D., 1939, Southern California

SHIPPEE, EVA MARIA, 1949.....Associate in Psychology
B.A., 1940, Barnard College; Bacc. Philo., 1937, Lycee Moliere, Paris, France

SHIPMAN, GEORGE ANDERSON, 1946.....Professor of Public Administration; Co-Director of the Institute of Public Affairs
B.A., 1925, M.A., 1926, Wesleyan University (Connecticut); Ph.D., 1931, Cornell University

SHOLLEY, JOHN BURRILL, 1932 (1939).....Professor of Law
LL.B., 1932; B.A., 1935, Washington; J.S.D., 1937, Chicago

SHUCK, GORDON RUSSELL, 1918 (1937).....Professor of Electrical Engineering
B.S. in E.E., 1906, Minnesota

SIDEY, THOMAS KAY, 1903 (1943).....Professor Emeritus of Latin and Greek
A.B., 1891, Victoria University; Ph.D., 1900, Chicago

SIEG, LEE PAUL, 1934 (1946).....President Emeritus of the University
B.S., 1900, M.S., 1901, Ph.D., 1910, Iowa; LL.D., 1934, Pittsburgh, 1941, Iowa

SIMON, WALTER, B., 1949.....Associate in Germanic Languages
B.A., 1947, Washington

SIMOS, JOHN GEORGE, 1948.....Associate in Romance Languages and Literature

SIMPSON, LURLINE VIOLET, 1924 (1944).....Associate Professor of Romance Languages
B.A., 1920, M.A., 1924, Ph.D., 1928, Washington

SIMPSON, WILLIAM TRACY, 1948.....Instructor in Chemistry
A.B., 1943, California

SIMS, WAYNE WALDO CONWAY, 1948.....Clinical Instructor in Public Health and Preventive Medicine
M.D., 1929, Colorado

SIRKEN, MONROE GILBERT, 1947 (1948).....Research Associate, Laboratory of Statistical Research, and Washington Public Opinion Laboratory
B.A., 1946, M.A., 1947, California

SIVERTZ, VICTORIAN, 1926 (1936).....Assistant Professor of Chemistry
B.S., 1922, Washington; M.S., 1924, West Virginia; Ph.D., 1926, McGill

SKAHEN, JULIA GOODSELL, 1945 (1946).....Assistant Professor of Anatomy and Physiology
B.S., 1926, M.S., 1928, Washington; Ph.D., 1941, Chicago

SKEELS, DELL ROY, 1946 (1947).....Associate in English
B.A., 1941, M.A., 1942, Idaho

SKEELS, ESTHER LEECH, 1948.....Assistant Professor of Nursery Education
B.A., 1925, Iowa State Teachers College; M.A., 1930, Columbia

SKINNER, MACY MILLMORE, 1916 (1947).....Professor Emeritus of Economics; Counsellor for Foreign Trade Students
A.B., 1894, A.M., 1895, Ph.D., 1897, Harvard

SKRETTING, ARNE, 1948.....Research Associate in Civil Engineering
Diploma in Engineering, Technische Hochschule Darmstadt (Germany)
M.S. in M.E., 1948, Colorado

SKUBI, KAZIMER BOGARD, 1947.....Clinical Instructor in Medicine; Lecturer in Nursing
B.S., 1932, Washington; M.D., 1940, Rush Medical College

SMID, CAROLINE GEARHART, 1947.....Associate in Speech
B.A., 1935, Washington

SMITH, ALBERT WILLIAM, 1947.....Associate in Geography
A.B., 1943, Clark University

SMITH, BRUCE BROWNFIELD, 1946.....Clinical Instructor in Operative Dentistry; Clinical Instructor in Fixed Partial Dentures
B.S., 1941, D.M.D., 1942, North Pacific College

SMITH, CHARLES WALLACE, 1948.....Associate in Art

SMITH, CHARLES WESLEY, 1905 (1947).....Librarian Emeritus; Professor Emeritus of Librarianship; Bibliographic Consultant
B.A., 1903, B.L.S., 1905, Illinois

SMITH, ELMER HALDON, 1947.....Instructor in Electrical Engineering; Research Associate in the Engineering Experiment Station
E.E., 1942, University of Cincinnati

SMITH, ELMER RICHARD, 1948.....Acting Instructor in Anthropology
B.S., 1931, M.S., 1932, Utah

SMITH, FREDERICK CHARNLEY, 1926 (1947).....Professor of Civil Engineering
B.S. in C.E., 1926, C.E., 1929, Washington

SMITH, GEORGE DUNCAN, 1946.....Research Associate in the Bureau of Governmental Research and Services
B.A., 1944, Washington

SMITH, GEORGE H., 1948.....Associate in English
B.A., 1933, California; M.A., 1946, Montana

SMITH, GEORGE SHERMAN, 1921 (1941).....Professor of Electrical Engineering
B.S. in E.E., 1916, E.E., 1924, Washington

SMITH, HARRIET HOLBROOK, 1949.....Assistant Professor of Nursing
A.B., 1918, Mt. Holyoke College (Massachusetts); R.N., 1920, Seattle General Hospital

SMITH, HARRY EDWIN, 1914 (1948).....Professor Emeritus of Insurance
A.B., 1906, M.A., DePauw; Ph.D., 1912, Cornell University

SMITH, HAZEL MARTHA, 1944 (1948).....Acting Instructor in Home Economics
B.S., 1927, Oregon State

SMITH, LAURA BELLE, 1947.....Instructor in Nursing
R.N., 1945, Swedish Hospital (Seattle); B.S., 1946, Seattle Pacific College

SMITH, ROBERT HOWARD, 1947.....Research Associate in Aeronautical Engineering
B.S., 1946, Washington

SMITH, R. PHILIP, 1948.....Clinical Instructor in Obstetrics and Gynecology
A.B., 1930, B.S., 1932, M.D., 1934, Kansas

SMITH, STEVENSON, 1911 (1916).....Professor of Psychology
B.S., 1904, Ph.D., 1909, Pennsylvania

SMULLYAN, ARTHUR FRANCIS, 1946.....Assistant Professor of Philosophy
A.B., 1936, College of the City of New York; A.M., 1940, Ph.D., 1941, Harvard

SNADER, ELIZABETH ALBEE ADAMS, 1945.....Instructor in Music
B.Mus., 1935, New England Conservatory of Music; M.M., 1938, Michigan

SNYDER, Lt. Col. ROBERT LYLES, U.S.A., 1948.....Assistant Professor of Military Science and Tactics
B.A., 1937, Washington College (Maryland)

SNYDER, WILLIAM ARTHUR, 1940 (1943).....Instructor in Mechanical Engineering
B.M.E., 1939, Minnesota

SODERSTROM, KENNETH MALCOLM, 1941 (1947)..Clinical Assistant Professor of Medicine
M.D., 1931, Nebraska; M.S. in P.H., 1940, Johns Hopkins

SOKOL, VILEM MARK, 1948.....Instructor in Music
B.Mus., 1938, M.Mus., 1946, Oberlin

SOMMERFELD, FRANZ RENE, 1947 (1948).....Instructor in German
B.A., 1944, California; M.A., 1946, Columbia

SOULE, ELIZABETH STERLING, 1920 (1934).....Professor of Nursing Education; Dean of the School of Nursing
R.N., 1907, Malden Hospital (Massachusetts); B.A., 1926, M.A., 1931, Washington; D.Sc., 1944, Montana State

SOUTHER, JAMES WALTER, 1948.....Instructor in Humanistic-Social Studies
B.A., 1947, M.A., 1948, Washington

SPARKMAN, DONAL ROSS, 1947.....Clinical Instructor in Medicine
B.S., 1930, Washington; M.D., 1934, Pennsylvania

SPAWN, Major DOUGLAS WILSON, U.S.A., 1947.....Assistant Professor of Military Science and Tactics
B.S., 1946, Syracuse

SPECTOR, IVAR, 1931 (1942).....Associate Professor of Russian Language and Literature
Graduate, 1919, Teachers' Seminar (Russia); M.A., 1926, Northwestern; Ph.D., 1928, Chicago

SPEELMON, CLARENCE ROBERT, 1948.....Associate in Art
B.A., 1947, University of Omaha

SPEIR, EDWARD B., 1946.....Lecturer in Nursing; Consultant in Surgery
B.A., 1929, M.D., 1933, Kansas

SPENCER, EMMA VIRGINIA, 1948.....Instructor in Physical Education
A.B., 1928, Florida State University; M.A., 1932, Columbia

SPICKARD, VERNON WARREN, 1947.....Clinical Assistant Professor of Pediatrics
B.S., 1917, Drake; M.D., 1918, Pennsylvania

SPICKARD, WARREN BEIM, 1948.....Clinical Instructor in Medicine
B.A., 1940, M.D., 1944, Stanford

SPIELHOLZ, JESS BERNARD, 1947.....Clinical Associate in Pathology
M.D., 1932, Long Island College of Medicine; M.S.P.H., 1943, Columbia

SPIELMANN, HEINZ, 1948.....Associate in Germanic Languages

SPROULE, JOHN ROBERT, 1948.....Instructor in Architecture
B.Arch., 1934, Washington

SPROULE, JOHN WALTER, 1948.....Instructor in Operative Dentistry
D.D.S., 1944, Toronto

STAFFORD, DONALD E., 1948.....Clinical Instructor in Neurosurgery
B.A., 1932, Park College (Missouri); M.D., 1935, Harvard; M.S., 1941, Minnesota

STAHL, HERBERT M., 1947.....Associate in English
B.A., 1936, Huron College (South Dakota); M.A., 1938, Colorado State College of Education

STAMATAKIS, ETHEL M., 1947.....Instructor in Nursing
R.N., 1928, Muncie Home Hospital (Indiana); B.S., 1938, Ball State Teachers College (Indiana); C.P.H.N., 1949, Western Reserve

STANSBERY, CLAUD J., 1946.....Senior Consultant in Prosthetics
D.D.S., 1905, California

STANSBY, MAURICE EARL, 1943.....Lecturer in Fisheries
B.Chem., 1930, M.S., 1933, Minnesota

STANTON, WILLIAM JOHN, JR., 1948.....Assistant Professor of Marketing
B.S., 1940, Lewis Institute (Illinois); M.B.A., 1941, Northwestern

STARKS, MILAN VICTOR, 1948.....Clinical Instructor in Oral Histology and Pulp Canal Therapy
B.S., 1940, D.D.S., 1940, Nebraska

STARR, JAMES MARION, 1946 (1948).....Instructor in Speech
B.A., 1937, M.A., 1943, Washington

STEIN, ARNOLD SIDNEY, 1948.....Associate Professor of English
A.B., 1936, Yale; A.M., 1938, Ph.D., 1942, Harvard

STEINBRUECK, VICTOR, 1946 (1947).....Instructor in Architecture
B.Arch., 1935, Washington

STEINER, JESSE FREDERICK, 1931 (1948).....Professor Emeritus of Sociology
B.A., 1901, Heidelberg College (Ohio); M.A., 1913, Harvard; Ph.D., 1915, Chicago

STEVENS, ARTHUR WILBER, 1948.....Associate in English
B.A., 1942, Brown

STEVENS, EDWIN BICKNELL, 1936 (1947).....Professor Emeritus of Education and Adviser to Higher Education Conference
A.B., 1896, Tufts; A.M., 1899, Harvard

STEVENS, LEONARD WOODBURY, 1937 (1948)..Assistant Professor of Physical Education
B.S., 1934, M.S., 1941, Washington

STEWART, ROGER E., 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1917, Cornell; M.D., 1928, Columbia

STIBBS, GERALD DENIKE, 1948.....Professor of Operative Dentistry; Acting Executive Officer of the Department of Operative Dentistry
D.M.D., B.S., 1931, North Pacific College

STIRLING, THOMAS BRENTS, 1932 (1943).....Associate Professor of English
LL.B., 1926, Ph.D., 1934, Washington

STOKKE, AGNES VICTORIA, 1948.....Associate in Librarianship
B.A., Lib. Cert., 1913, Washington

STOLZHEISE, RALPH M., 1948.....Clinical Instructor in Psychiatry
A.B., 1926, Willamette University; M.D., 1934, Oregon

STONE, CALEB S., JR., 1948.....Consultant in Surgery
B.S., 1922, Washington; M.D., 1926, Washington University (St. Louis); M.S., 1934, Virginia

STONE, EDWARD NOBLE, 1910 (1944).....Professor Emeritus of Classical Languages
A.B., 1891, M.A., 1893, Olivet (Michigan)

STONE, EMMA ABERCROMBIE, 1948.....Instructor in Nursing
B.A., 1937, Eastern Washington College of Education

STONE, GEORGE HARRISON, B.M.C., USN, 1947.....Instructor in Naval Science

STOUT, THOMAS MELVILLE, 1948.....Instructor in Electrical Engineering
B.S. in E.E., 1946, Iowa State; M.S.E., 1947, Michigan

STOWELL, ELLERY CORY.....Lecturer in Political Science

STRAYER, GEORGE DRAYTON, JR., 1949.....Professor of Education
B.S., 1927, Princeton; M.A., 1928, Ph.D., 1934, Columbia

STREET, ROBERT ELLIOTT, 1948....Acting Associate Professor of Aeronautical Engineering
B.S., 1933, Rensselaer Polytechnic (New York); M.A., 1934, Ph.D., 1939, Harvard

STREIB, JOHN FREDRICK, JR., 1947.....Assistant Professor of Physics
B.S., 1936, Ph.D., 1941, California Institute of Technology

STRICKLAND, FRANK EDWIN, 1948.....Instructor in General Engineering
B.S., 1926, Massachusetts Institute of Technology

STRIZEK, OTTO PAUL, 1947.....Clinical Instructor in Oral Anatomy
D.M.D., 1926, Oregon

STROH, JAMES EUGENE SIMMER, 1947.....Clinical Assistant Professor of Medicine
B.S., 1928, South Dakota; M.D., 1931, Illinois

STROTHER, CHARLES RIDDELL, 1931 (1947).....Professor of Psychology
B.A., 1929, M.A., 1932, Washington; Ph.D., 1935, Iowa

STUNTZ, DANIEL ELLIOT, 1940 (1945).....Assistant Professor of Botany
B.S., 1935, Washington; Ph.D., 1940, Yale

SUGARS, THOMAS W., 1948.....Clinical Instructor in Psychiatry
S.B., 1936, Washington State; M.D., 1939, Rush Medical College

SUNOO, HAROLD HAGWON, 1946.....Instructor in Korean Language
B.A., 1942, Pasadena College; M.A., 1944, Washington

SVALASTOGA, KAARE, 1948.....Research Associate in the Washington Public Opinion Laboratory
M.A., 1940, University of Oslo (Norway)

SVELANDER, KATHERINE GUSTAFSON, 1946.....Assistant Professor of Nursing
R.N., 1928, Swedish Hospital (Seattle); B.S., 1928, Washington

SVIHLA, ARTHUR, 1938 (1943).....Professor of Zoology
A.B., 1925, Illinois; M.S., 1928, Ph.D., 1931, Michigan

SWAN, EMERY FREDERICK, 1948.....Assistant Professor of Oceanography
B.S., 1938, Bates College (Maine); Ph.D., 1942, California

SWARM, HOWARD MYRON, 1947.....Instructor in Electrical Engineering
B.S. in E.E., 1940, Washington

SWISHER, IVAN WESLEY, 1948.....Associate in Physical Education
A.B., 1932, Bradley University (Illinois)

SWOMLEY, Capt. NEELY MILTON, U.S.A., 1947.....Assistant Professor of Military Science and Tactics
B.A., 1942, Coe College (Iowa)

SYLVESTER, HOWARD EUGENE, 1943 (1947).....Instructor in English
B.A., 1937, M.A., 1941, New Mexico

SYLVESTER, ROBERT OHRUM, 1947.....Assistant Professor of Civil Engineering
B.S. in C.E., 1936, Washington; S.M., 1941, Harvard

TANG, NIEN-YEE, 1948.....Lecturer in Mathematics
B.S., 1925, Washington; M.S., 1926, Michigan

TANNER, ROBERT LEIGH, 1947.....Instructor in Electrical Engineering
A.B., 1944, M.A., 1947, Stanford

TARTAR, HERMAN VANCE, 1917 (1927).....Professor of Chemistry; Executive Officer of Departments of Chemistry and Chemical Engineering
B.S., 1902, Oregon State; Ph.D., 1920, Chicago

TATSUMI, HENRY SABURO, 1935 (1946).....Associate Professor of Japanese Language
B.A., 1932, M.A., 1935, Washington

TAYLOR, EDWARD AYERS, 1929.....Professor of English
B.A., 1909, Denver University; M.A., 1918, Ph.D., 1925, Chicago

TAYLOR, GEORGE EDWARD, 1939 (1941).....Professor of Far Eastern History and Politics; Executive Officer of the Department of Far Eastern and Slavic Languages and Literature; Director of the Far Eastern and Russian Institute
A.B., 1927, A.M., 1928, Birmingham (England)

TAYLOR, ROBERT LINCOLN, 1941 (1945).....Professor of Law
B.A., 1927, Yale; J.D., 1930, Northwestern

TAYLOR, WALTER WILLARD, Jr., 1949.....Acting Assistant Professor of Anthropology
A.B., 1935, Yale, Ph.D., 1943, Harvard

TEEVAN, THOMAS FOSTER, 1946 (1947).....Associate in English
B.A., 1936, College of Puget Sound

TEMPLETON, FREDERIC EASTLAND, 1947.....Professor of Radiology; Executive Officer of the Department of Radiology
B.S., 1927, Washington; M.D., 1931, Oregon

TENNANT, HAROLD ELMER, 1944.....Acting Instructor in Geography
B.A., 1933, M.A., 1937, Washington

TERRELL, MARGARET ELMA, 1928 (1944).....Professor of Home Economics; Director of University Food Service
B.A., 1923, Penn College (Iowa); M.A., 1927, Chicago

TERRY, MIRIAM, 1930 (1937).....Assistant Professor of Music
B.M., 1926, Washington

THOMAS, BERNERD OWEN AMOS, 1946 (1948).....Professor of Periodontology; Executive Officer of the Department of Periodontology
D.D.S., 1935, B.A., 1936, M.S., 1939, Minnesota; D.D.S., 1940, Ph.D., 1946, Columbia

THOMAS, GERALD FREDERICK, 1947.....Lecturer in the School of Nursing
M.D., 1933, Nebraska

THOMAS, HARLAN, 1926 (1947).....Professor Emeritus of Architecture; Director Emeritus of the School of Architecture
B.S., 1894, Colorado State

THOMLE, KRISTINE, 1945.....Acting Instructor in Scandinavian
B.A., 1915, M.A., 1933, Washington

THOMPSON, CARLISLE HARRY, 1946.....Associate in English
B.S., 1922, U.S. Naval Academy

THOMPSON, DONALD EDWARD, 1948.....Associate in Economics
B.A., 1942, Washington

THOMPSON, GORDON GRAHAME, 1947.....Clinical Professor and Senior Consultant in Obstetrics and Gynecology
B.S., 1906, Macalester College (Minnesota); M.D., 1910, Illinois

THOMPSON, IVAN, 1947.....Clinical Instructor in Medicine
B.M., 1934, M.D., 1935, Northwestern

THOMPSON, THOMAS GORDON, 1919 (1929).....Professor of Chemistry; Director of Oceanographic Laboratories
A.B., 1914, Clark University; M.S., 1915, Ph.D., 1918, Washington

THOMPSON, WILLIAM FRANCIS, 1930 (1948).....Professor of Fisheries; Director of the Fisheries Institute
B.A., 1911; Ph.D., 1930, Stanford

THOMPSON, WILLIAM FRANCIS, Jr., 1949.....Associate in Geography
B.S., 1939, Washington

THOMSON, DAVID, 1902 (1947).....Professor Emeritus of Latin; Vice-President Emeritus; Pre-Law Advisor
B.A., 1892, Toronto; LL.D., 1936, British Columbia

THOMSON, KENNETH FRANCIS, 1948.....Assistant Professor of Psychology
B.A., 1939, Wayne University (Michigan); M.A., 1942, Ph.D., 1948, Ohio State

THORP, DONALD J., 1948.....Consultant in Obstetrics and Gynecology
A.B., 1921, B.S., 1923, M.D., 1927, Michigan

THORPE, BERENICE Du RAE, 1946 (1947).....Instructor in English
B.A., 1924, M.A., 1925, Washington

THORSON, INA VIRGINIA, 1949.....Acting Instructor in Home Economics
B.A., 1944, Washington

TIDWELL, MELVIN FRED, 1948.....Associate Professor of Business Education
B.S., 1933, Southwestern Institute of Technology (Oklahoma); M.A., 1936, Oklahoma A. and M.

TIDWELL, ROBERT AUSTIN, 1947.....Clinical Instructor in Pediatrics
B.S.M., 1935, M.D., 1937, Oklahoma

TIFFANY, WILLIAM ROBERT, 1947 (1948).....Instructor in Speech
B.A., 1946, Washington

TILLOTSON, HELEN GENE, 1945.....Instructor in Nursing Education
R.N., B.S., 1941, Minnesota

TOBIN, SAMUEL JOSEPH, 1949.....Acting Instructor in Anthropology
B.S., 1942, M.A., 1947, Utah

TONSING, ARTHUR RICHARD, 1947.....Associate in Mechanical Engineering

TOOLEY, GEORGE EDWARD, 1948.....Clinical Instructor in Pathology
A.B., 1933, M.D., 1937, Kansas

TORNEY, JOHN ALFRED, Jr., 1930 (1948).....Associate Professor of Physical Education
B.S., 1928, Washington; M.A., 1930, Columbia

TOWN, VICTOR JOHN, 1947 (1948).....Associate in Political Science
B.A., 1935, M.A., 1940, British Columbia

TRUAX, ARTHUR ROBERT, 1924.....Lecturer in Finance

TRUEBLOOD, DONALD VAUGHN, 1947.....Senior Consultant in Surgery
A.B., 1911, Washington; M.D., 1915, Johns Hopkins

TRUEBLOOD, PAUL GRAHAM, 1947.....Assistant Professor of English
A.B., 1928, Willamette (Oregon); M.A., 1930, Ph.D., 1935, Duke

TSCHUDIN, MARY STICKELS, 1942 (1948).....Associate Professor of Nursing; Assistant Dean of the School of Nursing
R.N., B.S., 1935, C.P.H.N., 1936, M.S., 1939, Washington

TSUTAKAWA, GEORGE, 1946.....Associate in Art
B.A., 1937, Washington

TUCKER, ERWIN ROBERT, 1948.....Instructor in Humanistic Social Studies
B.A., 1945, St. John's College (Maryland)

TUELL, JOSEPH IRVING, 1948.....Consultant in Orthopedics
M.D., 1932, Oregon

TURNER, EDWARD LEWIS, 1945.....Professor of Internal Medicine; Dean of the School of Medicine
B.S., 1922, M.S., 1923, Chicago; M.D., 1928, Pennsylvania

TURNER, MABEL ALEXANDRA, 1941 (1946).....Assistant Professor of Librarianship
A.B., 1926, Oregon; B.S. in L.S., 1931, Columbia

TUTTLE, AILEEN H., 1949.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1930, C.P.H., 1939, Washington; M.P.H., 1946, Minnesota

TYLER, RICHARD GAINES, 1929.....Professor of Sanitary Engineering
C.E., 1908, Texas; B.S. in C.E., 1910, Massachusetts Institute of Technology

TYREE, Comdr. ALEXANDER KELLY, U.S.N., 1948....Associate Professor of Naval Science
B.S., 1936, United States Naval Academy

TYVAND, RAY EUGENE, 1948.....Clinical Instructor in Urology
B.A., 1923, B.S., 1926, North Dakota; M.D., 1928, Rush Medical College (Chicago)

UEHLING, EDWIN ALBRECHT, 1936 (1947).....Professor of Physics
B.A., 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 Romance Languages
A.B., 1899, Toronto; A.M., 1901, Ph.D., 1905, Harvard; Litt.D., 1919, Universidad de San Marcos (Lima)

URQUHART, ALEXANDER DONALD, Jr., 1947.....Associate in Political Science
B.A., 1943, Washington

UTTERBACK, CLINTON LOUIS, 1918 (1934).....Professor of Physics; Executive Officer of Department of Physics; Director of Physics Laboratories
B.S., 1908, Purdue; M.S., 1918, Washington; Ph.D., 1926, Wisconsin

UTLEY, JOSEPHINE L., 1948.....Associate in Psychology
B.A., 1939, Reed College; M.S., 1946, Columbia

VAIL, CURTIS CHURCHILL DOUGHTY, 1939.....Professor of Germanic Languages; Executive Officer of the Department of Germanic Languages
A.B., 1924, Hamilton College; M.A., 1929, Ph.D., 1936, Columbia

VAN CLEVE, RICHARD, 1948.....Professor of Fisheries; Acting Director of the School of Fisheries
B.S., 1927, Ph.D., 1936, Washington

VANDEWALL, GEORGE L., 1947..... Clinical Assistant Professor of Operative Dentistry
A.B., 1932, Washington; D.M.D., 1937, Oregon

VAN HORN, ROBERT BOWMAN, 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 OGLE, LOUISE, 1915 (1947).....Professor Emeritus of Music; Examiner in Piano

VAN VACTOR, WILLIAM EDWIN, 1947.....Associate in English
A.B., 1943, A.M., 1946, Oregon

VAUGHN, IRVIN RUSSELL, 1948.....Clinical Instructor in Public Health and Preventive Medicine
B.A., 1927, Iowa State Teachers College

VERRALL, JOHN WEEDON, 1948.....Assistant Professor of Music
B.Mus., 1929, Minneapolis College of Music; Cert. of Mus., 1932, Liszt Conservatory (Budapest); B.A., 1934, Minnesota

VESANAN, EIJO ERLEVI, 1948.....Assistant Professor of Geology
M.A., 1936, Ph.D., 1942, Cand. of Odontology, 1947, University of Helsinki (Finland)

VICKNER, BERTHA ALMEN, 1920 (1948).....Assistant Professor of English
B.A., 1910, Gustavus Adolphus (Minnesota); M.A., 1917, Washington

VICKNER, EDWIN JOHAN, 1912 (1948)....Professor Emeritus of Scandinavian Languages; Research Consultant
A.B., 1901, A.M., 1902, Ph.D., 1905, Minnesota

VINOCOUR, SEYMOUR MAURICE, 1948.....Instructor in Speech
A.B., 1943, Southern California; M.A., 1948, Nevada

VOEGTLIN, WALTER LYLE, 1947... .....Clinical Assistant Professor of Medicine; Clinical Associate of Physiology
B.S., 1932, M.S., 1933, B.M., 1934, M.D., 1935, Northwestern

VON BREVERN, MAXIM C., 1934 (1942).....Associate Professor of Political Science
Graduate, 1907, Imperial Royal Military Academy, Wiener Neustadt, Austria; Ph.D., 1935, Washington

WADDELL, Capt. FREEMAN B., U.S.A., 1947.....Assistant Professor of Military Science and Tactics

WADE, ARTHUR E., 1928.....Lecturer in Home Economics
B.S., 1902, Cornell College (Iowa); M.D., 1905, Sioux City College of Medicine (Iowa)

WAGNER, CARL VERN, 1947.....Associate in English
B.S., 1946, Washington

WAGNER, CHARLOTTE FITTON, 1944 (1946).....Instructor in Speech
B.A., 1937, M.A., 1941, Washington

WAGNER, LOUIS CHARLES, 1947.....Associate Professor of Marketing
B.A., 1938, Washington; M.A., 1940, Minnesota

WALDRON, LAWRENCE GALEN, 1947.....Acting Instructor in Architecture
B.Arch., 1936, Washington

WALKER, JOHN HUNT, 1948.....Clinical Instructor in Radiology
B.S., 1937, Washington; M.D., 1940, Michigan

WALKER, LAUREN McNEAL, 1946 (1947).....Assistant Professor of Accounting
B.A., 1939, M.B.A., 1943, Washington

WALKER, RICHARD BATTSON, 1948.....Instructor in Botany
B.S., 1938, Illinois

WALTERS, MARGARET CURTIS, 1929 (1947).....Assistant Professor of English
B.A., 1917, Mills; M.A., 1919, Yale

WANAMAKER, FRANK HERMAN, 1947 (1948).....Professor of Major Oral Surgery
D.D.S., 1922, M.D., 1929, Northwestern

WANG, KAN-YU, 1949.....Visiting Professor of Chinese Politics
B.A., 1929, National Tsinghua University; M.A., 1930, Ph.D., 1947, Harvard

WARD, ARTHUR ALLEN, Jr., 1948.....Assistant Professor of Surgery
B.A., 1938, M.D., 1942, Yale

WARNER, FRANK MELVILLE, 1925 (1937).....Professor of General Engineering
B.S. in M.E., 1907, Wisconsin

WARNING, MARGARET CYNTHIA, 1943 (1947).....Assistant Professor of Home Economics
B.A., 1936, Morningside College (Iowa); B.S., 1944, M.A., 1945, Washington

WATERS, ELLEN HARRIET, 1946.....Assistant Professor of Physical Education
B.S., 1927, Washington; M.A., 1940, Columbia

WATSON, WARREN KENNETH, 1948.....Instructor in Mechanical Engineering
B.S. in M.E., 1943, Washington State

WATSON, WILBUR EARL, 1946.....Clinical Associate in Anatomy and Surgery
B.S., 1930, Washington; M.D., 1935, McGill

WATTS, CHARLES EDWARD, 1947.....Clinical Professor of Medicine
B.S., 1913, Idaho; M.D., 1918, Rush Medical College

WEATHERFORD, JUDITH ANNE, 1949.....Associate in English
B.S., 1946, Oregon State; M.A., 1948, Washington State

WEAVER, CHARLES EDWIN, 1907 (1921).....Professor of Geology
B.S., 1904, Ph.D., 1907, California

WEAVER, ROBERT NOLAN, GMC, U.S.N., 1948.....Instructor in Naval Science

WEBSTER, DONALD HOPKINS, 1939 (1948).....Professor of Political Science; Director of Bureau of Governmental Research and Services
B.A., 1929, LL.B., 1931, Ph.D., 1933, Washington

WEIKEL, RAYMOND CHESTER, 1948.....Assistant Professor of Aeronautical Engineering
A.B., 1932, Wabash College (Indiana); A.M., 1939, Illinois

WEINSTEIN, SYDNEY, 1947.....Clinical Instructor in Medicine
B.S., 1926, Washington; M.D., 1930, Jefferson Medical College

WEINTRAUB, DAVID L., 1948.....Associate in Mineral Engineering
B.S., 1948, Alfred University (New York)

WEISER, RUSSELL SHIVLEY, 1934 (1942).....Associate Professor of Immunology
B.S., 1936, M.S., 1931, North Dakota State; Ph.D., 1934, Washington

WELANDER, ARTHUR DONOVAN, 1937 (1948).....Assistant Professor of Fisheries
B.S., 1934, M.S., 1940, Ph.D., 1946, Washington

WELKE, WALTER CARL, 1929 (1943).....Associate Professor of Music
B.M. in Educ., 1927, Michigan

WENDLING, AUBREY, 1948.....Associate in Sociology
B.A., 1944, San Francisco State College

WENNEKENS, MARCEL PAT, 1948.....Associate in Romance Languages and Literature

WERNER, AUGUST HANSEN, 1931 (1932).....Professor of Music
B.S., 1913, College of Agriculture, Stend, Norway

WESNER, ELENORA M., 1924 (1946).....Assistant Professor of Germanic Languages
B.Ped., 1909, Colorado State Normal School; A.B., 1915, Chicago; M.A., 1923, Northwestern

WESSMAN, HAROLD EVERETT, 1948.....Professor of Civil Engineering; Dean of the College of Engineering
B.S., 1924, M.S., 1925, C.E., 1929, Ph.D., 1936, Illinois

WEST, FRANK BEACH, 1946.....Assistant Professor of Chemical Engineering
B.S. in Chem.E., 1936, Ph.D., 1939, Minnesota

WESTPHAL, KATHERINE V., 1946.....Instructor in Art
B.A., 1943, California; M.A., 1943, California School of Fine Arts

WHEELER, BAYARD O., 1948.....Associate Professor of Business Administration
A.B., 1928, California; M.A., 1930, Washington; Ph.D., 1942, California

WHEELER, HARRY EUGENE, 1948.....Associate Professor of Geology
B.S., 1930, Oregon; A.M., 1932, Ph.D., 1935, Stanford

WHERRETTE, WILLIAM CARNES, 1948.....Instructor in Architecture
B.Arch., 1948, Carnegie Institute of Technology

WHITE, ELLISON F., Jr., 1948.....Clinical Instructor in Medicine
B.A., 1937, Mississippi College; M.D., 1942, Tennessee; M.S., 1947 Minnesota

WHITE, MARY ELIZABETH, 1946.....Instructor in Music
B.M.E., 1935, Southern California

WHITE, MYRON LESTER, 1947.....Associate in Humanistic-Social Studies
B.A., 1943, Washington

WHITE, NANCY MAY, 1949.....Associate in Drama
B.A., 1933, Washington

WHITELEY, ARTHUR HENRY, 1947.....Assistant Professor of Zoology
B.A., 1938, Kalamazoo College; M.A., 1939, Wisconsin; Ph.D., 1945, Princeton

WHITTLESEY, WALTER BELL, 1909 (1929).....Assistant Professor of Romance Languages
B.A., 1907, M.A., 1909, Washington

WICKS, RAYMOND ERNST, 1948.....Associate in Mechanical Engineering

WILCOX, ELGIN ROSCOE, 1921 (1936).....Professor of General Engineering; Executive Officer of the Department of General Engineering
B.S., 1915, Met.E., 1919, Washington

WILHELM, HELLMUT, 1948.....Lecturer in Chinese History
Ph.D., 1932, University of Berlin

WILKIE, RICHARD FRANCIS, Jr., 1937 (1948).....Assistant Professor of Germanic Literature
B.A., 1934, M.A., 1936, Washington

WILKINSON, JOHN N., 1947.....Clinical Instructor in Medicine
B.S., 1925, Mississippi; M.D., 1928, Virginia

WILLIAMS, BETSEY H., 1948.....Acting Assistant Professor of Nursery Education
B.S., 1945, M.A., 1946, New York University

WILLIAMS, CURTIS TALMADGE, 1920 (1936).....Professor of Methods and Philosophy of Education
A.B., 1913, Kansas State Normal; A.M., 1914, Ph.D., 1917, Clark University

WILLIAMS, ELGIN, 1947.....Assistant Professor of Economics
A.B., 1942, A.M., 1944, Texas; Ph.D., 1948, Columbia

WILLIAMS, JOSEPH EARL, 1946 (1948).....Associate Professor of Geography
A.B., 1930, California; Ph.D., 1932, Vienna

WILLIAMS, PAUL LELAND, 1947.....Clinical Instructor in Dermatology
B.S., 1934, M.D., 1937, Oregon

WILLIAMS, ROBERT HARDIN, 1948.....Professor of Medicine; Executive Officer of the Department of Medicine
A.B., 1929, Washington and Lee; M.D., 1934, Johns Hopkins

WILLIS, CLIFFORD LEON, 1946.....Instructor in Geology
B.S. in Min. Engr., 1939, Kansas

WILLIS, LEOTA SNIDER, 1943 (1948).....Assistant Professor of English
B.A., 1923, California; M.A., 1930, Ph.D., 1931, Pennsylvania;
Cert. of Studies, 1932, Sorbonne, Paris

WILLISTON, FRANK GOODMAN, 1943 (1944).....Associate Professor of Far Eastern History
A.B., 1922, Ohio Wesleyan; M.A., 1926, Ph.D., 1935, Chicago

WILSON, CLOTILDE MARCONNIER, 1929 (1937).....Assistant Professor of Romance Languages
B.A., 1926, M.A., 1927, Ph.D., 1931, Washington

WILSON, FLORENCE BERGH, 1929 (1947).....Associate Professor of Music
B.M., 1917, B.A., 1924, Washington; M.A., 1925, Columbia

WILSON, GALE EDWARD, 1948.....Lecturer in Forensic and Legal Medicine
B.S., 1926, Washington; M.D., 1930, Harvard

WILSON, ROBERT ARDEN, 1948.....Associate in Far Eastern
B.A., 1939, Willamette; M.A., 1942, Washington

WILSON, ROLAND EDWARD, 1947.....Instructor in Architecture
B.S. in Arch., 1932, Michigan

WILSON, RUTH MARIAN, 1936 (1945).....Associate Professor of Physical Education; Executive Officer of the Department of Physical Education for Women
B.S., 1931, Utah; M.S., 1936, Wisconsin

WILSON, WAYNE LARSEN, 1949.....Associate in Mechanical Engineering
B.S. in Aero.E., 1945, Colorado

WILSON, WILLIAM CHARLES EADE, 1926 (1947).....Professor of Romance Languages
A.B., 1922, Montana; M.A., 1925, Ph.D., 1928, Washington

WILSON, WILLIAM RONALD, 1919 (1929).....Professor of Psychology
B.A., 1917, M.S., 1920, Ph.D., 1925, Washington

WINGER, ROY MARTIN, 1918 (1925).....Professor of Mathematics; Executive Officer, Department of Mathematics
A.B., 1906, Baker (Kansas); Ph.D., 1912, Johns Hopkins

WINN, NORMAN FIELD, 1948.....Associate in English
B.A., 1931, Utah; Ph.M., 1932, Wisconsin

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

WITHEY, STEPHEN BASSETT, 1947.....Associate in Psychology
B.A., 1940, Asbury College (Kentucky); M.A., 1947, Northwestern

WITTFOGEL, KARL AUGUST, 1947.....Acting Professor, Far Eastern and Russian Institute
Ph.D., 1928, Frankfurt

WOLFE, HAROLD KENNETH, 1948.....Associate in Mechanical Engineering

WOLLETT, DONALD HOWARD, 1946 (1948).....Assistant Professor of Law; Assistant to the Dean of the Law School
B.A., 1941, Chicago; LL.B., 1942, Indiana

WOODCOCK, EDITH, 1930 (1945).....Associate Professor of Music
B.M., 1925, Rochester; M.M., 1936, Washington

WOODWARD, RICHARD ROBERT, 1947..Assistant Professor of Management and Statistics; Assistant to the Dean of Business Administration
B.A., 1939, Dartmouth; M.B.A., 1941, Harvard

WOOLSTON, HOWARD BROWN, 1919 (1947).....Professor Emeritus of Sociology; Research Consultant
A.B., 1898, Yale; S.T.B., 1901, Chicago; M.A., 1902, Harvard; Ph.D., 1909, Columbia

WORCESTER, DEAN AMORY, Jr., 1946.....Assistant Professor of Economics
A.B., 1939, M.A., 1940, Nebraska; Ph.D., 1943, Minnesota

WORKS, AMY LOU, 1946.....Associate in Secretarial Studies
A.B., 1941, MacMurray College (Illinois)

WRIGHT, Lt. (jg) BURTON, U.S.N.R., 1948.....Assistant Professor of Naval Science
B.S., 1947, Washington

WRIGHT, KENNETH ARLING, 1947.....Research Associate in Pulp Mills Research
B.S., 1932, Ph.D., 1938, Washington

WRIGHT, LAURENCE ALBERT, 1948.....Associate in Finance
B.A., 1947, Washington

WU, JAMES TA-KUN, 1947 (1949).....Acting Assistant Professor of Economics; Research Associate in the Far Eastern and Russian Institute
B.A., 1934, Soochow University (China); M.A., 1936, Wa Se-Da University (Japan)

WYBOURN, MARJORY ADA, 1948.....Instructor in Home Economics
B.S., 1944, Washington; M.A., 1948, Columbia

WYRENS, ROLLIN G., 1948.....Clinical Instructor in Urology
B.S., 1934, M.B., 1937, M.D., 1938, Northwestern; M.S., in Surgery, 1942, Minnesota

YAGGY, ELINOR MAY, 1943 (1946).....Instructor in English
B.A., 1929, M.A., 1939, Idaho; Ph.D., 1946, Washington

YAGI, FUMIO, 1946 (1947).....Instructor in Mathematics
B.S., 1938, M.S., 1941, Washington; Ph.D., 1943, Massachusetts Institute of Technology

YAMAMURA, DOUGLAS SHIGEHARU, 1947.....Associate in Sociology
Ed.B., 1938, Ed.M., 1941, University of Hawaii

YANG, RICHARD FU-SEN, 1948.....Associate in Chinese Language
B.A., 1943, Yenching

YETT, KEITH S., 1948..... Associate in Mechanical Engineering

YODER, WARREN GEORGE, 1948.....Instructor in Civil Engineering
B.S., 1942, Purdue

YOUNG, ALLAN CHARLES, 1949.....Research Associate in Physiology and Biophysics
B.A., 1930, M.A., 1932, British Columbia; Ph.D., 1934, Toronto

YOUNG, HARRY ALLEN, 1948.....Professor of Prosthetics; Executive Officer of the Department of Prosthetics
D.D.S., 1919, Indiana Dental College

YOUNGKEN, HEBER WILKINSON, JR., 1942 (1946)...Assistant Professor of Pharmacognosy
A.B., 1935, Bucknell University (Pennsylvania); B.S., 1938, Massachusetts College of Pharmacy; M.S., 1940, Ph.D., 1942, Minnesota

YUNCK, WILLIAM PHILIP, 1948.....Clinical Instructor in Urology
B.S., 1930, B.M., 1934, M.D., 1935, Minnesota

ZECH, RAYMOND L., 1947.....Senior Consultant in Surgery
B.S., 1919, M.D., 1920, Northwestern

ZETLIN, EMANUEL ROMAN, 1947.....Professor of Music
B.A., 1916, Imperial Conservatory (Petrograd); Dr.Mus., 1936, Washington College of Music (Washington, D.C.)

ZILLMAN, LAWRENCE JOHN, 1930 (1943).....Associate Professor of English
B.A., 1928, Ph.D., 1936, Washington

ZIMMERMAN, BRUCE McCLUNG, 1947.....Clinical Assistant Professor of Medicine
B.S., 1935, North Dakota; M.D., 1937, Northwestern

ZUCKERMAN, HERBERT SAMUEL, 1939 (1947).....Associate Professor of Mathematics
B.S., 1932, California Institute of Technology; M.S., 1934, Chicago; Ph.D., 1936, California

WALKER-AMES PROFESSORS AND LECTURERS

BLOCH, FELIX, 1948.....Walker-Ames Professor of Physics
Department of Physics, Stanford University

BUKOFZER, MANFRED F., 1949.....Walker-Ames Professor of Music
Department of Music, University of California

GOTTSCHALK, LOUIS.....Walker-Ames Professor of History
Professor of Modern History, University of Chicago

LAZARSFELD, PAUL F., 1948.....Walker-Ames Professor of Sociology
Department of Sociology, Columbia University

REDFIELD, ALFRED CLARENCE, 1948...Walker-Ames Professor of Biological Oceanography
Associate Director Wood's Hole Oceanography Institute, Wood's Hole, Massachusetts

ROBINOW, CARL F.....Walker-Ames Professor of Microbiology
Strangeways Laboratory, Cambridge, England

THE UNIVERSITY OF WASHINGTON

More than three-quarters of a century ago, in 1861, the University of Washington was established in Seattle by act of the territorial legislature.

On November 4 of that same years classes were opened in a building erected on a ten-acre tract, then on the outskirts of the pioneer city but now situated in the heart of Seattle's metropolitan district near the Olympic Hotel.

By 1890 the institution had outgrown its first campus, and in 1895 it was moved to its present location bordering on Lake Washington and Lake Union. Generally considered one of the most beautiful campuses in the country, it includes more than 600 acres, with a shore line of more than a mile on Lake Washington and a quarter of a mile on Lake Union.

From that first ten-acre campus has grown the great, modern University of Washington. From the first pioneer frame building has developed a plant valued at more than $30,000,000.

Its faculty has increased from one man in 1861 to 1,420 and its student body from an original 37 to more than 16,000.

Interesting Facts

Facilities at the University of Washington compare favorably with the best in the country.

LIBRARY FACILITIES

The University libraries contain over 655,000 volumes representing all fields in the University curriculum. About 11,000 serial publications are received currently. The basic collection is housed in the Henry Suzzallo Library building. Well chosen special collections are maintained in the various branch and departmental libraries: Architecture, Art, Chemistry, Education, Engineering, English and Speech, Far Eastern, Forestry, Health Sciences, Humanistic-Social, Institute of Labor Economics, Journalism, Mathematics and Physics, Mines, Philosophy, Political Science. The Pacific Northwest Americana collection, one of the best in the country, is located in the Main Library.

The Law Library in Condon Hall (109,000 volumes) contains the decisions of all English and American courts of last resort, and the reported decisions of all the lower courts. Extensive runs of the English, American, and colonial statutes are available, and all legal periodicals published in the English language are received.

The Drama Library has a noteworthy collection (13,000 volumes) containing about 4,000 acting editions of nineteenth-century plays, chiefly British; 300 manuscript plays by twentieth-century playwrights, British and American; 200 mimeographed acting editions of the late nineteenth- and early twentieth-century plays, chiefly American; 18,000 theatrical photographs of stage productions, portraits of actors, and other historical material.

Library service is augmented by a photographic laboratory fully equipped to provide photostats and microfilms for students and faculty.

The Pacific Northwest Bibliographic Center, sponsored by the Pacific Northwest Library Association, is housed in the library building. It maintains a Union Catalog of the holdings of more than thirty libraries in the Pacific Northwest as well as those of the Library of Congress and the John Crerar Library. The Bibliographic Center facilitates interlibrary loans and other cooperative library services in the region.

The library resources of Seattle, including the collections of the University, the Seattle Public Library, and the libraries of other agencies, enable the scholar to have access to well over a million and a half volumes.

Museum. Collections representative of the natural science and anthropology of the Northwest and the Pacific are housed in the Museum of the University of Washington, created as the Washington State Museum by law in 1899. The Museum also serves the state through traveling exhibits which are available to schools, libraries, and organized study groups.

Henry Art Gallery. The Horace C. Henry Gallery, with its collection representing the work of some 200 nineteenth-century painters, was the gift of the late Horace C.

Henry, of Seattle. Supplementing the permanent collection, traveling exhibitions are shown during the year.

University Press. Situated in Commerce Hall, the University Press is a modern and complete printing plant. It publishes the *Pacific Northwest Quarterly* (editor, Charles M. Gates, Ph.D.), the *Modern Language Quarterly* (editor, Edward Godfrey Cox, Ph.D.), the *College of Education Record* (editor, John E. Corbally, Ph.D.), the *Pacific Northwest Industry* (editor Charles J. Miller, M.B.A.), and *Soviet Press Translations* (editor, Ivar Spector, Ph.D.), in addition to various scholarly monographs and other general University publications.

Engineering Experiment Station. The Engineering Experiment Station of the University was established in December, 1917, to coordinate investigations in progress and to facilitate the development of engineering and industrial research at the University. Its purpose is to aid in the industrial development of the state and nation by scientific research and by furnishing information for the solution of engineering problems. The scope of the work is threefold:

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

(2) to undertake extended research and to publish reports on engineering and scientific problems;

(3) to provide opportunities for graduate engineers to conduct research under conditions that will most effectively prepare them for professional service.

The station offers a substantial number of research fellowships to highly qualified graduate students, who work under the direct supervision of the faculty of the various divisions. The results of the investigations are published in the form of bulletins, technical notes, and reports. Reprints of articles by members of the engineering faculty and graduate students published in recognized technical journals are also issued by the Station. Inquiries in regard to the activities of the Station or the graduate fellowships available should be addressed to the Director, Engineering Experiment Station, University of Washington, Seattle 5.

Mines Experiment Station. Occupying a part of Roberts Hall and working in close cooperation with the School of Mineral Engineering are the United States Bureau of Mines' Northwest Experiment Station and the Bureau's Northwest Mine Rescue Training Station which serve the Pacific Northwest and the coast regions of Alaska.

Oceanographic Laboratories. The University has one of the leading oceanographic laboratories of the world. The main laboratory is situated on the University campus fronting Lake Union. It is readily accessible to the sea through the Lake Washington ship canal system and at the same time retains all the advantages of an "on-campus" location. The field laboratories face salt water on a 480-acre tract on San Juan Island. In this region the marine flora and fauna are extensive and diversified, and extreme physical and chemical conditions may be found over a relatively small area. Both laboratories are provided with circulating sea water systems and are equipped and ideally located for the study of many of the problems of the sea—biological, physical, and chemical.

School of Fisheries. Adjacent as it is to both fresh and salt water, the University is ideally located for a fisheries school. The University of Washington School of Fisheries is the only university school of fisheries in the world. Numerous commercial fisheries, canneries, smokehouses, cold storage plants, and fertilizer plants are to be found in Seattle and the surrounding area. The School of Fisheries also has a hatchery, fish ponds, and experimental equipment—all of which, together with the other natural advantages, present unrivaled opportunities for the study of fisheries, aquatic life, and fish culture.

Applied Fisheries Laboratory. The University's Applied Fisheries Laboratory, under the direction of Dr. Lauren R. Donaldson, is the coordinating center for virtually all federally supported research on the effects of radioactivity on marine life.

Bureau of Business Research. Maintained by the University of Washington in the College of Business Administration, a Bureau of Business Research has the responsibility of applying scientific research methods to problems of economics and business in

the state and throughout the Pacific Northwest. This Bureau cooperates with other departments of the University, with the Washington State Planning Council, and with local, state, and national business and professional groups interested in research in business and economic problems. The Bureau issues a monthly journal, *Pacific Northwest Industry,* which contains basic statistical data, bibliography, and timely articles. From time to time the Bureau publishes reports on its researches.

Bureau of Governmental Research and Services. The Political Science Department maintains the Bureau of Governmental Research and Services to give research and consultative services to state and local agencies and to conduct the annual Institute of Government. Other bureaus and institutes in this department include the Bureau of International Relations, the Institute of Public Affairs, the Institute of Inernational Affairs, and the Institute of National Security.

Pack Forest and Lee Field Laboratory. A tract of approximately 2,000 acres located at LaGrande, Washington, in the Rainier National Park area, the Charles Lathrop Pack Forest, is used as an experiment station by the College of Forestry to demonstrate the various methods of scientific forestry.

The Lee Field Laboratory is a tract of 80 acres containing a second-growth stand of approximately 40-year-old timber situated at Maltby. Less than one-half hour by auto from the campus, it is used in connection with laboratory instruction in silviculture and mensuration and for some experimental work.

Institute of Child Development. Established in 1910 as a part of the Department of Psychology, the Institute receives some financial support from the Bailey and Babette Gatzert Foundation for Child Welfare.

The threefold, mutually important purpose of the Institute is as follows:

(a) Providing a clinical training facility for graduate students preparing for professional careers in clinical or child psychology;

(b) Providing clinical and consultation services for agencies and individuals concerned with the adjustment of children; and

(c) Conducting research on basic problems of normal and problem child behavior, and on applied problems involving evaluation of clinical methods and techniques.

Since its inception, over 12,000 children from almost every community in the state have come to the Institute, having been referred by public and private schools, welfare agencies, adoption agencies, juvenile courts, hospitals, physicians, and parents.

The Institute, which is staffed by clinical psychologists and social workers, is under the directorship of Sidney W. Bijou, Ph.D.

Far Eastern and Russian Institute. The Far Eastern and Russian Institute was established at the University of Washington in 1946 to provide additional opportunities for study in a field which continually is growing more important, both economically and culturally, to the Pacific Northwest and the country as a whole.

The Institute is conducting a modern Chinese History Research Project and is sponsoring a Chinese History Research Project located at Columbia University.

A valuable library of books in the Far Eastern and Slavic Languages is being developed. The collection now comprises over 100,000 volumes.

Soviet Press Translations, published bi-weekly by the Institute, has been well received for its value in bringing to Americans information on what is going on in the Soviet press.

The *Soviet Press Translations* contains articles, editorials, reviews, and news items from the Soviet press translated in their entirety. Every effort is made to have the translations conform as closely as possible to the letter and spirit of the original. A unique publication initiated in 1946, the *Translations* include no "free translations, no excerpts, summaries or commentaries.

University Health Center. Housed in a modern building with offices for doctors and nurses, 75 beds, and a diet kitchen, the University Student Health Center's facilities consist of an infirmary and a dispensary.

Military Training Programs. Military training has been given at the University of Washington since 1875 with the exception of a brief period early in the present century. During peacetime the University maintains a Department of Military Science and

Tactics and a Department of Naval Science. A newly organized Air R.O.T.C. curriculum has been added.

Theatres. Two theatres on the campus, operated by the University's School of Drama, have won national recognition for their distinctive style and high standard of performance. The *Showboat Theatre,* on the shore of Lake Union, is constructed to resemble the old-time showboats which used to travel up and down the Mississippi. The theatre proper and stage are in the conventional style. The *Penthouse Theatre,* located on the lower campus, is also distinctive but ultramodern in design. The theatre proper is built in circus style with the center floor, on a level with the audience, serving as the stage. A third theatre, for experimental plays, is also planned.

Plays open to the public are produced regularly at both theatres on a nonprofit basis.

Foundations. A gift from Sigmund Schwabacher and the executor of the will of Abraham Schwabacher established the Bailey and Babette Gatzert Foundation for Child Welfare in 1910. It 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.

Institute of Labor Economics. To provide facilities for the study of questions and problems in the field of Labor Economics and Industrial Relations the Institute of Labor Economics was established. Personnel and equipment of the Institute are available at all times for assisting those who desire aid in the solution of their problems.

Washington Public Opinion Laboratory. This nonprofit scientific institute is operated jointly by the University of Washington and Washington State College. Interested exclusively in scientific accuracy, the laboratory polls public opinion on all issues of civic interest including issues of state, national, and international importance. Dr. Stuart C. Dodd of the University and Dr. Joseph E. Bachelder of the State College are codirectors. The organization is staffed and controlled from the social science departments of the University and the State College.

Its purposes are to find the facts and amplify the voice of the people on current issues and problems, to learn how to predict and guide social behavior, to improve methods of polling, and to advance science and train scientists in social research. Results of polls will be published in bulletins by the University and Washington State College. Information on popular issues will be furnished newspapers and the radio.

THE UNIVERSITY ORGANIZATION

Five institutions compose the state's system of public higher education. They are the University of Washington, 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, dentistry, fisheries, forestry, journalism, law, librarianship, marine engineering, and medicine.

Concurrent authority is held by the University and 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 elementary and 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 semiprofessional schools:

The School of Architecture	The School of Home Economics
The School of Art	The School of Journalism
The School of Drama	The School of Music
The School of Fisheries	The School of Physical Education

General Studies—for students with interdepartmental major

B. *The College of Business Administration*

C. *The College of Education*

D. *The College of Engineering,* which includes the School of Mineral Engineering

E. *The College of Forestry*

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

G. *The School of Law*	J. *The School of Dentistry*
H. *The College of Pharmacy*	K. *The School of Nursing*
I. *The School of Medicine*	L. *The Far Eastern and Russian Institute*

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* (see footnote, p. 75) is applied to work taken in high school; *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.

For further definitions see page 75.

Special Curricula within the Schools. Certain semiprofessional curricula are given for which no special school or college is provided. Such are the curricula in preeducation, prelaw, prelibrarianship, premedicine, pre-social work, food technology; and the curriculum in chemistry in the College of Arts and Sciences.

Reserve Commissions. Under provisions of the National Defense Act, students may attain commissions as reserve officers in the United States Army or in the Naval Reserve by meeting the requirements in military or naval science. This can be done without interference with the student's regular academic work.

The Four-Quarter System. The University is operated on the four-quarter system, each quarter having approximately eleven working weeks.

SECTION I—GENERAL INFORMATION

ADMISSION TO THE UNIVERSITY

It is impossible to guarantee how long the admission regulations here stated will be maintained, since it is necessary to make frequent changes to meet changing conditions. *Prospective students should determine the admission requirements in effect at the time they are ready to apply.* Applicants who come to the University before their credentials have been submitted and approved do so at their own risk.

Who Is Eligible

The University wishes to make certain that all qualified Washington students are assured of admission. The Admissions Board has, therefore, continued a modification of the standard entrance requirements by:

1. Suspending the provision for admission on probation. *Only rare exceptions are made to this regulation. An applicant who wishes reconsideration may petition the Admissions Board for a review of his case.*
2. Extending first preference to legal residents of the State of Washington and the Territory of Alaska, and to sons and daughters of University of Washington alumni.

While most of the divisions of the University of Washington are now able to accept a limited number of qualified out-of-state students, the colleges of Forestry, and Pharmacy, are congested to the extent that they can accommodate only a few high-scholarship students from other states.

The College of Engineering and the School of Architecture make their selection on the basis of good scholarship records.

How to Obtain Information

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

Admission Procedure

1. Before a student may be admitted to the University, he must place on file with the Registrar complete credentials covering all his previous secondary and college education. These records are kept on permanent file by the University and cannot be returned to the student. For admission to the Autumn Quarter, the required credentials should be forwarded after high school graduation and before July 15. *The last day for new students to submit applications with complete credentials for admission in the Autumn Quarter is September 1.* (See Calendar, page 8.) For admission to the other quarters, applications and credentials should be submitted at least thirty days before the opening of the quarter. This applies to *all* new students seeking admission as graduates or undergraduates.

Students seeking admission for the Autumn Quarter may be disappointed if applications and credentials are submitted later than July 15, as those received by that date will have precedence over those received later. *It is imperative that students observe this deadline in order to insure prompt attention to credentials and reply to correspondence.*

2. Before receiving a notice of admission, new out-of-state students must submit a Medical Questionnaire on a form supplied by the Registrar and completed by a Doctor of Medicine at the time of application for admission.

Admission Requirements (Subject to Limitations Stated Above)

1. *All entering freshmen* are required to:
   a. Submit an official application-for-admission blank from an accredited‡ high school (obtainable from any high school principal or from the Registrar) which includes all credits and grades and a statement that the student has completed his high school course with a diploma of graduation. A high school diploma may not be substituted for the official blank.
   b. Meet the minimum unit* admission requirements (16 units, or 15 units exclu-

‡ Accredited high schools in Washington are those accredited by the State Department of Public Instruction; in Alaska, by the Northwest Association of Secondary and Higher Schools; in other states, by the state university of the state or regional accrediting association.

* 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. The maximum allowance toward University entrance for junior high school study is four units.

sive of activity credit in physical education, debate, etc.) with grades certifiable for college entrance and a 2.0 grade-point average.† See chart below. In administering this requirement the following reservations and exceptions are made:

(1) The 16 units cannot include any unit which received a grade lower than the minimum passing grade as defined by the high school itself.
(2) Less than a unit in one foreign language will not be counted.
(3) Students who are unable to meet the specific subject requirements of the college to which they seek entrance may petition the Board of Admissions for permission to enter, with *provisional standing,* provided that they offer at least 3 units in English and 6 additional units in academic fields. A student having an entrance deficiency shall register for it each quarter until it is removed. *Provisional* standing continues until the student has satisfied the entrance requirements of the college in which he is enrolled. *A student in*

† A 2.00 grade point means a "C" average in terms of the standard grading system of the state of Washington. Students in other states who are recommended to their own state universities on a different grading system will find their scholarship average adjusted to our four-point system.

MINIMUM UNIT ADMISSION REQUIREMENTS

(Entrance requirements are stated in terms of units. A unit equals two high school semester credits.)

For other recommendations see statement of college concerned.

College	English	Mathematics	For. Lang.	Lab. Sci.[1]	Soc. Sci.	Other Academ. Subj.[2]	Free Elective
1. Arts and Sciences[3]	3	2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.)	2 of one*	1*	1	0	7
2. Economics and Business.....	3	2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.)	0	0	1 (U.S. Hist. & Civics)	Minimum of 3	7
3. Education‡.....	3	2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.)	‡	1	1	Minimum of 2	7
4. Engineering.....	3	3 (Elem. & Adv. Alg., Plane & Solid Geom.)[5]	0	1 (Chem.)[4] 1 (Phys.)[1a]	0	1	7
5. Forestry.....	3	2½ (Elem. & Adv. Alg. & Plane Geom.)	0	†	0	Minimum of 3½	7
6. Pharmacy.....	3	2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.)	0	†	0	Minimum of 4	7
7. Comprehensive (Admit to any college).....	3	3 (Elem. & Adv. Alg., Plane & Solid Geom.)	2 of one*	1 (Chem.)[4] 1 (Phys.)[1a]	1	0	5

[1] Approved laboratory sciences: biology, botany, chemistry, geology, physics, zoology.
1a The pre-aviation course will be accepted as academic credit in science, but will not be counted as a laboratory science. It may not be substituted for physics in those curricula which specify physics as a part of the entrance requirements.
[2] Typical academic subjects are: English, foreign language, mathematics, science, history, economics. Some nonacademic subjects are: commercial courses, manual training, home economics, band.
[3] Includes also Schools of Art, Architecture, Drama, Fisheries, Home Economics, Journalism, Music, and Physical Education.
[4] The College of Engineering includes the School of Mineral Engineering. A student who is deficient in chemistry will be expected to earn 13 credits in chemistry in his freshman year instead of the usual 9.
[5] Trigonometry, although not required, is strongly recommended.
* Two units of one foreign language and one unit of one laboratory science should be taken in high school. Students who do not take these subjects in high school will be asked to take them in the University during the freshman year, with credit toward graduation.
† Pharmacy recommends one unit of a laboratory science. Forestry recommends one unit each of physics and chemistry.
‡ Students interested in teaching enter College of Arts and Sciences. They may request transfer to the College of Education when they have earned 45 credits in academic subjects with a grade average of 2.2 or better. An entrance deficiency in foreign language may be removed by substituting 15 credits in English literature.

this classification will not be permitted to file an application for a degree. Deficiencies may be made up with university credit if college courses covering the high school material are available; 10 college credits shall be considered the equivalent of one high school unit, except that for foreign languages (a) 15 quarter credits of college work shall be considered the equivalent of 2 units (4 semesters) of high school credit, and (b) no student may receive credit for repetition of work at the same or at a more elementary level, if credit has been granted in the earlier course. This rule shall apply whether the earlier course was taken in high school or in college, and whether, in the latter case, course numbers are duplicated or not. University credits earned by removing a deficiency cannot be used to satisfy group requirements (see page 100). First year algebra and plane geometry are offered by the Division of Adult Education and Extension Services (fee $12 per course) and do not carry college credit. Students deficient in both first-year algebra and plane geometry are seldom admitted to provisional standing.

†(4) A graduate from an *accredited* high school in Washington or Alaska may be admitted on ***probation*** if his grade-point average is below 2.0, provided he meets other requirements for regular admission to freshman standing. The student who is ***admitted on probation*** may continue his attendance at the University at the discretion of the dean of his college but may not (1) be pledged to or initiated into a fraternity or sorority, or engage in those other student activities in which his right to participate is restricted by the regulations of the Committee on Student Welfare; (2) engage in those athletic activities in which his right to participate is restricted by the regulations of the University Athletic Committee. He shall be removed from probation when he has earned a minimum of 12 academic credits with a 2.0 grade average. Provided that if such a student carries less than 12 hours in one quarter, he may not be removed from probation unless he has earned a minimum of 2.0 average for the current quarter, as well as a minimum cumulative average of 2.0 for his total quarters in attendance. A student removed from probation under these provisions shall henceforth be subject to the regular scholarship rules. See page 91.

(5) A graduate from a *nonaccredited* high school in Washington or Alaska, if he has the recommendation of his principal, may petition the Board of Admissions for permission to enter; before granting such permission the Board may require the student to pass certain examinations.

(6) No student may be accepted for admission who would not be officially recommended to the university of his own state. See page 75, item 2.

(7) Students who are ***not graduated from high school*** must pass College Entrance Board Examinations and meet entrance requirements without deficiency. An inquiry addressed to the Educational Testing Service, P.O. Box 592, Princeton, N. J., or P.O. Box 775, Berkeley, California, will bring complete information.

2. *Advanced Undergraduate Standing.* Students who present complete transcripts and letters of honorable dismissal from other colleges of recognized rank will be granted whatever credit is acceptable to the University. No credit will be allowed in the senior year. See Senior Residence Rule, page 87.

   a. The admission of an applicant who has completed a year or more of college work shall be contingent upon the presentation of a minimum 2.0 grade-point average which shall be computed on the basis of his college work only. If the applicant has completed less than a year of college work, his admission shall be contingent upon presentation of a minimum 2.0 grade-point average in college work and the same minimum in high school work.

   b. No advanced credit will be given for work done in institutions whose standing is unknown, except upon examination. For fee, see page 84.

   c. Transfer of credit from institutions accredited for less than four years will not be accepted in excess of the accreditation of the school concerned. Transfer of junior college credit shall apply on University freshman and sophomore years only. A student who has completed a portion of his freshman and/or sophomore years in a four-year college may not transfer junior college credit in excess of

† Suspended until further notice. See page 75.

that necessary to completion of the first two years in the University. In no case shall the transfer of junior college credit to the University exceed 90 quarter hours of credit.
Exception: If a veteran has attended a recognized Armed Forces training school prior to September, 1946, and has then attended a junior college, he shall be allowed credit for such service training and, in addition, shall be allowed up to a maximum of 90 quarter credits from the junior college as stated in section 2. c.

d. No credit shall be granted to a student for courses taken in another collegiate institution while the student is in residence at the University, unless written permission to register for such courses is obtained by the student from the University department giving such instruction in the subject, from his major department, and from the dean of his college. The prescribed written permission shall be effective only if secured prior to such registration. Nothing in this rule shall make mandatory the granting of any credit by the University.

3. *College of Education and School of Law.* See pages 143 and 165.

4. *Graduate Standing.* A bachelor's degree from a college or university of recognized rank is required for admission to the Graduate School. A graduate student should submit official transcripts of all undergraduate and graduate work and should provide himself with a duplicate record for his own use. For details as to admission to the School of Librarianship and the Graduate School of Social Work, see pages 167 and 194. To be recognized as a candidate for a graduate degree a graduate student shall secure the approval of a committee appointed by the dean of the Graduate School. See page 179.

5. *Foreign Students* must satisfy the same general requirements as those from American schools and must demonstrate a satisfactory command of the English language. The official record of Canadian students is the matriculation certificate or university admission certificate of their province. A student who is graduated from a school system which provides for less than 12 years of instruction may be held for additional high school work.

6. *Special Students.* Mature individuals (21 years of age or over) not eligible for admission as regular students may apply to the Board of Admissions for special standing. They must (1) be classified as legal residents of the State of Washington or the Territory of Alaska and (2) submit all available records of previous work in secondary schools and colleges.

   A special student may take such regular courses as the dean of the college may determine. A special student may not participate in student activities, nor shall he be eligible for any degree, but by fulfilling the requirements for admission to the college or department in which he is enrolled, he may become a regular student.

7. *Auditors.* A mature person may register as an auditor in nonlaboratory courses or the lecture parts of laboratory courses by securing the consent of his dean and the instructor of the course and then paying a fee of $12.* He may not participate in class discussion or laboratory work. He may receive credit in audited courses only by enrolling in them as a regular student in a subsequent quarter.

Advanced Credit

1. *By transfer* of credits earned in residence. See page 77.

2. *By transfer* of credits earned in extension courses.
The University accepts such credit only from accredited institutions whose extension departments appear on the membership lists of the National University Extension Association, but none of it may be used in the senior year. It is subject to the same restrictions which apply to the Division of Adult Education and Extension Services of the University of Washington.

3. *By examination:*

   a. Examinations for advanced credit in courses offered by the University may be taken by a currently registered regular student on work done by private study, or on class work for which no credit has been granted by an institution of either

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

secondary or collegiate grade, provided that such examinations may be taken if credit has been granted for work covered after high school graduation in a regularly organized thirteenth and fourteenth year program as authorized by the Washington State Board of Education.

b. No duplication of credit shall be permitted, and no student may take an advanced credit examination for a course in which he has been registered as an auditor or in which he has received a failing grade.
c. The maximum number of credits obtainable by advanced credit examination shall be 30, not more than 15 of which may be obtained in one subject-matter field. All credits obtained by examination shall be counted as extension credits and shall be included in the maximum of 90 quarter credits allowed by extension.
d. After examination for advanced credit no credit shall be granted unless the applicant has earned a minimum of 45 residence credits with a minimum grade-point average of 2.5. In all other cases credit shall be withheld until these requirements are met.
e. Within a given field of study no student shall receive advanced credit in subject matter more elementary than that for which he has previously received credit.
f. No student shall be permitted to repeat any examination for advanced credit.
g. Permission for advanced credit by examination, for which preparation has been made while in residence during the quarter in which the examination is given, shall not be granted for credits in excess of twenty hours minus the number of hours for which the applicant is currently registered. This restriction shall not apply to an applicant who has prepared for examination while not in residence, provided that suspension of the restriction be approved by an instructor responsible for the course in which the examination is to be taken, the executive officer of the department concerned, and the dean of the college or school concerned.
h. During any one quarter no student shall be permitted to take examinations for advanced credit in excess of 15 credit hours.
i. A student who wishes to qualify for advanced credit shall apply to the registrar for a certificate of eligibility. If this certificate is issued, the student shall then present it for signed approval to an instructor responsible for the course in which the examination is to be taken, to the executive officer of the department concerned, and to the dean of the college or school concerned. If such approval is granted the student shall then pay a fee of two dollars per credit to be gained by examination. The department or school shall prepare appropriate tests for advanced credit and transmit them, together with the certificate, to the secretary of the Graduation Committee. The Graduation Committee shall designate one day of each quarter upon which all approved examinations shall be given, and such examinations shall be supervised by this committee or by an agency which it designates. A minimum time of three hours shall be allowed for completion of an examination in any one course. The completed examination papers shall be transmitted to the proper departments for grading. Grade reports shall be sent to the Graduation Committee for recording.

The Division of Adult Education and Extension Services

The Division of Adult Education and Extension Services provides means for persons to earn college credit by attending Saturday or evening classes in Seattle and other cities in the State, or by correspondence study. Such credit is acceptable toward a degree only when all other requirements have been met and after the student has satisfactorily completed one year in residence at the University. No more than 90 extension credits may be counted toward the requirements for the bachelor's degree in any school or college. No more than 10 credits of the total extension credits may be counted in the 45 credits of the senior year. (See Senior Residence Rule, page 87). For the purpose of this rule, all credits secured by examination for advanced standing shall be counted as extension credits and shall be included in the above maximum of 90 credits.

For use of such credit for an advanced degree, see page 78. See Senior Year Residence Rule, page 87.

No resident student may take an extension course without the consent of his dean. This permission, on forms furnished for the purpose, shall be filed with the Department of Extension Classes or the Department of Correspondence Study, whichever is appropriate. Registration in extension courses at University level shall be open only to high school graduates and to persons eighteen years of age or over who are not attending high school.

Registration

(See page 8 for registration dates for each quarter.)

All students (except those in Dental, Medical, and Law Schools, and in the Graduate School of Social Work) *must* have a definite appointment each quarter for obtaining registration books and going through Sections (Administration Building). See page 8 for dates, application deadlines, and means of obtaining appointments.

Before the date of his appointment the student should arrange his schedule of studies with the advice and assistance of his faculty adviser. A regular course consists of 15 or 16 credits.

Registration is complete when fees are paid and the registration book checked through Sections (Administration Building) and turned in before leaving that office.

No person may attend a University course in which he has not been registered as a student or enrolled as an auditor.

A student must have the consent of his dean if he wishes to register for less than 12 or more than 16 credits, or the number called for in the prescribed curriculum, exclusive of required physical education courses and lower division Military and Naval Science courses.

No student shall be registered for, nor receive credit for, more than 20 credits of work exclusive of required physical education activity courses and lower division Military and Naval Science courses.

Work taken in noncredit courses or to remove entrance deficiencies shall count as part of the schedule allowed.

No change of registration involving entrance into a new course shall be permitted after the first seven calendar days following the beginning of instruction.

Aptitude Test

All undergraduate students who have not previously taken the University of Washington Aptitude Test must do so at a time to be announced each quarter. Those entering in Autumn Quarter are expected to take the test before regisration is completed. Test results are made available to advisers who assist students in preparing courses of study and in making vocational plans.

Medical Examinations

Before receiving a notice of admission, new out-of-state students must submit a Medical Questionnaire on a form supplied by the Registrar and completed by a Doctor of Medicine at the time of application for admission. This does not excuse a student from the medical examination required by the University of Washington upon entrance, as described below.

All students, regardless of classification, and previous medical examination elsewhere, entering the University for the first time, all former students who have been discharged from the armed forces of the United States or Canada, and those who have not attended the University within the last calendar year are required to pass a medical examination as a part of their registration requirements. A definite appointment is made at the time of registration. This appointment takes precedence over all others scheduled for that hour. Students failing to appear for the medical examination at the appointed time will be excluded from classes on notice to the Registrar. For a second appointment, to compensate the University for the additional expense thereby necessitated, a special fee of $5 must be paid.

As an additional service to and protection of its students, the University rules provide that all students, resident or nonresident, at any time that it is deemed advisable by the Director of the University Health Service, as a condition precedent to entrance to and/or continuance in the University, must pass a medical examination with reference not only to physical but also to mental diseases or serious nervous disorders. As a part of such examination, contributing evidence from the past history of any case shall be pertinent.

Welcome Week

The week in which instruction for the Autumn Quarter begins is designated as Welcome Week. This program is planned jointly by the University Administration and the Student Body. New students will find an opportunity to meet other students and become familiar with the campus. Attendance is optional. Attendance at the convocation on the first Friday of school is expected.

EXPENSES

FEES FOR RESIDENT STUDENTS[1]

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

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 84 regarding late registration fines.

See page 83 for Summer Quarter Fees

Type of Registration	Tuition Fee	Incidental Fee	Misc. Fees	A.S.U.W. FEE[2]			TOTAL FEES		
				Aut. Qtr.	Win. Qtr.	Spr. Qtr.	Aut. Qtr.	Win. Qtr.	Spr. Qtr.
Full-time Students (Undergraduate and Graduate) except Medical, Dental, and Law Schools	$25	$12.50	*	$8.50	$8.50	$8.50	$46.00	$46.00	$46.00
Medical School	100	12.50		8.50	8.50	8.50	121.00	121.00	121.00
Dental School	100	12.50	5.50[3]	8.50	8.50	8.50	126.50	126.50	126.50
Law School	25	12.50	‡10.00	8.50	8.50	8.50	56.00	56.00	56.00
¶Auditors	12			#	#	#	12.00	12.00	12.00
Ex-service personnel of World War I and World War II (Chapter 46, Laws 1947)**		12.50		8.50	8.50	8.50	21.00	21.00	21.00
Part time. (Max. 6 credit hrs. excl. of R.O.T.C.)***	25	2.50		#	#	#	27.50	27.50	27.50
†Persons registered for thesis only		12.50		#	#	#	12.50	12.50	12.50
†Undergraduate nurses in approved hospital	5			#	#	#	5.00	5.00	5.00
†Graduate nurses in approved hospital	25			#	#	#	25.00	25.00	25.00

[1] A *resident* is one who has been domiciled in this state or the Territory of Alaska for a period of one year immediately 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 classified as a *nonresident* 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 nonresident office (203 Condon Hall) for change of classification to resident status.

[2] Athletic admissions ticket, $2.50, optional for A.S.U.W. members; good for entire year but must be validated each quarter at time of payment of fees.

[3] Laboratory case rental, $2.50, and dental engine rental, $3.50.

* $25 uniform deposit for those who register for military science. Refund upon return of all U. S. Army issued property.

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

¶ Special audit fee in the Nursery School for both residents and nonresidents is $15.

‡ Law library fee.

** See exemptions paragraph, page 83, to determine eligibility.

*** Load-hour equivalents of noncredit courses and/or audit courses must be counted in the 6 credits.

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.

NOTE: The following courses require the payment of a fee in addition to tuition: *cadet teaching*, $1 per credit hour; *botany field trip*, $5; *Pack Forest fee*, $10; *ward clinic fee*, $10; *Nursery School* 117 and 118, $5 (for lunches).

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

EXPENSES

FEES FOR NONRESIDENT STUDENTS[1]

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

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 84 regarding late registration fines.

See page 83 for Summer Quarter Fees

Type of Registration	Tuition Fee	Incidental Fee	Misc. Fees	A.S.U.W. FEE[2]			TOTAL FEES		
				Aut. Qtr.	Win. Qtr.	Spr. Qtr.	Aut. Qtr.	Win. Qtr.	Spr. Qtr.
Full-time Students (Undergraduate and Graduate) except Medical, Dental, and Law Schools	$75	$12.50	*	$8.50	$8.50	$8.50	$96.00	$96.00	$96.00
Medical School	165	12.50		8.50	8.50	8.50	186.00	186.00	186.00
Dental School	165	12.50	5.50[3]	8.50	8.50	8.50	191.50	191.50	191.50
Law School	75	12.50	‡10.00	8.50	8.50	8.50	106.00	106.00	106.00
¶Auditors	12			#	#	#	12.00	12.00	12.00
Ex-service personnel of World War I and World War II (Chapter 46, Laws 1947)**	37.50	12.50		8.50	8.50	8.50	58.50	58.50	58.50
Part time. (Max. 6 credit hrs. excl. of R.O.T.C.)***	75	2.50		#	#	#	77.50	77.50	77.50
†Persons registered for thesis only		12.50		#	#	#	12.50	12.50	12.50
†Undergraduate nurses in approved hospital	5			#	#	#	5.00	5.00	5.00
†Graduate nurses in approved hospital	25			#	#	#	25.00	25.00	25.00

[1] A *nonresident student* is one who has not been domiciled in this state or the Territory of Alaska for a period of one year immediately prior to registration.

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

(a) The legal words *domicile* and *residence* are not equivalent terms; domicile requires more than mere residence.

(b) No one can acquire domicile by residence in the state of Washington when such residence is merely for the purpose of attending the University.

(c) The domicile of a minor is normally that of his parents or, in the case of their death, that of his legally appointed guardian. The domicile of a minor ordinarily will change with that of his parents.

[2] Athletic admissions ticket, $2.50, optional for A.S.U.W. members; good for entire year but must be validated each quarter at time of payment of fees.

[3] Laboratory case rental, $2.50, and dental engine rental, $3.50.

* $25 uniform deposit for those who register for military science. Refund upon return of all U. S. Army issued property.

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

¶ Special audit fee in the Nursery School for both residents and nonresidents is $15.

‡ Law library fee.

** See exemptions paragraph, page 83, to determine eligibility.

*** Load-hour equivalents of noncredit courses and/or audit courses must be counted in the 6 credits.

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.

NOTE: The following courses require the payment of a fee in addition to tuition: *cadet teaching*, $1 per credit hour; *botany field trip*, $5; *Pack Forest fee*, $10; *ward clinic fee*, $10; *Nursery School* 117 and 118, $5 (for lunches).

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

Payment of Fees

All fees are payable at the time of registration

Enrollment under G. I. Program. An individual desiring to enroll at the University under Public Law 16 or 346 presents his Veterans Administration certificate of eligibility to the Veterans' Division, Comptroller's Office, at the time of registration in lieu of payment of fees and other charges. (See page 96 relating to establishment of G. I. eligibility.) A student so enrolled is subject to payment of any charges not covered under the G. I. program.

All fees are payable by the student at time of registration if he is unable to present his certificate of eligibility. Payment will be refunded when full eligibility is established as of the start of the quarter.

Exemptions

Graduate members of the University staff are exempt from the tuition and incidental fees; A.S.U.W. fee is optional.

All honorably discharged service men or women who served in the military or naval services of the United States during World War I and those who served in World War II at any time after the sixth day of December, 1941, and prior to the first day of January, 1947, and who are no longer entitled to vocational rehabilitation under Public Law 16 or to education and training under Public Law 346, and who are classified as residents are exempt from the tuition fee. Under this exemption a reduction of one-half of the nonresident tuition fee is granted nonresident students who have completed their entitlement at the University of Washington. This exemption also applies to U.S. citizens who were in the military or naval services of governments associated with the United States during said wars. (Not granted to summer quarter students.)

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 calendar days; one-half of said fees will be refunded if withdrawal is made during the first thirty calendar days, except for R.O.T.C. uniform deposit, the unexpended portion of which will be refunded upon approval of the Military Science Department. Students registered for chemistry or pharmacy laboratory courses must secure a check-out clearance from the stockroom custodian. This clearance must be presented at the Registrar's office when withdrawal is made, as no withdrawal will be honored until this requirement has been met. At least ten days must elapse between payment and refund of fees. Unless specific instructions are received by the Comptroller's office regarding the fees refunded, all properly authorized refunds will be made to the student involved in the registration.

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

Total fees for regular enrollment in the Summer Quarter, either full or part time, resident or nonresident, for enrollment as a transient student, a special student, or an auditor in the summer are:

Full quarter	$47.50*
First term	32.50*
Second term	32.50*
Addition of second term	15.00

(After first term registration is completed)

* Includes A.S.U.W. fee of $2.50.

Law students have an additional Library Fee of $10.00.

There are special fees which may be found by consulting the Summer Quarter Bulletin for:

(a) Nurses in residence at approved hospitals.
(b) For children attending the Nursery School.
(c) Persons employed in social agencies certified by The Graduate School of Social Work.
(d) Persons registered for thesis only.
(e) Persons registered for individual and group instruction in applied music.
(f) Various summer conferences and institutes.

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 two dollars ($2) 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.

Athletic Admissions Fee. A ticket which admits to all athletic events for the entire year is optional to A.S.U.W. members only. The cost is $2.50 ($2.00 plus 50c federal and city tax).

Breakage Tickets Deposit. In certain laboratory courses a breakage ticket is required to pay for laboratory supplies and breakage of equipment. Tickets may be purchased at the Comptroller's office for three dollars ($3).

Microscope Rental Fee. A microscope rental fee of seven dollars ($7.00) per quarter must be paid by those students in the Schools of Medicine and Dentistry who rent microscopes.

Special Examination Fee. A fee of one dollar ($1) is charged for each examination outside the regular schedule. This also applies to the examination for foreign language reading required of certain students. In the case of examination for *advanced credits,* a fee of two dollars ($2) per credit hour is charged. (See page 78.)

A fee of two dollars and fifty cents ($2.50), payable to the Division of Adult Education and Extension Services, is charged for removal of incompletes *in absentia.*

Practice Rooms. Piano practice room*: one hour a day each quarter, $3; two hours a day, $5; three hours a day, $6. Organ practice*: one hour a day each quarter, $6, two hours a day, $10; three hours a day, $12.

Pavilion Locker Fee (Men). A fee of one dollar and fifty cents ($1.50) per quarter during the regular academic year, and seventy-five cents (75c) 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.

General Locker Fee. Lockers for wraps and books in the various classroom buildings may be obtained at a rental of seventy-five cents (75c) per quarter from the Buildings and Grounds Department.

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

* Available only to students registered in the School of Music.

Graduation Fee. Each graduate receiving a baccalaureate degree is required to pay a graduation fee of ten dollars ($10). Each graduate receiving an advanced degree is required to pay a graduation fee of five dollars ($5). The fee for a three-year secondary certificate or for an elementary certificate is two dollars and fifty cents ($2.50). The fee for other professional certificates is one dollar ($1). The three-year secondary certificate 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 certificate.

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 doctorate contributes twenty-five dollars ($25) 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 (50c) is charged for each additional transcript.

Medical Examination and X-Ray Fees. Students who *fail to keep* their medical or X-ray appointments must pay a fee of five dollars ($5) for a make-up medical examination and one dollar ($1) for an X-ray.

X-Ray Plates. Applicants for a secondary certificate may secure from the University Health Center an X-ray plate to accompany health certificate. Fee, five dollars ($5).

Bureau of Teacher's Service and Placement. 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 earned after high school graduation and based on credentials from unaccredited schools offering specialized instruction, or from schools of unknown standing, 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 is five dollars ($5). Students seeking such certification must secure the proper forms in the Registrar's office.

Military Uniform. See page 164 for details.

Nursery School Fee. The fee for children in the Nursery School is $45 per child per quarter for the morning program, 9 a.m. to 11:30 a.m.; $60 per child per quarter for the complete program (including hot dinner), 9 a.m. to 12:30 p.m.

Minimum Basic Expenses Living Costs ÷ Income

Board and room expense varies according to the type of accommodation desired. (See section on Housing, page 94.)

Meal Service is available on an *a la carte* and meal ticket basis in the University dining halls. Breakfast, morning coffee, lunch, afternoon snacks, and dinner are served at reasonable prices. Meal and scrip tickets may be purchased from the University cashier.

Groups wishing to hold special meetings at meal time may be served by making reservations through the catering department in the University Commons.

SCHOLASTIC REGULATIONS

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

I. Requirements for Graduation

MILITARY SCIENCE REQUIREMENTS

1. All male students who entered as freshmen directly from high school after Spring Quarter 1948 will be held for the Military Science requirement of six quarters.

2. All male underclass transfers, beginning with Summer Quarter 1949, will be held for the Military Science requirement. It is understood, however, that underclassmen entering with advanced standing will be held for only as many quarters of Military

Science as they have quarters to complete from the time of entrance to become juniors in credits (90 academic quarter credits).

3. No student in residence at the University of Washington prior to Summer Quarter 1948 shall be held for any part of the Military Science requirement.

Subject to the foregoing limitations, two years of Military Science are required of all male undergraduate students except the following:

a. Those who are twenty-three years of age or over at the time of original entry into the University.

b. Those entering as juniors or seniors.

c. Special students.

d. Those registered for 6 credits or less.

e. Those who are not citizens of the United States.

f. Those who are active members in the Army, Navy, Air Force, Coast Guard, or Marine Corps of the United States, or commissioned officers of the National Guard, or reserve officers of the military or naval forces of the United States.

g. Students who claim credit for Military Science taken elsewhere than at the University. The student must make his claim when he registers in the department and all such credit allowed must be recorded by the Military Registration Secretary and the evidence must be filed in the student's permanent record file in the Military Registration Office. Exemption from one year of the Military Science requirement will be granted to honorably discharged men who have served not less than six months, but who have served less than one year in the Army, Navy, Marine Corps, Air Force, or Coast Guard. Complete exemption from the Military Science requirement will be granted (1) to honorably discharged men who have served one year or more in the Army, Navy, Air Force, Marine Corps, or Coast Guard and (2) to those who hold a Certificate of Disability Discharge. The Professor of Military Science and Tactics shall evaluate the credits of all other claimants.

h. Those who, because of physical condition, are exempted by the University Health Officer.

i. Those whose petitions for exemptions on other grounds than those listed above, after being processed by the Office of Student Affairs, are approved by the Dean of the College concerned after consultation with the Professor of Military Science and Tactics.

4. 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.

5. The Military Science requirement shall normally be satisfied in the first six quarters of residence.

6. 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.

Physical Education Requirements for Men

1. Six quarters of physical education activity* courses are required of all male students except those who are twenty-three years of age or over at the time of original entrance into a college or university, those entering with junior or senior standing, those registered for 6 credits or less, or special students.

a. This requirement must be completed during the first six quarters of University residence.

b. Students who pass the medical examination are to register for one quarter in Basic Physical Education (Physical Education 4) and one quarter Swimming (Physical Education 19). For the remaining four quarters they may elect any activity with the provision that they participate in one group activity and one individual or carry-over activity. Freshman or varsity sports may be substituted for these courses.

c. Naval Science Physical Education requirements are the same as the University's

* See footnote next page.

requirements except that naval science students are required to pass the 1st Class Swimmer's Test once each year.

2. A two-credit academic course in personal health (Physical Education 75) is required of all male students who have not satisfied this requirement in an accredited university or college.

a. *All* men for whom the Health Education course is prescribed shall be required to complete it within the first three quarters of residence.

b. A student may be exempted from the health education course by passing a health knowledge test given the first week of each quarter.

Physical Education Requirements for Women

1. Six quarters of physical education activity* courses are required of all women students except those who are twenty-three years of age or over at the time of original entrance into a college or university, those entering with junior or senior standing, those registered for 6 credits or less, or special students. This requirement must be completed during the first six quarters of University residence.

2. A 2-credit academic course in health education (Physical Education 10) is required of all entering women but shall be waived for any woman student who entered the University before July, 1944, and who had not fulfilled this requirement before that date. It shall also be waived for all women transfer students beyond freshman standing. For women transfer students with less than a normal year's credit (45 academic quarter credits), the question of imposing this requirement shall be referred to the Department of Physical Education. *All* women for whom the health education course is prescribed shall be required to complete it within the first three quarters of residence.

Senior Year Residence

Senior standing is attained when 135 credits and the required credits in Military or Naval Science and in physical education have been earned. Of the work of the senior year (45 credits) at least 35 credits shall be earned in a minimum of three quarters in residence. The remaining 10 credits shall be earned either in residence or through the University of Washington Division of Adult Education and Extension Services.

Financial Obligations

In determining the fitness of a candidate for a degree, his attitude toward his financial obligations shall be taken into consideration.

The Comptroller and Registrar are instructed to attach credits and withhold delivery of a student's diploma pending final payment of financial obligations to the University. Participation in Commencement exercises is in no way affected by this rule and certification of graduation will be furnished where the need exists.

Thesis

If a thesis is required for the degree sought, the candidate must deposit two typewritten copies thereof in the Library at least three 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" are available at the thesis desk in the Library.

The College of Engineering has the further requirement that the candidate file a third copy with the head of his department.

Grade Points and Credits

To be eligible for graduation with the bachelor's degree a student shall satisfy all other specific requirements and shall offer a minimum of 180 academic credits in which he has earned at least a 2.0 grade-point average. Grades earned at other institutions may not be used to raise the grade-point average at the University of Washington.

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* Special programs adapted to the individual's need will be devised by the Executive Officer of the Physical Education Department for those students who are reported by the University Health Officer as unfitted to join regular classes. A student may not be exempted from this requirement unless the Executive Officer of the Physical Education Department and the University Health Officer join in recommending such exemption to the Dean of the College in which the student is registered. The Dean of the College will then recommend to the Graduation Committee that the exemption be allowed.

A candidate for the bachelor's degree whose grade average is below 2.0 and who has more than 180 academic credits on his permanent record may attain the minimum required grade average by presenting for graduation the 180 credits in which he received his highest grades, plus the required credits in physical education activity and Military or Naval Science. In such a case the procedure shall be as follows: the student, with the advice of his major department and college dean, shall notify the Committee on Graduation of the courses he intends to present for graduation. He shall accomplish this by filing with the Registrar a written statement, signed by the major department and the college dean, listing the registered hours he wishes not counted toward his degree. If the courses to be counted produce a 2.0 average or above and meet all other college and University requirements, the student shall be eligible for graduation.

For the purpose of computing grade-point averages and the total academic credits for graduation, the first two years of Army and Navy subjects shall be excluded.

In the Colleges of Arts and Sciences, Education, Pharmacy, and Business Administration (except for students in the Supply Corps) no more than 18 quarter credits in advanced Army and Navy subjects may be applied towards graduation.

In the Colleges of Engineering and Forestry no more than 9 quarter credits in advanced Army and Navy subjects may be applied to satisfy unrestricted elective credits appearing in a curriculum.

Any college may make additional requirements for graduation.

See *Senior Scholarship rule for last quarter in residence* (8), under "General Scholarship Rules," page 91.

For rule regarding repetition of courses in which grades of "D" or "E" were obtained, see "Repeating of Course," page 90.

Upper-Division Credits

A minimum of 60 credits in upper-division courses, exclusive of those earned in Army or Navy R.O.T.C. subjects, shall be an all-University requirement for graduation.

Application for Degree

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 University Senate and, if approved by the Senate, 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 present. No student shall receive a bachelor's degree, teaching certificate, or other certificate unless his name appears upon the list approved by the Senate during the quarter in which the degree or certificate is to be granted.

NOTE: A student with *provisional standing* is not permitted to file an application for a degree. See page 76.

Details concerning issuance of teaching certificates may be obtained from the College of Education. See page 143.

Degrees—Additional Regulations

1. *Degrees—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 be graduated. All responsibility for fulfilling the requirements for graduation rests upon the student concerned.

2. *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 shall have been occupied in the work for the two degrees, and the total number of academic credits shall have reached a minimum of 225.

3. *A Second Bachelor's Degree.* A second bachelor's degree may be granted, but a minimum of three additional quarters in residence shall have been occupied in the

work for this second degree. The total number of additional credits shall have reached a minimum of 45, and the number of additional grade points, a minimum of 90. Not more than 10 extension credits (University of Washington only) and no credits gained by advanced credit examinations shall constitute any part of the added program.

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

5. *Commencement Exercises.* Formal Commencement exercises shall be held only at the close of the spring quarter, but diplomas shall be issued at the end of each quarter to such candidates as have completed requirements at that time.

II. Scholarship Regulations

Grading System

1. The following is the system of grades (except for the schools of Medicine and Dentistry) and their value in grade points:

Grade	*Grade Points*	*Grade*	*Grade Points*
A—Honor	4	D—Poor (low pass)	1
B—Good	3	E—Failed	0
C—Medium	2		

Passing grades for advanced degrees are "A," "B," and "C," with a "B" average required.

The grade of E shall be final. A student receiving the grade of E in a course may obtain credit for it only by re-registering for the course and repeating it.

2. *Other symbols* shown in the schedule below are used by instructors when appropriate; they are not used in computing grade-point averages.

I—Incomplete. This grade is given only in case the student has been in attendance and has done satisfactory work to a time within two weeks of the end of the quarter. Except in the case of one-term summer quarter courses, the dean of the college may extend the two weeks' limit to three weeks.

A student must convert an Incomplete into a passing grade within his next quarter of residence. Otherwise, he shall re-register for the course. This rule may be waived upon recommendation of the dean of the college concerned under circumstances in which it interferes with efficient administration of the grading system.

N—Satisfactory without grade, used in hyphenated courses in which the grade is dependent upon the work of a final quarter; it indicates that the work has been completed to the date at which the N is given, but carries with it no credit or grade until the entire course is completed.

S—Passing grade for courses numbered 200 or above; it may be used as a final grade.

W—Withdrawal; this grade must be given if the withdrawal is official and within the first thirty calendar days of the quarter; after the first thirty calendar days this grade will be given if the student's work is satisfactory, otherwise an "E" must be given.

UW—Unofficial withdrawal; this grade is given if the student's standing has been "C" or above; if his standing has been less than "C" an "E" must be given.

3. The following is the system of grades used by the Schools of Medicine and Dentistry.

P—Satisfactory, passed.

F—Unsatisfactory, failure.

N—Continued course, grade to be given later at end of entire course.

I—Incomplete due to illness or other legitimate factor.

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

1. 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 substitute course, shall be the one counted in computing the average required for graduation. A substituted course shall be one in the same department as the original course, and shall be closely related to the subject matter thereof. 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.

2. If a transfer student repeats a course taken at another college, the University of Washington credit shall be honored and the transfer credit canceled.

3. If a course has been repeated with grades of C or better in two or more colleges, the University shall give precedence to credit earned at an "A" or "B" college*. If two or more of the colleges at which the course has been repeated were "A" or "B" colleges, the University shall honor the credit of the "A" or "B" college last attended by the student. *A grade of D or E received at the University may be superseded only by a grade received at an "A" college.*

Final Examinations

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

2. An examination schedule of two- or three-hour examination periods shall be provided by the Schedule and Registration Committee. This schedule shall not replace any special schedule such as that of the Law School.

3. The regular class exercises shall end at four o'clock on the fourth, fifth, or sixth day before the end of the quarter. The Schedule and Registration Committee shall determine whether three, four, or five days are necessary for scheduling the final examinations and shall publish the examination schedule in or before the seventh week of each quarter.

4. The scheduled examination period shall be the last meeting of the class. If, during the regular class periods, an instructor gives a test or tests which he wishes to credit as the final examination, he shall meet his class during the regularly scheduled examination time, shall take the roll, and shall hold the class for the full examination period.

5. 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 if his work in that course has been satisfactory until the time of his absence. He may remove this Incomplete in the manner provided for removing Incomplete grades. In all other cases of absence from the scheduled final examination a student shall be given a grade of "E," except that if his standing in the course has been "C" or above until he ceased to attend class, he may be given the grade of "UW."

6. Special early examinations, given to individual students or groups of students as substitutes for final examinations, are prohibited. *There are no early examinations for graduating seniors.*

7. Each instructor shall be responsible for the supervision of his tests and examinations in accordance with the rules of good conduct and fairness.

Cheating

1. Cheating consists of conduct designed to secure favorable grades for one or more students in any University course given for credit through violation of established examination or other accrediting procedures, regardless of whether any paper or other exercise has actually been submitted by, or on behalf of, the intended beneficiary.

* An "A" college is one with an organized graduate school and whose transcripts are given full value through five or more years of college study. Graduate work accepted for advanced degrees subject only to limitations on transfer credits allowed on advanced degrees, and to departmental standards. A "B" college is one whose transcripts of record are given full value through four years of college study. Bachelor's degrees accepted for admission to graduate study.

2. A student who is guilty of such conduct, either as intended beneficiary or otherwise, may be formally cited before the University Committee on Student Discipline for such action as the Committee may direct. So far as academic grades are concerned, however, the instructor in charge of the course concerned remains the sole judge of the consequences.

3. To cite a student for cheating, the instructor or fellow student shall report the student to the Registrar, who shall inform the Office of Student Affairs, the dean of the college concerned, and the chairman of the Student Discipline Committee of the facts of the case. The offender shall automatically be placed on disciplinary probation pending action of the Student Discipline Committee.

Tutoring

Students seeking the services of a tutor may obtain assistance in the Student Employment Office, in the Office of Student Affairs, or in the office of the proper major department.

1. No person shall tutor for compensation in a course with which he has any connection as part of the teaching staff.

2. The tutor shall secure the approval of the head of the department for all tutoring for compensation, 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.

General Scholarship Rules

1. Three times as many grade points as credits must be earned on the program for an advanced degree.

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

3. 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 shall take appropriate action which may be to place him on probation or to require him to withdraw from the college. Satisfactory progress shall normally be interpreted as a cumulative grade-point average of 1.8 for the freshman year, and 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.

4. When a student has been placed on *probation* because of low scholarship, the dean of the college concerned shall have complete authority over his academic and activity program. The dean of the college concerned shall 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.

5. *Reinstatement* of a student disqualified under the provisions of paragraph 4 above shall be allowed only by the dean of the college concerned. 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.

6. In the administration of these rules, required physical education activity courses shall be on the same basis as the academic subjects except as provided for in (8).

7. For the purpose of computing grade-point averages for high and low scholarship and for graduation, the first two years of Army and Navy subjects shall be excluded.

8. Colleges and schools may require higher standards of scholarship than those above stated and may exclude courses carrying plus credit from computation of grade-point averages. See announcement of the college or school concerned, pages 99-195.

* Faculty members may obtain forms at the Registrar's office. When proper signatures have been obtained by the tutor, the form should be filed in the office of the dean of the college concerned.

9. *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 in 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.

III. Dismissal, Withdrawal, and Absence 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.

Withdrawal

Withdrawal from the University is voluntary severance by a student of his connection with the University. It must be approved by the Office of Student Affairs.

Withdrawal from a course is voluntary severance by a student of his connection with the course. The withdrawal is *official* if it is approved by the dean of the college and by the instructor of the course concerned, and if the Registrar's office is properly informed by the student who must file a Change of Registration Form at Sections (Administration Building; otherwise it is *unofficial.* A student may withdraw from a course at any time up to the end of a quarter provided that he does so before the scheduled final examination in the course. See page 89 for the grades which may be given.

Note: A student is not permitted to have a withdrawal from required courses in freshman English, Military Science, physical education activities, or Physical Education 10.

Leaves of Absence

The dean may grant permission to be absent from classes to a student who foresees that such absence will be necessary, except that the Office of Student Affairs shall issue such permits to students absent because of recognized student activities.

A student absent because of sickness or for personal reasons, who has not made previous arrangements for excuse, shall explain the cause of his absence to his instructor. His instructor shall decide whether this verbal explanation constitutes a legitimate excuse.

IV. Student Activities

Student activities shall be defined, interpreted, and governed by the Committee on Student Welfare.

General Eligibility Rules

In order to participate in any student activity or to seek election to any student office classified as a major activity, a student shall comply with the rules and regulations of the committee governing the activity. For students who wish to participate in intercollegiate athletics, this shall be the University Athletic Committee; for students who wish to participate in student affairs, this shall be the Committee on Student Welfare. (Student campus organizations come under the supervision of the Committee on Student Organizations.)

Students are responsible for acting in accordance with the specific rules of these committees, information regarding which may be secured from the Office of Student Affairs.

To be eligible to participate in any major activity a student shall:

(a) have earned a grade-point average of 2.0 in his last quarter in college attendance and over his entire college record;
(b) be registered as a full-time student, i.e., be enrolled for a minimum of 7 credits;
(c) have complied with any additional requirements of the particular activity;

(d) not have been declared ineligible by the dean of his college on the grounds that participation in the activity is detrimental to his scholarship.

To be eligible for any minor activity, a student shall not have been declared ineligible by the dean of his college on the grounds that participation in the activity is detrimental to his scholarship.

Meetings, Assemblies, and Speakers

1. The buildings and campus of the University shall be primarily devoted to education; they may also be used for cultural and recreational purposes incidental to the work of the University.
2. The University buildings and grounds shall not be available for commercial or other outside uses except that assembly halls may be used for graduation exercises and other special assemblages of the public schools by arrangement with the President's office.
3. Meetings of student organizations upon the campus may be permitted for educational, cultural, and recreational purposes 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 to the Office of Student Affairs in accordance with the *Code for Student Organizations*. Application shall be made at the beginning of each school year except that such student groups organized during the school year shall make application before arranging for any meeting on the campus.
5. Arrangements and programs for meetings held under the sponsorship of a college or department of the University and open to the public shall first be 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. If the application is granted, any necessary arrangements for rooms should be made through the Registrar's office. Special lectures should be held in the afternoon in order not to disrupt regular morning classes.
6. Only all-University functions for which classes are generally dismissed may be designated as assemblies.

Student Publications

1. Only those publications approved by a committee appointed by the President of the University may use the good will of the University in soliciting advertising.
2. Permission to issue student publications shall be obtained from the President's office.
3. The editor of any student publication shall be held responsible for all matter which appears in that publication. A correspondent of any other publication shall be held similarly responsible for all items contributed by him to that publication.
4. No edition of *The University of Washington Daily* by special editors shall be permitted except by express permission of the Publications Committee of the Board of Control.

STUDENT WELFARE

The Office of High School Student Relations and Orientation

The Office of High School Student Relations and Orientation has a twofold purpose. The first is to offer detailed information to prospective college students who are in high school; the second is to assist the colleges, schools, and departments of the University in developing a co-ordinated orientation program for students already on the campus. Pre-college guidance is offered through detailed bulletins, lectures, interviews, audio-visual materials, and personal, independent contacts by interested individuals.

The Office of Student Affairs

The Office of Student Affairs is concerned with the general welfare of the students of the University and welcomes 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 individual problems. This office, which works closely with the advisory system of the colleges and schools of the University, is in a position not only to counsel students personally, but to direct them to faculty

advisers, the facilities of the Counseling Center, and other sources of information and assistance. Obstacles to successful work in college may often be removed through their friendly advice and the available professional services. The Office will be glad to discuss with students any problems concerning the military services.

Participation in social and special-interest groups is an educational experience available to every college student. Faculty members and the Student Affairs staff provide counsel and assistance to a wide variety of organized groups. Students are encouraged to call on Student Affairs counselors for information and assistance in the area of out-of-class group experience.

A large number of religious activity groups are maintained off-campus by the various religious denominations and foundations. These groups share in the total student activity program of the University. Students may contact the church of their choice or the Office of Student Affairs for further information.

Counseling Center

The Counseling Center provides students with assistance in their immediate school problems, vocational counsel, and counsel in regard to personal problems. The Center is interested in seeing students who wish to assure themselves they have selected an appropriate vocational goal, who are uncertain about a college major, who feel they are unable to function at their optimum level, or who feel uncomfortable with themselves and wish help in some personal or social problem. The method of providing this assistance involves interviews with members of the staff and psychological tests when indicated. The center is not a substitute but a supplement to the faculty adviser. There is a five-dollar fee to nonveteran students for testing services.

The Bureau of Testing

The Bureau of Testing provides testing services to the Counseling Center for individual students and also provides services to the several departments and colleges in test and measurement research, test construction, test administration, and test evaluation.

Placement

Part-time work for both men and women may be obtained through the University Placement Office at 317 Clark Hall. Part-time off campus jobs include office work, clerking, restaurant, manual labor, entertainment, odd jobs, and board and room.

Applications for part-time work on the campus may be made at the Comptroller's Office, Administration Building, and at the University Placement Office, 317 Clark Hall. Application by University graduates for full-time off-campus work may be made at 317 Clark Hall.

For further information write University Placement Office, 317 Clark Hall, University of Washington.

Housing — to come

The University offers a variety of housing accommodations for men, women, and couples. Attractive residence halls on the campus for women students are staffed by competent counselors, dieticians, and a resident graduate nurse. Temporary dormitories on the campus offer rooms for single men (veterans only). Residence in the halls or dormitories is arranged on the basis of the school quarter. A limited number of accommodations for the families of married veteran students are also available.

Rooms, room and board, housekeeping rooms, and a few apartments are listed by the Housing Service, 302 Clark Hall. Complete information is available on group living accommodations; the student cooperatives, independent organized houses, religious organizations, and fraternities and sororities. Residence in the last two mentioned awaits invitation to membership but reservations in all other group houses are made by application to the group, either directly or through the Housing Service.

Approval of living accommodations for students is maintained through limited inspection by the Housing Service of the Office of Student Affairs and the University Health Center. Bulletins giving detailed information on the nature and cost of accommodations of every type will be mailed upon request.

Women students under twenty-one years of age not living in their own homes, with immediate relatives, in nurses' residences, or in homes where they are earning their board and room, are required to live in some type of organized group house, i.e., sorority houses, or independent organized houses approved by the University. If circumstances warrant, exceptions may be made by the Office of Student Affairs 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.

University Health Center

The University maintains a health service which functions primarily in guarding against infectious diseases and incipient ill health due to remediable causes. The work is carried on in two main divisions, viz., a dispensary and an 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 physicians, nurses, and laboratory technicians, all on full time, constitutes 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 for a period of one week each quarter free of charge; this includes the attendance of a physician, nursing, and medicines. 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.

Services for Foreign Students

The Adviser to Foreign Students offers guidance on all non-academic problems to students from other lands. Questions regarding immigration regulations, housing, social integration, personal problems, finances, minimum course requirements, employment, and home hospitality should be referred to this counselor in the Office of Student Affairs. Inquiries concerning admissions are taken directly to the Admissions Office; those regarding Foreign Exchange Scholarships are sent directly to the Executive Secretary, Foreign Exchange Scholarship Committee, 204 Smith Hall; and accepted foreign students are sent by the Admissions Office to the English Department, 115 Parrington Hall, to determine need for special instruction in English.

New students from other lands are asked to take part in the Orientation Program for New International Students, September 23 through 27, 1949, and should report to the Adviser to Foreign Students, Office of Student Affairs, by 9:00 a.m. on Tuesday, September 23, 1949.

Note: Any foreign student traveling to Canada while in attendance at the University of Washington must be sure to have in his possession, in addition to other credentials, a statement from the Registrar that he is currently registered at the University. This will assure him clearance through immigration when he attempts to return to the United States.

Information for World War II Veterans

World War I Veterans see page 83

Admission. The University welcomes veterans under the G. I. Bill and the Vocational Rehabilitation Act, provided they can meet the University of Washington entrance requirements. (See pages 75-80.) Students who are not high school graduates should make every effort to secure diplomas for entrance or later use. It must be borne in mind that many professional degrees, certificates, and the like presuppose possession of a high school diploma. Certain students who are not high school graduates may be able to enter under the "special student" category. (See Sec. 6, page 78.) Equivalency certificates and/or General Educational Development tests may be submitted for consideration by veterans who were in the armed services prior to V-J Day. Students entering the armed services subsequent to V-J Day are required to submit full high school records. Nongraduates of high schools, now in the armed services, should consult their educational officers regarding the possibility of completing high school requirements through the United States Armed Forces Institute and through approved extension divisions of accredited universities.

Counselors, in the Office of Student Affairs, will be glad to discuss with any veteran his problems concerning admission.

Receiving Government Aid. All applications for, and questions about, the G. I. Bill should be addressed to a Veterans Administration Regional Office, preferably the Seattle office if the veteran wishes to attend the University of Washington. If he is eligible, the Veterans Administration will issue him a Certificate of Eligibility, which should be filed in the Veterans Division of the Comptroller's office during registration in lieu of payment of fees. A student so enrolled is subject to payment of any charges not covered under the G. I. program. All fees are payable by the student at time of registration if he is unable to present his certificate of eligibility. Payment will be refunded when full eligibility is established as of the start of the quarter. A credit card will then be issued when registration is completed entitling the veteran to books and supplies needed for his course.

Subsistence payments are made direct to the veteran at the end of each month while he is in school.

Credit for Armed Service Training Courses. The American Council on Education has provided colleges and universities of the United States with recommended values for completed armed services training courses offered on college campuses as well as at the Army and Navy camps. In accordance with these recommendations, such study, if entered before September, 1946, and if equivalent to degree courses at standard universities, will be given proportionate credit, which will be applied, as far as possible, on requirements of the University of Washington. Basic military training provides 12 quarter credits and will be applied on lower-division physical education and Military Science requirements. (See page 85.) Specialized training courses for enlisted men, such as those which qualify a man to be an Airplane Engine Mechanic or Airplane Instrument and Electrical Specialist, carry from 6 to 18 quarter credits. Credits allowed for such training are applied, if possible, on University requirements, but they are not readily applicable to the requirements of the set curricula in the College of Engineering, in premedicine, and elsewhere. No credit shall be allowed for work entered upon in Armed Forces training schools subsequent to September, 1946.

Credit earned in extension departments of accredited universities through the U.S.A.F.I. will be applied, as far as possible, on University requirements.

Consult the Admissions Office of the University for an exact evaluation of such credits.

Physical Education. Veterans who have had one year's active service are excused from physical education courses according to the following schedule:

1. An ex-serviceman who had his entire period of training prior to August 15, 1945, will be exempt from physical education activity and P.E. 75 requirements.
2. An ex-serviceman who had part of his training after August 15, 1945, should consult the Physical Education Department regarding his allowance of credit.
3. An ex-serviceman who had his entire period of training after August 15, 1945, will not be allowed exemption from physical education activity and P.E. 75 requirements.

Vocational Guidance. Vocational counselors in the Counseling Center are prepared to assist veterans desiring vocational guidance.

Registration. The veteran's first stop on the campus is the Office of Student Affairs, where a counselor will give him information and assistance.

Married Students. The University accepts married students. See, however, the section on housing.

Loans

The University administers several loan funds available to students who have successfully completed at least one quarter in the University. Students desiring term loans should file applications prior to the beginning of instruction in the quarter during which the loan is required. For information, consult the Office of Student Affairs, which keeps complete information on the availability of loan funds within and without the University. Loans from funds administered off-campus should be applied for approximately six weeks in advance of need. Requests for funds to meet temporary emergency needs may be made through the Office of Student Affairs which can help determine the best manner to meet the emergency.

ALUMNI ASSOCIATION

All graduates of the University of Washington, as well as all persons who have completed satisfactorily one year of collegiate work, are eligible for membership in the Association. The membership fee is five dollars ($5) for one year (twelve months from date of payment). Members receive a one-year subscription to the *Washington Alumnus,* with library, football, swimming, voting, and other privileges. A dual membership for man and wife, ~~or for two persons living at the same address,~~ is six dollars ($6) per year; this includes one annual subscription to the *Washington Alumnus* and all other privileges of a single membership. A Board of Trustees, consisting of twenty-three members, is the governing body of the Association.

SCHOLASTIC HONORS

Honor Awards

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.

Honor Societies

Phi Beta Kappa Sigma Xi Tau Beta Pi Order of the Coif

FELLOWSHIPS, SCHOLARSHIPS, PRIZES, AND AWARDS

The University offers many rewards for outstanding academic achievement. Some are given by the University, but many are available through the generosity of friends and alumni of the University. Some bear the names of those in whose memory the funds were given. These awards take varying forms.

Fellowships are awarded to graduate students who show promise of success in research in both theoretical and applied studies. These are granted by the Dean of the Graduate School and by individual departments. Teaching fellowships are those which require duty as a teaching assistant.

Scholarships are granted on application and on a competitive basis. Usual requirements include scholarly achievement and promise, excellence of character, and financial need. Awards are made principally to upperclass and graduate students. The University has a few scholarships available to entering freshmen and invites inquiry concerning them.

Prizes are financial awards which total less than tuition and are generally awarded for some specific competition, such as an essay contest on an assigned subject.

Awards consist of recognition other than by financial reward and are generally given for a combination of scholarly achievement and participation in activities.

Application for scholarship information should be made to the University Scholarship Committee, Office of Student Affairs, University of Washington, Seattle 5, Washington.

Following is a partial list of those available:

Scholarships and Fellowships

Alpha Chi Omega Alumnae
American Foundation for Pharmaceutical Education
Seattle Branch, American Association of University Women
Women's Auxiliary of American Institute of Mining & Metallurgical Engineers
Agnes Healy Anderson Research Fellowships
State Federation of Garden Clubs
A.S.U.W.
Isabella Austin Memorial
R. C. Beezley
Borden Company Foundation, Inc.
Julius & Louisa Bornstein
Chinese Ministry of Education
City Panhellenic Association
Consolidated Dairy Products Company
Consolidated Vultee Aircraft Corporation
May Frances Crosno Memorial
Darigold Scholarship
Daughters of American Revolution
Arthur A. Denny Fellowships
Sara Loretta Denny Fellowships
Frances Dickey Memorial
Bob Doble Memorial
School of Drama Scholarships
Engineering Fellowships
Engineering Experiment Station Graduate Fellowships
Evergreen Theatres
Family Society of Seattle Fellowships
Foreign Exchange Scholarships
Frederick and Nelson
Gamma Phi Beta Alumnae
Home Economists in Business
Inter-Fraternity Alumni Council
Inter-Fraternity Council
Iota Sigma Pi
Arlien Johnson Scholarship
Kappa Alpha Theta Alumnae
Kappa Kappa Gamma Alumnae
King County Welfare Department Fellowships
Kellogg Foundation
Seattle Lady Lions Scholarship
William Mackay Memorial
Charles E. Merrill
Mines Research Fellowship
C. C. More Scholarship and Loan Fund
Mu Phi Epsilon
T. F. Murphy
National Research Fellowships
E. C. Neufelder
Phi Mu Alpha
Pi Lambda Theta
Radio Corporation of America
Seattle Quota Club
Rhodes Scholarships
Rotary Citizenship
Wealthy Ann Robinson Memorial
Ryther Child Center Fellowships
Sears, Roebuck & Co.
University Memorial Scholarships
University of Washington Alumnae Association
Washington Children's Home Society Fellowship
Livingston Wernecke Memorial
Westinghouse Electric Corporation
William Wallace Wilshire Scholarship (Law)
Emma S. Yule

Prizes and Awards

Advertising Club
Alpha Kappa Psi
Alpha Rho Chi
American Institute of Architects
Architecture Alumni
A.S.U.W. (Discussion Squad)
Frank W. Baker
Philo Sherman Bennett
Beta Gamma Sigma Alumnae
Nathan Burkan Memorial
Vivian M. Carkeek
Chi Omega
Delta Phi Alpha
Delta Phi Mu
Honor Basic Military Student Prizes
Italian Club
Paul H. Johns, Jr., Memorial
Junior Military Medals
Junior Military Prize
Sebastian Karrer
Beecher Keifer Memorial
Lehn & Fink Medal
McKesson and Robbins Drug Company
W. G. McLaren (Law)
Colonel Mear's Award (Coast Artillery)
Military Science Leadership Prizes
Ruth Nettleton Memorial
Charles Lathrop Pack Memorial
Phi Delta Kappa
Phi Lambda Upsilon
Phi Mu Gamma
Phi Sigma
Pi Alpha
Robert T. Pollard Memorial
Quartermaster Association Certificate
Quartermaster Corps Award
Rho Chi Society
Helen Nielson Rhodes Memorial
Scabbard and Blade
Sigma Delta Chi
Sigma Epsilon Sigma
Women's Auxiliary of Washington State Pharmaceutical Association
Western Printing Company
Howard Brown Woolston
Zeta Phi Eta

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. Through the A.S.U.W. Board of Control and its various committees and boards, students assume major responsibility in the government of student life with authority delegated by the University. Membership is required of all regularly enrolled undergraduate students. For fees, see pages 81-82. The fee gives each student a membership in the corporation, and helps to finance the program of athletics, debates, concerts, lectures, the University of Washington Daily, and other activities of the A.S.U.W. A portion of the fee has assisted in the construction of the Student Union Building, and will continue to assist in the operation of the building. It is contemplated that the building will be open for occupancy sometime during the summer of 1949. Any member of the A.S.U.W. has the privilege of purchasing an athletic ticket for $2.50, including federal and city admission taxes. This ticket, when properly validated, will admit owner to all regularly scheduled Pacific Coast Conference intercollegiate athletic events during the school year.

SECTION II—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 degree of bachelor of arts or bachelor of science.

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

Student Counseling

Each department and school within the College provides faculty advisers for its students. The Office of the Dean maintains a staff of advisers to counsel with pre-majors.

Entrance Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 75-85. 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

English 1, 2, and 3 (9 credits) or the equivalent, after passing the preliminary freshman-English test, are required of all students. For English 3, journalism students substitute Journalism 51, News Writing.

English 1, 2, and 3 may not be counted in fulfillment of the group requirements listed below under curricula nor toward a major or minor. Students are assigned to the proper course on the basis of an entrance and placement test. They may (1) be exempted from English 1 and 2, a privilege which is usually granted only to mature persons with writing experience; (2) be assigned to English A, a noncredit course required for entrance into English 1.

Physical Education 10, a 2-credit *academic* course, must be taken by all women during the freshman year.

Physical Education 75, a 2-credit *academic* course, is required of all men.

All male students entering directly from high school will be held for the Military Science requirement of six quarters. See page 85 for details.

In all other respects the requirements for graduation in the College Arts and Sciences conform to the all-University requirements.

In *all* curricula, the 180 academic credits required for graduation must include a minimum of 60 credits in upper-division courses, exclusive of those earned in Army or Navy R.O.T.C. subjects.

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
Humanities	*Social Sciences*	*Sciences*
Architecture	Anthropology	Anatomy 103
Art	Economics	Astronomy
Classical Languages	Geography	Botany
Drama	History	Chemistry
English	Home Economics	Fisheries
Far Eastern	Philosophy	Geology
General Literature	Physical Education	Mathematics
Germanic Languages	Political Science	Meteorology and Climatology
Journalism	Psychology	Microbiology
Liberal Arts	Sociology	Oceanography I
Librarianship		Pharmacy 15
Music		Physics
Romance Languages		Zoology
Scandinavian Languages		
Speech		

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.

Courses taken to remove entrance deficiencies shall not be used to satisfy group requirements.

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) nondepartmental 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 enter these curricula will 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 36 or more credits in the subjects represented by the department concerned. They are expected to complete, during the first two years, a minimum of 30 credits in one group, 20 credits in a second group, and 10 credits in the remaining group. Departments may add to these requirements if they so desire.

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. Nondepartmental Curricula

A. Premajor. Those students who have not selected a major must meet general University and College requirements. They are assigned to faculty advisers by the Dean's office. Normally students remain as premajors for only one year.

B. 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 115, for detailed requirements.)

Students majoring in General Studies are assigned to faculty advisers for guidance and planning programs. The degree will be bachelor of arts or bachelor of science, depending upon the relative preponderance of scientific or nonscientific subjects in the curriculum.

Major Requirements and Special Curricula in the Various Departments and Schools

Below are listed the major requirements and set curricula for the College of Arts and Sciences, and teaching major and minor requirements in the College of Education. Deviations from the college requirements for graduation may be authorized by the College Graduation Committee upon the recommendation of the student's major department.

For requirements for advanced degrees, see Graduate School section, page 179.

ANTHROPOLOGY

ERNA GUNTHER, *Executive Officer*, 211 Museum

DEGREE: Bachelor of Arts

The following courses are required: 51, 52, 53; 60 or 63; 65 or 66; 101, 105 or 107; 111, 112, 113 or 114; 120; 142; 143; 150; 160; 185. A 2.5 grade-point average in anthropology is also required; electives must be approved by the department and should include two foreign languages chosen from French, German, or Spanish if graduate work is contemplated.

There is also a Latin-American anthropology major; consult description under General Studies.

ARCHITECTURE

ARTHUR P. HERRMAN, *Director*, 301 Physiology Hall

Member of Association of Collegiate Schools of Architecture

Requirements for Degree. The credit requirement for graduation (exclusive of physical education activity courses) 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 in design, Arch. 54, 55, 56 are known as Grade I; Arch. 104, 105, 106, Grade II; and Arch. 154, 155, 156, 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.

Curriculum in Architecture

DEGREE: Bachelor of Architecture

PRE-ARCHITECTURE REQUIREMENTS

FIRST YEAR	*Credits*
Arch. 1, 2. Appreciation	4
Arch. 3. The House	2
Engl. 1, 2, 3. Composition	9
Math. 54, 55, 56. Arch. Math.	9
Soc. 1. Survey, for Arch.	5
Soc. 16. Amer. Housing	5
P. E. 10 or 75	2
P. E. Activity	+
Mil. or Nav. Sci.	+
Electives	8

SECOND YEAR	*Credits*
Arch. 24, 25, 26. Basic Design	18
Physics 1 or 4. General	5
Physics 12, 13. Arch. Physics	10
Psychology 4. Industrial Psych.	3
Economics 10. Introduction to Econ.	5
P. E. Activity	+
Mil. Sci. or Nav. Sci.	+
Electives	5

ARCHITECTURE REQUIREMENTS

THIRD YEAR

	Credits
Arch. 40, 41, 42. Water Color	9
Arch. 54, 55, 56. Design Gr. I	21
Arch. 61, 62, 63. Materials	6
Arch. 47, 48, 49. Theory of Bldg. Constr.	9

FOURTH YEAR

	Credits
Arch. 51, 52, 101. Hist. of Arch.	6
Arch. 104, 105, 106. Design Gr. II	21
Arch. 135. City Planning	2
Arch. 152, 153. Theory	4
Arch. 116, 117, 118. Arch. Engr.	12

FIFTH YEAR

	Credits
Arch. 102, 103, 151. History	6
Arch. 120, 121, 122. Contract Drawings	10
Arch. 154, 155, 156. Design Gr. III	21
Arch. 169. Specs. & Contracts	3
Arch. 126, 127, 128. Mech. Equip. or Bldg.	6

Curriculum in City Planning

DEGREE: Bachelor of Architecture in City Planning

FIRST YEAR, SECOND YEAR, THIRD YEAR

Same as present curriculum in Architecture

FOURTH YEAR

	Credits
Arch. 152, 153. Theory	4
Arch. 104, 105. Design Gr. II	14
Arch. 180, 181. Principles of Planning	4
Arch. 190, 191. C. P. Design	10
G. E. 21. Surveying	3
C. E. 150. San. Engr. and P. H.	3
C. E. 152. Municipal Engr.	3
Electives	4

FIFTH YEAR

	Credits
Arch. 182, 183. Principles of Planning	3
Arch. 192, 193. C. P. Design	10
Arch. 194. Thesis	7
B.A. 57. Business Law	3
B.A. 109. Principles of Urban Real Estate	5
Geog. 155. Infl. Geogr. Environment	5
Soc. 145. Urban Community	5
Electives	7

ART

WALTER F. ISAACS, *Director*, 404 Education Hall

DEGREE: Bachelor of Arts

Advanced standing in the 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. In the curricula which follow, the laboratory science requirement may be satisfied with botany, zoology, chemistry, physics (except photography), or geology. The work of the first year is the same for all majors except those in Art Education, Industrial Design, and Ceramic Art.

REQUIRED FOR THE FIRST YEAR

Autumn Quarter	Credits	*Winter Quarter*	Credits	*Spring Quarter*	Credits
Art 5. Drawing	3	Art 6. Drawing	3	Art 7. Drawing	3
Art 9. Design	3	Art 10. Design	3	Art 11. Design	3
Engl. 1. Composition	3	Engl. 2. Composition	3	Engl. 3. Composition	3
Mod. Foreign Language	5	Mod. Foreign Language	5	Mod. Foreign Language	5
P.E. 10 or 75	2	P.E. Activity	+	Electives	2
P.E. Activity	+	Mil. Sci. or Nav. Sci.	+	P.E. Activity	+
Mil. Sci. or Nav. Sci.	+		14+	Mil. Sci. or Nav. Sci.	+
	16+				16+

General Curriculum

FIRST YEAR

(Same as listed above)

SECOND YEAR

Autumn Quarter	Credits	*Winter Quarter*	Credits	*Spring Quarter*	Credits
Art 53. Adv. Design	3	Art 54. Adv. Design	3	Art 55. Adv. Design	3
Art 56. Painting	3	Art 57. Painting	3	Art 58. Painting	3
Art 12. History of Art through the Renaissance	5	Art 72. Sculpture	3	Electives	9
Electives	4	Electives	6	P.E. Activity	+
P.E. Activity	+	P.E. Activity	+	Mil. Sci. or Nav. Sci.	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+		
	15+		15+		15+

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Arch. 1. Appreciation	2	Arch. 2. Appreciation	2	Approved Design	3
Art 160. Life	3	Art 161. Life	3	Art 162. Life	3
Art 103. Ceramics, or Art 157, Metal	3	Art 104. Ceramics, or Art 158, Jewelry	3	Laboratory Science	5
Econ., Pol. Sci., or Soc.	5	Laboratory Science	5	Electives	4
Electives	2	Art 126. History of Painting since the Renaissance	2		15
	15		15		

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 101. Elementary Interior Design	2	Art 150. Illustration or Art 151, Printmaking	5	Art 120. History of Modern Sculpture	2
Art 163. Composition	3	Art 164. Composition	3	Art 197. Senior Seminar	1
Art 195. Senior Seminar	1	Art 196. Senior Seminar	1	Electives	12
Electives	9	Electives	6		15
	15		15		

Those interested in Costume Design should elect as many as possible of the following courses: Art 169, 170, 171, 179, 180, 181; Home Economics 132, 12, 25, 101, 102, 112, 113, 133. Home Economics 132 (for Art majors) is recommended to those taking Art 169, 170, 171.

Art Education

The bachelor's degree will be awarded upon the completion of the four-year course. For the Three-Year Secondary Certificate, the fifth year must be completed. The first minor is in the major field, but the candidate must have a second minor in another field. See also College of Education. The social science credits may be earned in sociology, economics, political science, or History 164. An average standing of 2.5 in art subjects is required of all teaching candidates.

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 5. Drawing	3	Art 6. Drawing	3	Art 7. Drawing	3
Art 9. Design	3	Art 10. Design	3	Art 11. Design	3
Engl. 1. Composition	3	Engl. 2. Composition	3	Engl. 3. Composition	3
P.E. 10 or 75	2	Econ., Pol. Sci., or Soc.	5	Electives	7
Electives	4	P.E. Activity	+	P.E. Activity	+
P.E. Activity	+	Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+
Mil. Sci. or Nav. Sci.	+		14+		16+
	15+				

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Arch. 1. Appreciation	2	Arch. 2. Appreciation	2	Art 55. Adv. Design	3
Art 53. Adv. Design	3	Art 54. Adv. Design	3	Art 58. Painting	3
Art 56. Painting	3	Art 57. Painting	3	Psychology 1. General	5
Art 12. History of Art through the Renaissance	5	Laboratory Science	5	Electives	4
Educ. 1. Orientation	2	Electives	2	P.E. Activity	+
P.E. Activity	+	P.E. Activity	+	Mil. Sci. or Nav. Sci.	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+		15+
	15+		15+		

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 103. Ceramics, or Art 157, Metal	3	Art 104. Ceramics, or Art 158, Jewelry	3	Art 102. Book-binding	2
Art 105. Lettering	3	Social Science	5	Art 162. Life	3
Art 72. Sculpture, or Art 169, Costume Design (*credits* 2 or 3)		Art 100. Elem. Crafts	2	Laboratory Science	5
		Educ. 70. Procedures	5	Electives	5
Educ. 9	3		15		15
Electives	2 or 3				
	13 to 15				

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 101. Elementary Interior Design	2	Art 126. History of Painting since the Renaissance	2	Art 150. Illustration, or Art 152, Printmaking	5
Art 163. Composition	3	Art 164. Composition	3	Art 197. Senior Seminar	1
Art 195. Senior Seminar	1	Art 196. Senior Seminar	1	Art 120. History of Modern Sculpture	2
Educ. 75A. Methods	2	Art 166. Commercial Design	5	Educ. 90. Measurements	2
Electives	7	Electives	4	Electives	5
	15		15		15

FIFTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Educ. 71. Cadet Teaching	5	Educ. 72. Cadet Teaching	3	History 164. Wash. State	5
Philosophy 129	5	Educ. 110. Educ. Sociology	3	Educ. 60. Principles of Education	3
Electives	5	Electives	9	Electives	7
	15		15		15

Teaching Major and Minor in the College of Education

The curriculum in *Art Education* described above provides a teaching major with the first minor in Art. The courses credited to the minor are: Art 20, 101, 102, 103, 104 or 157, 158; 105, 126, 166—a total of 21 credits.

For those who do not take the first minor in Art the following courses constitute a major: Art 5, 6, 7, 9, 10, 11, 12, 53, 54, 55, 56, 57, 58, 100, 150; 160 or 161 or 162; 163 or 164; Costume Design or Sculpture, two or three credits—a total of 58 credits.

The minor for nonmajors requires: Art 5, 6, 7, 9, 10, 11, 12, 53, 54, 101, 102, 105.

A minor open to Home Economics majors in Textiles and Clothing requires: Art 5, 6, 9, 10, 11, 53, 54, 55, 105, 169, 170.

Commercial Art

FIRST YEAR

(Same as for General Curriculum)

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 53. Advanced Design	3	Art 54. Advanced Design	3	Art 55. Advanced Design	3
Art 56. Painting	3	Art 57. Painting	3	Art 58. Painting	3
Arch. 1. Appreciation	2	Arch. 2. Appreciation	2	Art 120. History of Modern Sculpture	2
Art 12. History of Art through the Renaissance	5	Art 51. Figure Sketching	1	Economics 10	5
Electives	3	Psychology 1	5	Electives	2
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+
	16+		14+		15+

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 105. Lettering	3	Art 126. History of Painting since the Renaissance	2	Art 129. Apprec. of Design	2
Journ. 130. Fundamentals of Advertising	3	Journ. 131. Display Adver.	3	Art 162. Life	3
Laboratory Science	5	Laboratory Science	5	Journ. 132. Typography	3
Electives	4	Electives	5	Pol. Sci. 1 or Soc. 100	5
	15		15	Electives	2
					15

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 163. Composition	3	Art 166. Commercial Design	5	Art 167. Commercial Design	5
†Art 169. Costume Design	2	Art 151. Printmaking	5	Art 197. Senior Seminar	1
Art 195. Senior Seminar	1	†Art 170. Costume Design	2	Electives	9
Electives	9	Art 196. Senior Seminar	1		15
	15	Electives	2		
			15		

† Art 171 may be substituted for Art 169 or 170.

Industrial Design Curriculum

FIRST YEAR

Autumn Quarter	*Credits*
Art 5	3
Art 9	3
Engl. 1	3
Arch. 1	2
P.E. 10 or 75	2
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	13+

Winter Quarter	*Credits*
Art 6	3
Art 10	3
Engl. 2	3
Arch. 2	2
G.E. 7	3
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	14+

Spring Quarter	*Credits*
Art 7	3
Art 11	3
Engl. 3	3
Math. 22	5
Speech 27	3
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	17+

SECOND YEAR

Autumn Quarter	*Credits*
Art 53	3
Arch. 110	4
M.E. 53	1
Physics 1 or 4	5
B.A. 57	3
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	16+

Winter Quarter	*Credits*
Art 54	3
Arch. 111	4
M.E. 54	1
Physics 12	5
Home Economics 24	2
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	15+

Spring Quarter	*Credits*
Art 55	3
Arch. 112	4
M.E. 55	1
Physics 13	5
Art 120	2
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	15+

THIRD YEAR

Autumn Quarter	*Credits*
Art 12	5
Art 80	3
*Chemistry	5
Electives	2
	15

Winter Quarter	*Credits*
Art 103	3
Psych. 4	3
*Chemistry	5
M.E. 109	3
	14

Spring Quarter	*Credits*
Art 157	3
Art 129	2
Art 105	3
Econ. 10	5
M.E. 131	3
	16

FOURTH YEAR

Autumn Quarter	*Credits*
Art 195	1
Art 116	3
Art 101	2
Art 122	3
Journ. 130	3
Electives	3
	15

Winter Quarter	*Credits*
Art 196	1
Art 117	3
Art 126	2
B.A. 106	5
Journ. 131	3
Electives	1
	15

Spring Quarter	*Credits*
Art 197	1
Art 118	3
G.E. 151	1
Journ. 132	3
Electives	7
	15

* Electives may be substituted for Chemistry (10 cr.) if the student presents 1 year of high school Chemistry for entrance.

Suggested electives: Art 15, 16, 58, 62, 81, 82, 104, 123, 124, 140, 166; Engineering English 40, 81, 123, 124, 125; B.A. 134; Psychology 160; Sociology 100.

Interior Design

FIRST YEAR

(Same as for General Curriculum)

SECOND YEAR

Autumn Quarter	*Credits*
Art 80. Furniture Design.	3
Art 83. History of Furniture and Interior Styles	2
Arch. 1. Appreciation	2
Arch. 24 or 110	6 or 4
Electives	4
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	17+ or 15+

Winter Quarter	*Credits*
Art 81. Furniture Design.	3
Arch. 2. Appreciation	2
Arch. 25 or 111	6 or 4
Electives	6
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	17+ or 15+

Spring Quarter	*Credits*
Art 82. Furniture Design.	3
Arch. 3. Appreciation	2
Arch. 26 or 112	6 or 4
Art 62. Essentials of Interior Design	2
Electives	4
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	17+ or 15+

THIRD YEAR

Autumn Quarter	*Credits*
Art 110. Interior Design.	5
Art 12. History of Art through the Renaissance	5
Laboratory Science	5
	15

Winter Quarter	*Credits*
Art 111. Interior Design.	5
Art 126. History of Painting since the Renaissance	2
Laboratory Science	5
Electives	3
	15

Spring Quarter	*Credits*
Art 112. Interior Design.	5
Econ., Pol. Sci., or Soc.	5
Electives	5
	15

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 172. Advanced Interior Design	5	Art 173. Advanced Interior Design	5	Art 174. Advanced Interior Design	5
Art 195. Senior Seminar	1	Art 196. Senior Seminar	1	Art 197. Senior Seminar	1
Electives	9	Home Economics 146	5	Art 120. History of Modern Sculpture	2
	15	Electives	4	Electives	7
			15		15

Painting

FIRST YEAR

(Same as for General Curriculum)

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Arch. 1. Appreciation	2	Arch. 2. Appreciation	2	Art 120. History of Modern Sculpture	2
Art 56. Painting	3	Art 57. Painting	3	Art 58. Painting	3
Art 12. History of Art	5	Art 72. Sculpture	3	Laboratory Science	5
Art 65. Painting	3	Art 66. Painting	3	Art 67. Painting	3
Electives	2	Electives	4	Electives	2
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+
	15+		15+		15+

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 160. Life	3	Art 126. History of Painting since the Renaissance	2	Art 162. Life	3
Art 175. Adv. Painting	3	Art 161. Life	3	Art 177. Adv. Painting	3
Laboratory Science	5	Art 176. Adv. Painting	3	Approved Design	6
Electives	4	Sociology, Economics, or Political Science	5	Electives	3
	15	Electives	2		15
			15		

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 107. Portrait Painting	3	Art 108. Portrait Painting	3	Art 109. Portrait Painting	3
Art 163. Composition	3	Art 164. Composition	3	Art 165. Composition	3
Art 195. Senior Seminar	1	Art 196. Senior Seminar	1	Art 197. Senior Seminar	1
Electives	8	Electives	8	Electives	8
	15		15		15

Sculpture

FIRST YEAR

(Same as for General Curriculum)

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 72. Sculpture	3	Art 73. Sculpture	3	Art 74. Sculpture	3
Art 56. Painting	3	Art 57. Painting	3	Art 58. Painting	3
Arch. 1. Appreciation	2	Arch. 2. Appreciation	2	Art 120. History of Modern Sculpture	2
Art 12. History of Art through the Renaissance	5	Laboratory Science	5	Laboratory Science	5
Electives	2	Electives	2	Electives	2
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+
	15+		15+		15+

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 122. Sculpture	3	Art 123. Sculpture	3	Art 124. Sculpture	3
Art 132. Adv. Sculpture	3	Art 133. Adv. Cculpture	3	Art 134. Adv. Sculpture	3
Art 160. Life	3	Art 161. Life	3	Art 162. Life	3
Art 103. Ceramics	3	Art 104. Ceramics	3	Economics, Political Science, or Sociology	5
Electives	3	Art 126. History of Painting since the Renaissance	2	Elective	1
	15	Elective	1		15
			15		

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 136. Sculpture Comp..	5	Art 137. Sculpture Comp..	5	Art 138. Sculpture Comp..	5
Art 195. Senior Seminar..	1	Art 196. Senior Seminar..	1	Art 197. Senior Seminar..	1
Electives	9	Electives	9	Electives	9
	15		15		15

Ceramic Art

DEGREE: Bachelor of Art (at end of fourth year)
and
DEGREE: Bachelor of Art in Ceramic Art (at end of fifth year)

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 5. Drawing.....	3	Art 6. Drawing.....	3	Art 7. Drawing.....	3
Art 9. Design.....	3	Art 10. Design.....	3	Art 11. Design.....	3
Engl. 1. Composition.....	3	Engl. 2. Composition.....	3	Engl. 3. Composition.....	3
*Chem. 1. Gen. Inorganic.	5	Chem. 2. Gen. Inorganic..	5	Chem. 23. Gen. Inorganic.	5
P.E. 10 or 75. Health Education	2	Electives	2	P.E. Activity	+
P.E. Activity	+	P.E. Activity	+	Mil. Sci. or Nav. Sci.....	+
Mil. Sci. or Nav. Sci.....	+	Mil. Sci. or Nav. Sci.....	+		14+
	16+		16+		

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 53. Advanced Design.	3	Art 54. Adv. Design.....	3	Art 55. Adv. Design.....	3
Art 53. Adv. Design.....	3	Art 57. Painting.....	3	Art 58. Painting.....	3
Modern Foreign Language	5	Modern Foreign Language	5	Modern Foreign Language	5
Math. or Physics.....3 or	5	Math. or Physics.....3 or	5	Math. or Physics.....3 or	5
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. Sci. or Nav. Sci.....	+	Mil. Sci. or Nav. Sci.....	+	Mil. Sci. or Nav. Sci.....	+
	14 or 16+		14 or 16+		14 or 16+

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 103. Ceramic Art....	3	Art 104. Ceramic Art....	3	Art 130. Ceramic Art....	3
Art 72. Sculpture.....	3	Art 73. Sculpture.....	3	Art 74. Sculpture.....	3
Ceramic Engr. 100.....	3	Ceramic Engr. 101.....	3	Ceramic Engr. 90.....	3
Art 12. History of Art through the Renaissance	5	Econ., Pol. Sci., or Soc...	5	Art 120. History of Sculpture	2
	14	Art 126. History of Painting since the Renaissance	2	Art 101. Essentials of Interior Design	2
			16	Electives	2
					15

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 153. Adv. Ceramic Art	3	Art 154. Adv. Ceramic Art	3	Art 155. Adv. Ceramic Art	3
Art 160. Life.....	3	Art 161. Life.....	3	Art 162. Life.....	3
Art 157. Metal.....	3	Art 158. Jewelry.....	3	Art 197. Senior Seminar..	1
Ceramic Engr. 104.....	3	Art 196. Senior Seminar..	1	Electives	8
Art 195. Senior Seminar..	1	Social Science	5		15
Electives	2		15		
	15				

FIFTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Art 163. Composition....	3	Art 164. Composition.....	3	Art 165. Composition.....	3
Art 185. Adv. Ceramic Art	5	Art 186. Adv. Ceramic Art	5	Art 187. Adv. Ceramic Art	5
Electives	7	Electives	7	Electives	7
	15		15		15

* Not required if one year of high school chemistry is offered.

BACTERIOLOGY

(See Microbiology, page 125)

BIOCHEMISTRY

(See page 170)

BASIC MEDICAL SCIENCE

HAROLD M. HINES, *Adviser*, 121 Education Hall

DEGREE: Bachelor of Science in Basic Medical Science

This curriculum is intended to provide the bachelor's degree for students who enter medical school at the completion of their third year of preprofessional work and wish to apply their first year's credit gained at medical school to obtain the degree of bachelor of science in basic medical science from the University of Washington.

The requirements for this degree are that the student shall complete the University of Washington "Premedical Curriculum," and the first year of a medical school or dental school curriculum. The student must take at least the third year of his premedical, and the first year of his medical course in residence at the University of Washington, and shall present an over-all grade-point average of 2.5 or above, including the work at the medical school. A student who takes at least the second and third years of the premedical course at the University of Washington and then enters another medical school may also qualify for this degree. Applications for the degree should be directed to A. W. Martin, Executive Officer of the Zoology Department.

Credit in subjects taught in the first year's curriculum of any Class A medical school, as rated by the A. M. A. may be applied toward the degree. Since some upper-division courses in anatomy, physiology, microbiology, and chemistry are considered to duplicate similar courses in medical school, credit gained in these courses at the University of Washington will not be accepted toward the degree. Students should work closely with their advisers on this matter.

BOTANY

C. L. HITCHCOCK, *Executive Officer*, 342 Johnson Hall

DEGREE: Bachelor of Science

The elective major requires 40 credits, including courses 1, 2, 3, 108, and 143 or 144, and a minimum of 2 quarters of college chemistry. Organic chemistry is recommended for all majors, and required of those who contemplate graduate work.

Teaching Major or Minor in the College of Education

See Biology under College of Education (page 145) concerning teaching major, A minor requires 25 credits including courses 1 (or Biol. 1-2), 2, 3, and at least 2 credits in 24L or 25L, or equivalent.

CHEMISTRY

PAUL C. CROSS, *Executive Officer*, 101 Bagley Hall

Upon completion of the first 90 credits or on transfer from another school, every student will be passed upon by a departmental committee to determine whether or not the department desires to sponsor the student in further work in his curriculum.

Elective Curriculum

DEGREE: Bachelor of Science

The following courses or their equivalent constitute the minimum requirements for the elective major: Chemistry 21-22 (or 1-2), 23, 111, 131, 128, 132, 129; 140-141 or 161-162 (premedical students should not take 161-162); 15 credits each of college mathematics and physics; 10 credits in German or French. At least 20 credits in

chemistry and 10 credits in physics should be completed among the first 90 credits. The intention of the student to major in chemistry should be declared not later than the end of the sophomore year. A grade of "C" or better must be obtained in each of the required chemistry courses.

Prescribed Curriculum

DEGREE: Bachelor of Science in Chemistry

The minimum requirements of the prescribed curriculum and the normal sequence of courses are:

First Year: Chem. 21-22 (or 1-2), 23; Math. 4, 5, 6; English 1, 2, 3; P. E. 10 or 75.

Second Year: Chem. 109, 110, 101; Math. 107, 108, 109; Physics 1, 2, 3 (or 4, 5, 6).

Third Year: Chem. 131, 128, 132, 130, 133, 134; at least 10 credits* in German or French.

Fourth Year: Chem. 181, 182, 183, 190.

All electives must be approved by the department. For graduation under the prescribed curriculum the student must present (1) a grade-point average of 2.5 in the required chemistry courses, with a grade of "C" or better in each course, (2) a grade-point average of 2.5 in all academic courses.

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 36 credits: Chem. 1-2 or 21-22, 23, 111, 131, 128, 132, 129, 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, 128, 132, 129. At least high school physics is required for the minor.

Grades of "C" or above must be obtained in all required chemistry 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

(Greek and Latin)

H. B. DENSMORE, *Executive Officer,* 213 Denny Hall

DEGREE: Bachelor of Arts

For an undergraduate major 36 credits are required, at least one-half of which must be in upper-division courses. In addition, Latin 3 or equivalent is strongly advised for a major in Greek, and Greek 3 for a major in Latin. Greek 1 to 3 and Latin 1 to 6 do not count for a major or minor in the department.

Major in Greek

For the major in Greek (a) at least 9 credits must be chosen from courses numbered from 100 to 149; (b) at least 9 credits must be chosen from courses numbered 150 and above. The remaining credits of the 36 must be chosen, with the advice of the department, from the following: upper-division courses in Greek, Latin, Classical Antiquities; History 72-73, 100, 101, 111, 210; Philosophy 101-102, 112.

Major in Latin

For the major in Latin (a) at least 9 credits (including credits for Latin 140) must be chosen from courses numbered from 100 to 149; (b) at least 9 credits must be chosen from courses numbered 150 and above. The remaining credits of the 36 must be chosen, with the advice of the department, from the following: upper-division courses in Latin, Greek, Classical Antiquities; History 72-73, 103, 104, 111, 116J, 210; Philosophy 101-102, 112.

* The foreign language should be continued through courses in scientific German or French.

Major in Classics

The major of 36 credits must include (a) Greek 4, 5, 6 and at least 9 credits from Greek courses numbered 100 and above; (b) at least 18 credits in Latin from courses numbered 100 and above, subject to the approval of the departmental adviser.

Teaching Major or Minor in Latin in the College of Education

The teaching major is the same as the major in the College of Arts and Sciences. For the minor, 20 approved credits in courses numbered 100 or above, including Latin 140, are required.

DRAMA

GLENN HUGHES, *Director*, 410 Denny Hall

DEGREE: Bachelor of Arts

In drama, the major and minor are the same for graduation in the College of Arts and Sciences and for a secondary certificate in the College of Education.

A major requires 63 credits, made up of the following courses: 1, 2, 46, 47, 48, 51, 52, 53, 103, 104, 105, 106, 114, 121, 122 (or 123), 127, 128, 129, 151, 152, 153, 181 (or 182 or 183), and 197. A senior comprehensive examination is also required. An additional requirement is 25 credits in literature, including English 64, 65, 170, and either 171 or 172.

A minor requires 33 credits, made up of the following courses: 1, 2, 46, 47, 48, 51, 52; 6 credits from 103, 104, 105, 106, 114; 6 credits from 127, 128, 129, 151, 152, 153; and 197.

ECONOMICS

J. RICHARD HUBER, *Acting Executive Officer*, 331 Savery Hall

DEGREE: Bachelor of Arts

The Department of Economics offers three elective curricula. These are (1) a general major in economics for students who desire a broad economics background with opportunity to develop interests in other social sciences or in related business fields; (2) a course of study providing training for general government service; (3) a teaching major or minor in the College of Education.

General Major

In addition to the general requirements of the College of Arts and Sciences*, the departmental requirements are as follows:

1. Economics 10, B.A. 62, 5 credits of statistics (B.A. 60, Sociology 31, Math. 13 or Psych. 108), 15 additional credits of social sciences (Group II), which may include Econ. 16 and 70, to be taken in first two years.
2. Economics 100 plus a total of 30 additional credits to be selected from a minimum of 4 fields (listed below) other than the field of economic theory.
3. One field of specialization from those listed below must be chosen in which 10 credits (of the 30 credits required) shall be taken. A faculty adviser from this field will advise the student and must approve the student's program of courses. (Students specializing in International Trade shall also take B.A. 181.)

Fields of Specialization:

I. Economic Theory—Econ. 100, 102, 103, 104, 105, 106, 107, 199
II. Money, Banking, and Cycles—Econ. 120 (B.A. 120) 121, 122 (B.A. 175), 123, 199
III. Government Regulation, Public Utilities and Transportation—Econ. 130, 132, 133, 134, 135, 199

* Students registered in the former College of Economics and Business before August 1, 1948 will not be required to make up high school deficiencies in foreign language or laboratory science.

IV. Labor Economics—Econ. 140, 141, 143, 144, 145, 146, 199
V. Public Finance and Taxation—Econ. 150, 151, 199
VI. Economic History—Econ. 160, 161, 162, 199
VII. International Trade—Econ. 170, 171, 172, 173, 199, and B.A. 181
VIII. Economic Statistics and Mathematical Economics—(No courses at present)
IX. National Economics—Econ. 190, 192, 193, 199

CURRICULUM FOR ECONOMISTS IN GOVERNMENT SERVICE

(Intended to train students for professional ratings as economists or statisticians in government.)

JAMES K. HALL, *Adviser*, 318 Savery Hall

The Department of Economics, in cooperation with the College of Business Administration, the Department of Political Science, the Department of Sociology, and the Department of Psychology, has outlined a curriculum to meet the growing need for trained men and women in government service.

Basic courses are provided in the social sciences during the first three years of undergraduate work to equip selected students possessing a high order of scholarship with a sound philosophy of government and with a scientific attitude and method of approaching social and economic problems. Not later than the end of the third year the student will select a field of interest for specialization in the fourth and graduate years.

Students must maintain a grade standard of not less than 3.0 ("B").

At the beginning of the third year the student majoring in the curriculum in government service shall consult with his adviser in the selection of a program suited to his objectives. The adviser will in effect be the major professor in whose field the student will concentrate. At the end of the fourth year a bachelor of arts degree with a major in economics will be awarded. At the successful conclusion of the fifth year a certificate of completion of the course in government service will be granted.

The following course requirements, in addition to the graduation requirements of the College of Arts and Sciences, are indicated for each year of the curriculum.

FIRST AND SECOND YEARS

In meeting the general requirements of the College of Arts and Sciences, courses meeting Group I requirements should include Speech 20. In addition, courses meeting Group II requirements should include Sociology 1 or 100, History 7, Political Science 1, Psychology 1.

Other requirements are Economics 10; Business Administration (Accounting) 62 and 63; and Business Administration (Statistics) 60.

THIRD AND FOURTH YEARS

Economics 100, 102, 120, 130, 132, 140, 150, 170, 190; Political Science 153 (Constitutional Law); 154 (Administrative Management); 163 (State and Local Government and Administration); 167 (Administrative Law).

FIFTH YEAR

In the fifth year the program of the student will be planned with reference to the student's special objective and needs. If possible, the course work for the student in his fifth year will be so arranged as to provide a quarter of internship with some governmental agency.

The work done in the fifth year may be applied toward a master's degree and those who have met all the requirements for that degree by the end of the fifth year will receive it at that time.

Teaching Major or Minor in the College of Education

Students choosing economics as either their teaching major or minor should consult with the curriculum adviser of the department of economics with regard to a proper selection of courses. For a major the requirements are the same as those for general economics majors. For a minor 20 credits are required, including Econ. 10 and Econ. 100.

ENGLISH

Composition and Advanced Writing, English Language and Literature, and General Literature

ROBERT B. HEILMAN, *Executive Officer*, 115 Parrington Hall

DEGREE: Bachelor of Arts

Note: English 1, 2, and 3 may not be counted for a major or minor.

A major in English requires 50 credits.

For students concentrating in literature the minimum of 50 credits shall include courses 57 or 58; 151; 170; 168 or 144; 177 or 174; 161 or 162 or 163. The required 50 credits shall include an additional 10 credits earned in courses which continue two of the upper-division courses in the preceding list. The remaining credits may be secured in upper-division courses in literature, advanced writing, and foreign literature in translation.

For students concentrating in advanced writing, the minimum of 50 credits shall include courses 58; 64 or 170; 177 or 174; 148 or 149; 104 or 106 or 166; at least 6 credits from the sequences 51, 52, 53; 61, 62, 63; 128, 129, 130; 77, 78, 79; and elective credits in advanced writing. English literature, or related fields. Fifteen of these elective credits shall be in advanced writing courses numbered above one hundred, and 10 of these 15 credits shall be in consecutive courses.

Professional certification for secondary school teaching requires, as a part of or in addition to the above major, Education 75H; Speech 42; English 117 or 187; and 3 credits of advanced writing. A 2.2 grade-point average in upper-division English is required.

Two minors are offered students desiring a secondary certificate. The first minor requires 36 credits: viz., Speech 42; English 117 or 187; at least 3 credits in advanced writing; and electives in literature (including Shakespeare and nineteenth-century English and American literature) to complete the number of required credits. The second minor requires 24 credits: viz., Speech 42; one course each in advanced writing and literature; and sufficient credits to complete the required number, preferably including one of these sequences: (1) 64, 65, 66; (2) 57, 58, 117 or 187.

A major in general literature requires a reading knowledge of two foreign languages; satisfaction of requirement is determined by departments offering instruction in languages selected. General Literature 101 and 191, 192, 193, and sufficient other literature courses to make a total of 36 credits are also required.

Preparatory to his major, the student must earn 18 credits in lower-division courses in either English, Latin, Far Eastern, or Romance literature.

FAR EASTERN AND SLAVIC LANGUAGES AND LITERATURE

GEORGE E. TAYLOR, *Executive Officer*, 406 Thomson Hall

DEGREE: Bachelor of Arts

Majors of three types are offered:

1. A general major requires Far Eastern 10; an additional 45 credits in Far Eastern subjects (not including language courses, which are optional); and a strong concentration of elective credit in some one of the social sciences or humanities.

2. A major in a special Far Eastern field requires Far Eastern 10; 30 credits in either the Japanese, Korean, Chinese, or Russian language; 15 credits in other Far Eastern subjects; and a concentration of 20 or more credits in some one of the social sciences or humanities.

3. A linguistic major requires Far Eastern 10; 45 credits in either Japanese, Chinese, Russian, or Korean; and 20 credits in courses dealing with the civilization and history of the people by whom the elected language is spoken and of the Far East in general. This major is offered primarily for students planning to enter professional language work or to continue the studies in Far Eastern languages or literature in the graduate school. Additional courses required as preparation for graduate work should be selected with the assistance of the department adviser.

Teaching Minor in the College of Education

For a teaching minor in Far Eastern the following courses must be presented: Far Eastern 10; 5 credits selected from Far Eastern 147, 157, 167; 5 credits selected from Far Eastern 40, 41, 143, and 3 credits of approved electives—a total of 18 credits.

A grade-point average of 2.2 in the Far Eastern courses is required for a teaching minor.

FISHERIES

W. M. CHAPMAN, *Director*, 1 Fisheries Building

Elective Curriculum

DEGREE: Bachelor of Science

The requirements, other than those here specified, will be as for elective departmental majors in the College of Arts and Sciences, page 100, subject to the approval of the School.

At least 42 credits must be completed in fisheries courses for the major.

Prescribed Curriculum

DEGREE: Bachelor of Science in Fisheries

There is required for graduation from the School of Fisheries a grade-point average of 2.5 in fisheries courses and in all other courses.

FIRST YEAR*

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Engl. 1. Composition	3	Engl. 2. Composition	3	Engl. 3. Composition	3
Zool. 1. Animal Biology	5	Zool. 2. General Zoology	5	Chem. 23. Qual. Anal.	5
Chem. 1 or 21. General	5	Chem. 2 or 22. General	5	Fish. 110	1
Fish. 108	1	Fish. 109	1	Electives	7
P.E. 10 or 75. Health Educ.	2	Electives	2	P.E. Activity	+
P.E. Activity	+	P.E. Activity	+	Mil. Sci. or Nav. Sci.	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+		
	16+		16+		16+

SECOND YEAR*—Options A and B

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
†German or French	5	†German or French	5	Zool. or Fish. (See Options A or B)	5
Zool. or Fish. (See Options A or B)	5	Zool. or Fish. (See Options A or B)	5	Math. 13, Chem. 144, or Chem. 111 (See Options A or B)	5
Math. 4 or Chem. 131 (Organic). (See Options A or B)	5	Math. 5 or 7, or Chem. 132	5	Electives	5
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+
	15+		15+		15+

SECOND YEAR*—Option C

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Foreign Language	5	Zool. 100	5	Economics 10	5
Home Economics 104	2	Language	5	Math. 13	5
Chem. 111	5	Chem. 128	2	Chem. 129	2
Chem. Engr. 51	2	Chem. 131	3	Chem. 132	3
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+
	14+		15+		15+

THIRD AND FOURTH YEARS

One of the following options should be chosen, for each of which the following further requirements are made. The School of Fisheries should be consulted for choice of electives and modification of requirements.

* These requirements are listed in the order in which it is recommended that they be taken. They may be postponed and subjects required in the third and fourth years may be substituted, on approval by the School of Fisheries.

† Any language substitution must be approved by the School of Fisheries.

All options require 10 credits in the Social Sciences, not more than 102 credits in any two departments, and a minimum of 42 credits in fisheries among which shall be included Fish. 101, 108, 109, 110, 195.

Option A. *Commercial Fishery Management.* Fish. 105 or 106, 125, 126, 127, 156, and 157. Math. 4, 5, 41, 42 (or 107, 108, 109), 13 or 185; Zool. 156, 174.

Option B. *Freshwater Fishery Management.* Fish. 105 or 106, 151, 152, 153; Chem. 144 or 161-162; Microbiology 101; Zool. 156, 173; Math. 4, 5, 13 or 185.

Option C. *Fisheries Technology.* Fish. 105 or 106, 180, 181, 184, 185, 186; Chem. 161, 162; Microbiology 101, 131.

Recommended Electives: In all options any fisheries, zoological, or oceanographical course may be counted as an elective. The following additional electives are recommended: Econ. 10 (General Economics), B.A. 57 (Bus. Law) 101, 166; Chem. 109, 110, or 111 (Quantitative Analysis); 132, 133 (Organic); 161-162 (Biological); Math. 185 (Biometrics), 41, 42, 43 or 107, 108, 109 (Calculus); Microbiology 101 (General), 131 (Industrial); Physics 1, 2, 3, or 4, 5, 6 (General); Geology 1 (Survey), or 6 (Physiography), or 7 (Historical); Botany 1, 2, or 3 (Elementary); Geography 7 (Economic), 11 or 111 (Weather and Climate); Speech 40, Philosophy 5, Psychology 122 (industrial).

FOOD TECHNOLOGY*

H. C. DOUGLAS, *Chairman,* 402 Johnson Hall; B. S. HENRY, E. R. NORRIS, E. J. ORDAL, J. I. ROWNTREE

DEGREE: Bachelor of Science in Food Technology

A major in food technology provides training for students who intend to enter the field of food production as control or research laboratory workers. Women interested in home economics research or in teaching food and nutrition in college should follow this curriculum. Emphasis may be placed upon microbiology, chemistry, or food utilization, by selection of various optional courses in the fourth year. Furthermore, an elective course may be substituted for any prescribed course with the consent of the committee members representing the department in which the eliminated course is given.

Group options (a) and (b) in the third and fourth years are designed to provide specialization. Group (a) is for students primarily interested in laboratory work concerned with food production while group (b) is for those expecting to teach nutrition in college or to carry on work in laboratories conducting food-preparation studies.

For all food technology majors, a grade-point average of 2.5 in microbiology, chemistry, and home economics, and a grade-point average of 2.5 in all other subjects are required for graduation.

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chem. 1 or 21. General	5	Chem. 2 or 22. General	5	Chem. 23. Qual. Analysis	5
English 1. Composition	3	English 2. Composition	3	Physics 3. General	5
Physics 1. General	5	Physics 2. General	5	Math. 1 or 4	5
P.E. 10 or 75. Health Ed.	2	Elective	2	English 3. Composition	3
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chem. 131. Organic	3	Chem. 132. Organic	3	Chem. 111. Quantitative Analysis	5
Chem. 128. Organic Lab.	2	Chem. 129. Organic Lab.	2	Microbiology 100. Fundamentals	6
Zoology 1. General, *or* Bot. 1. Elementary	5	Zoology 2. General, *or* Bot. 2. Elementary	5	Electives	4
Group Option		*Group Option*		P.E. Activity	+
(a) Math. 4 or 5	5	(a) Math. 5 or 6	5	Mil. Sci. or Nav. Sci.	+
(b) H.E. 15	5	(b) H.E. 115	3		
P.E. Activity	+	Electives	2		
Mil. Sci. or Nav. Sci.	+	P.E. Activity	+		
		Mil. Sci. or Nav. Sci.	+		

* In College of Arts and Sciences.

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chem. 161. Biochem.	5	Chem. 162. Biochem.	5	Chem. 104. Food Anal.	4
Soc. Science Elective	5	Chem. 140. Elem. Physical	3	Chem. 141. Elem. Physical	3
Group Option		*Group Option*		Bot. 115. Yeasts & Molds.	5
(a) Electives	5	(a) Electives	7	*Group Option*	
(b) H.E. 107. Nutrition	5	(b) H.E. 108. Nutrition	3	(a) †H.E. 187. Food Prep.	3
		Electives	4	(b) †H.E. 107. Nutrition.	3

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Microb. 130. Industrial	5	Microb. 131. Industrial	5	Microb. 199. Problems	5
Optional‡	5	Optional‡	5	*Group Option*	
Group Option		*Group Option*		(a) Electives	5
(a) Chem. 121. Industrial.	5	(a) Chem. 122. Industrial.	5	Chem. 123. Industrial	5
(b) Elective	5	(b) Elective	5	(b) Electives	10

† Offered alternate years.
‡ 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 technique, histology, entomology, calculus, experimental cookery.

GENERAL LITERATURE

(See English, page 112.)

GENERAL STUDIES

W. G. LUTEY, *Chairman*, 213 Denny 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 department curricula. To be admitted to this division the student must have maintained at least a "C" average in his preceding educational experience, and must complete his transfer not later than his third quarter preceding graduation.

The requirements for graduation in General Studies are:

1. 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, and the formulation of an approved schedule of courses.

2. Completion of at least 70 credits in the chosen field or subject. The bachelor of arts degree is awarded when the major is in Group I or II; the bachelor of science, when the major is in Group III.

3. A thesis giving evidence of the student's competence in his major field.

In addition to the flexible programs made out to supply the special needs of individual students, there are at present organized curricula for Advertising and Art, Anthropology of the Americas, Art and Ceramics, Home Relations, Latin-American Studies, Laboratory Technology, Literature and Society, Music for Radio, Personnel Work, Public Relations, Radio Production and Management, School and Society (for teachers), Scientific Management. Curricula developed in General Studies also give admission to the School of Librarianship and the Graduate School of Social Work.

Latin-American Studies. The major in Latin-American Studies is directed by an interdepartmental committee (C. García-Prada, chairman). It normally includes the following courses: Anthropology 52 (Social), 65 (South America); Economics 170 (Economic Principles of Foreign Trade), 173 (Foreign Trade of Latin America); Geography 7 (Economics), 105 (South America); History 41, 42 (Latin America and the Caribbean); Political Science 123 (International Relations of the Western Hemisphere); Sociology 149 (Latin America); Spanish 101, 102, 103 (Composition and Conversation, Commercial), 104, 105, 106 (Survey), or Portuguese 100; and 12 elective credits in Latin-American literature, including Spanish 115, 116, 117.

GEOGRAPHY

HOWARD H. MARTIN, *Executive Officer*, 406 Smith Hall

DEGREE: Bachelor of Arts

Major in Geography

A major requires 50 credits including Geography 1, 7, or 70; 2; 11; 102, 103, 104; 105 or 109; 106 or 107. Electives should be approved by the department.

Teaching Major or Minor in Geography in the College of Education

A major is the same as in the College of Arts and Sciences, except that courses 110 and 125 replace 2.

A first minor requires 26 credits including courses 1, or 7; 102, 110, 125, 170.

GEOLOGY

G. E. GOODSPEED, *Executive Officer*, 42 Johnson Hall

Students may offer either the elective curriculum or the prescribed curriculum. A grade-point average of at least 2.5 shall be required in the beginning sequence, 5, 6, 7, and 8, and for admission to any other advanced course in geology. A grade-point average of 2.5 in all courses in geology and 2.2 in other courses shall be required of majors for graduation. Majors will be required each quarter to read two books of outstanding merit from a list prepared by the department.

Elective Curriculum

DEGREE: Bachelor of Science

Majors offering the elective curriculum must fulfill the group requirements of the College of Arts and Sciences and should conform closely with respect to background courses as listed under the prescribed curriculum. The following courses are required, unless the department grants permission to offer substitutes. In general the distribution should be as follows:

Second Year	*Credits*	*Third Year*	*Credits*	*Fourth Year*	*Credits*
Geol. 5. Rocks & Minerals	5	Geol. 108. Structural	5	Geol. 100. History of Geol.	3
Geol. 6. Elem. Physiog.	5	Geol. 123. Optical Miner.	5	Geol. 131. Stratig.	5
Geol. 7. Historical Geology	5	Geol. 124. Petrog.-Petrol.	5	Geol. 132 or 130. Invert. Paleon. or Gen. Paleon.	5
Geol. 121. Mineralogy	5	Geol. 125. Petrog.-Petrol.	5	Geol. 112 or 113. Physiog.	
P.E. Activity	+			U. S.	5
Mil. Sci. or Nav. Sci.	+		20		18
	20				

For those who are interested in stratigraphy or oil geology, the following additional courses are recommended:

Third Year	*Credits*	*Fourth Year*	*Credits*
Geol. 130. General Paleon.	5	Geol. 126. Sediment. Petrog.	3
Geol. 133. Mesozoic Geol.	5	Geol. 135. Ammonites	2
Geol. 134. Tertiary Geol.	5	Geol. 144. Field Methods	5
Geol. 143. Advanced Structural	5		10
	20		

For those who are interested in ore deposits, the following additional courses are recommended:

Third Year	*Credits*	*Fourth Year*	*Credits*
Mining 151. Elementary Mining	3	Geol. 127. Ore Deposits	5
Met. 101. Fire Assaying	3	Geol. 129. Advanced Ore Deposits	3
Geol. 144. Field Methods	5	Geol. 143. Advanced Structural	5
	11		13

Prescribed Curriculum

DEGREE: Bachelor of Science in Geology

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chem. 1 or 21. General	5	Chem. 2 or 22. General	5	Chem. 23. Qual. Analysis	5
Math. 31. Freshman Engr.	5	Math. 32. Freshman Engr.	5	Math. 33. Freshman Engr.	5
G.E. 1. Engr. Drawing	3	G.E. 2. Engr. Drawing	3	G.E. 3. Draft. Problems	3
Engl. 1. Composition	3	Engl. 2. Composition	3	P.E. Activity	+
P.E. Activity	+	P.E. Activity	+	Mil. Sci. or Nav. Sci.	+
Mil. Sci. or Nav. Sci.	+	Mil. Sci. or Nav. Sci.	+	Electives	2
	16+		16+		15+

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Geol. 5. Rocks & Minerals	5	Geol. 6. Elem. Physiog.	5	Geol. 7. Hist. Geology	5
Physics 1. General	5	Physics 2. General	5	Physics 3. General	5
Electives	5	Engl. 3. Composition	3	Geol. 121. Mineralogy	5
P.E. Activity	+	P.E. 75 (Men) Health Ed.	2	P.E. Activity	+
Mil. Sci. or Nav. Sci.	+	G.E. 21. Plane Surveying	3	Mil. Sci. or Nav. Sci.	+
	15+	P.E. Activity	+		15+
		Mil. Sci. or Nav. Sci.	+		
			15+		

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Geol. 123. Optical Miner.	5	Geol. 124. Petrography	5	Geol. 125. Petrography	5
Geol. 108. Structural Geol.	5	Geol. 130. Paleontology	5	Geol. 144. Field Methods	5
Group II Electives	5	Geol. 131. Stratigraphy	3	Geol. 132. Invertebrate Paleontology	5
	15	Group I Electives	3		15
			16		

Summer Field Course—Geology 200S—15 credits

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Geol. 100. Hist. of Geol.	3	Geol. 127. Ore Deposits	5	Professional Electives	10
Group I Electives	5	Group I Electives	2	Foreign Language	5
Group II Electives	3	Group II Electives	2		15
Foreign Language	5	Foreign Language	5		
	16		14		

Adherence to this program, including the Summer Field Course, enables a student to graduate at the end of the winter quarter of the fourth year. It is further suggested that Group I and Group II requirements be met during the summer school between the first and second (or the second and third) years, in order to allow time for additional professional electives which would apply towards graduate work.

Teaching Major or Minor in the College of Education

A major requires 36 credits, including courses 5 or 105, 6 or 106, 7 or 107, 112, 113.

A minor requires 20 credits, including courses 1, 5 or 105, 6 or 106, approved electives.

GERMANIC LANGUAGES AND LITERATURE

CURTIS C. D. VAIL, *Executive Officer,* 111 Denny Hall

DEGREE: Bachelor of Arts

For the major 36 credits are required, including courses 7, 117, 118, 119, 120, 121, 122, and 128; 31 credits must be chosen from the departmental offerings numbered 117 or above. Majors are not permitted to count scientific German, courses in English translation, or the first 18 credits of elementary German.

For the minor 26 credits are required beyond the first 18 credits of elementary German. At least 20 credits must be in departmental offerings numbered 117 or above, and must include the courses required for the major.

Students preparing for library or other work not requiring knowledge of the spoken language may substitute literary courses in German (not courses offered in translation, however) in lieu of the departmental major requirements, German 117, 118, 119, 120, 121, 122, 128. These latter are demanded of prospective teachers.

Teaching Major or Minor in the College of Education

For the major and minor the requirements are the same as for the major in the College of Arts and Sciences.

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

All students who wish a major or minor recommendation in German must present Education 75L.

HISTORY

WILLIAM STULL HOLT, *Executive Officer,* 308B Smith Hall

DEGREE: Bachelor of Arts

Majors in history shall offer for the Bachelor of Arts degree 50 credits in history, of which at least 25 credits must be in upper-division courses. History 1 and 2, Medieval and Modern European History, and a survey in American history, History 7, are the only required courses.

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 and 2, 7, 72-73, and 164. The remaining credits are to be taken in upper-division courses.

For the teaching minor, a minimum of 30 credits in history is required, including History 1 and 2, 7, and 164. The remaining credits are to be taken in upper-division courses.

A grade-point average of 2.5 in the courses in history is required for teaching majors and minors.

HOME ECONOMICS

JENNIE I. ROWNTREE, *Director,* 201 Raitt Hall

The School of Home Economics offers professional and nonprofessional curricula for its majors and recommends separate courses and sequences for students in other departments. The professional curricula are intended for specialists in the different fields; the nonprofessionl curricula are less intensive and permit a wider choice of electives.

A minimum of 44 credits in the humanities and social sciences is necessary for graduation in all curricula. This includes certain courses listed in the prescribed curricula.

Courses for Students in Other Departments

Recommended electives for nonmajors are: 25, 41, 83, 84, 104 or 107, 109 or 144, 141, 145, 146 or 147.

For a Home Economics Minor at least 32 credits in home economics, including

the following, are required: 15 or 83, 12 or 84, 104 or 107, 109, 112, 115, 145, 146 or 147, 190.

For a Textile and clothing Minor: 12, 25, 109, 112, 113, 114, 145, 147, and prerequisites.

For each of these minors a grade-point average of 2.5 in home economics is required.

Nonprofessional Curricula

DEGREE: Bachelor of Science

General Major. Those who wish a broad background in home economics without specialization will include the following with electives approved by the School.

FIRST YEAR

	Credits
Engl. 1, 2, 3. Composition	9
H.E. 7. Orientation	1
H.E. 12. Clothing	5
H.E. 15. Food	3
H.E. 25. Textiles	5
P.E. 10. Health Ed.	2
Chem. 3-4 or 5-6. General	10
Art 9. Design	3
Electives	7
P.E. Activity	+
	45+

SECOND YEAR

	Credits
H.E. 112. Costume Design	3
H.E. 147. Home Furn.	5
Soc. 1. Survey	5
Psych. 1. General	5
Econ. 10. Introduction	5
Electives	22
P.E. Activity	+
	45+

THIRD YEAR

	Credits
H.E. 107. Nutrition	5
H.E. 144. Family Econ.	5
H.E. 141. House. Mgmt.	3
H.E. 145. Family Relationships	3
H.E. 148. Home Mgmt. House	2
H.E. 115. Adv. Food	5
H.E. 190. Child Care	3
Zool. 8. Physiology	5
N.S. 101	3
Electives	11
	45

FOURTH YEAR

	Credits
Electives	45
Suggested electives: Home Economics, Physics 90, Micro. 101, Journalism, Psych. 2 or 101, Education, Art	

DEGREE: Bachelor of Arts

Textiles, Clothing, and Art Major

FIRST YEAR

	Credits
Engl. 1, 2, 3. Composition	9
H.E. 7. Orientation	1
H.E. 12. Clothing	5
H.E. 25. Textiles	5
Chem. 3-4 or 5-6. General	10
Art 5. Drawing	3
Art 9, 10. Design	6
P.E. 10. Health Ed.	2
Electives	4
P.E. Activity	+
	45+

SECOND YEAR

	Credits
H.E. 147. Home Furnishing	5
H.E. 112. Costume Design	3
Hist. 1, 2. Medieval Europe	10
Soc. 1. Survey	5
Psych. 1. General	5
Econ. 10. Introduction	5
Art 6. Drawing	3
Art 11. Design	3
Art 51. Figure Sketching	1
Electives	5
P.E. Activity	+
	45+

THIRD YEAR

	Credits
H.E. 113, 114. Costume Design	6
H.E. 144. Fam. Econ.	5
H.E. 145. Family Relationships	3
Phil. 1. Introduction	5
Art 169, 170. Costume Design and Illustration	4
Electives	22
	45

FOURTH YEAR

	Credits
H.E. 133. Hist. of Cos.	5
H.E. 188. Adv. Textiles	3
6 credits from: H.E. 101 (2), 102 (2) Needlecraft, H.E. 189 (2) Hand Weaving, H.E. 198 (3) Hist. Tex.	
Option 10 further credits in art	
Suggested electives H.E. 160, 161 or 10 credits in upper-division business administration	21
	45

Professional Curricula

Teacher Training for Vocational Education

Degree: Bachelor of Science in Home Economics

In this curriculum a major and one minor are included in home economics and a second minor is selected in another department. For a Three-Year Secondary Certificate a teacher must have 225 credits with 28 in education and 15 in contemporary social problems including Washington State history. Students must maintain a 2.2 grade-point average.

FIRST YEAR

	Credits
Engl. 1, 2, 3. Composition	9
H.E. 7. Orientation	1
H.E. 12. Clothing	5
H.E. 15. Food	3
H.E. 25. Textiles	5
Art 9. Design	3
Chem. 3-4 or 5-6. General	10
P.E. 10. Health Ed.	2
Psych. 1. General	5
Electives	2
P.E. Activity	+
	45+

SECOND YEAR

	Credits
H.E. 112. Costume Design	3
H.E. 115. Adv. Food	5
H.E. 147. Home Furn.	5
Econ. 10. Introduction	5
Soc. 1. Survey	5
Educ. 1. Orientation	2
Nurs. Ed. 5. Home Nursing	3
Chem. 137. Organic	5
Zool. 8. Physiology	5
Physics 90. Home	5
Electives to include minor	2
P.E. Activity	+
	45+

THIRD YEAR

	Credits
H.E. 107, 108. Nutrition	8
H.E. 113. Costume Design	3
H.E. 116. Meal Planning	3
H.E. 141. Home Management	3
H.E. 144. Family Economics	5
H.E. 145. Family Relationships	3
Educ. 9. Psych. Ed.	3
Educ. 70. H. S. Intro.	5
Educ. 90. Meas. Ed.	2
Micro. 101. Bacteriology	5
Electives (minor)	5
	45

FOURTH YEAR

	Credits
H.E. 114. Costume Design	3
H.E. 190. Child Nutrition	3
Nurs. School 101. Child Development	3
Educ. 75NA. Special Methods	3
Hist. 164. History of Washington	5
Electives (minor)	28
	45

FIFTH YEAR

	Credits
Educ. 71-72. Cadet Teaching	5-3
H.E. 148. Home Management House	3
H.E. 195. Special Problems	*
Educ. 30. State Manual	2
Educ. 60. Prin. Ed.	3
Educ. 110. Ed. Soc.	3

Exceptions to the above curricula will be made for certain students who wish to teach clothing and home furnishing but not foods and nutrition and also for those who prefer foods and management but not clothing. Beginning work in both foods and clothing is required and the same total number of home economics credits as for above curriculum.

Institution Administration

Degree: Bachelor of Science in Home Economics

FIRST YEAR

	Credits
Engl. 1, 2, 3. Composition	9
H.E. 7. Orientation	1
H.E. 15. Food	3
H.E. 26. Textiles	3
Chem. 3-4 or 5-6. General	10
Art 9. Design	3
P.E. 10. Health Ed.	2
Psych. 1. General	5
Electives	9
P.E. Activity	+
	45+

SECOND YEAR

	Credits
Chem. 137. Organic	5
Soc. 1. Survey	5
Econ. 10. Introduction	5
H.E. 115. Adv. Food	5
H.E. 131. Cloth. Sel.	2
H.E. 141. Home Mgmt.	3
H.E. 147. Home Furn.	5
Zool. 8. Physiology	5
Physics 90. Home	5
Electives	5
P.E. Activity	+
	45+

* Credits to be arranged.

THIRD YEAR

	Credits
H.E. 107, 108. Nutrition	8
H.E. 116. Meal Planning	3
H.E. 144. Family Economics	5
H.E. 145. Family Relationships	3
H.E. 148. Home Management House	2
Micro. 101. Bacteriology	5
Electives	19
	45

FOURTH YEAR

	Credits
H.E. 121, 122, 123, 124	16
H.E. 190. Child Nutrition	3
H.E. 191. Diet Therapy	3
Educ. 75NB. Teach. Inst. Admin.	5
N.S. 101. Child Development	3
Chem. 144. Biological	5
Electives	10
	45

For membership in the American Dietetic Association, the student must follow this curriculum with a year's training in an approved administrative or hospital dietitian course.

Textiles, Clothing, and Art

Degree: Bachelor of Arts in Home Economics

FIRST YEAR

	Credits
Engl. 1, 2, 3. Composition	9
H.E. 7. Orientation	1
H.E. 12. Clothing	5
H.E. 25. Textiles	5
Chem. 3-4 or 5-6. General	10
Art 5. Drawing	3
Art 9, 10. Design	6
P.E. 10. Health Ed.	2
Electives	4
P.E. Activity	+
	45+

SECOND YEAR

	Credits
H.E. 147. Home Furnishing	5
H.E. 112. Costume Design	3
Hist. 1, 2. Medieval Europe	10
Soc. 1. Survey	5
Psych. 1. General	5
Econ. 10. Introduction	5
Art 6. Drawing	3
Art 11. Design	3
Art 51. Figure Sketching	1
Electives	5
P.E. Activity	+
	45+

THIRD YEAR

	Credits
H.E. 113, 114. Costume Design	6
H.E. 144. Family Economics	5
H.E. 145. Family Relationships	3
Art 169, 170, 171. Costume Design and Illustration	6
Phil. 1. Introduction	5
Electives	20
	45

FOURTH YEAR

	Credits
H.E. 133. History of Costume	5
H.E. 160, 161. Advanced Costume Design.	10
H.E. 188. Advanced Textiles	3
H.E. 198. Historic Textiles	3
Electives	24
Art to complete 30 credits; Home Economics chosen from 101, 102, 189.	
	45

Design for Apparel Manufacturing

Degree: Bachelor of Arts

A curriculum which correlates work in the School of Home Economics, The School of Art and the College of Business Administration is offered to qualified students to equip them with the knowledge and skills essential to designing for apparel manufacturing. Practical experience secured by working in factories is required. Skill in typing is highly desirable.

Freshman and sophomore requirements same as for Textile, Clothing, and Art major.

THIRD YEAR

	Credits
H.E. 113, 114. Costume Design	6
H.E. 144. Family Economics and Finances	5
H.E. 145. Family Relationships	3
Art 169, 170. Costume Design and Illustration	4
B.A. 106, 133. Marketing and Retailing	10
Art 129. Appreciation of Design	2
Electives (Soc. Sci. and Humanities)	15
	45

FOURTH YEAR

	Credits
H.E. 133. History of Cost	5
H.E. 160, 161. Adv. Costume Design	10
H.E. 188. Adv. Textiles	3
H.E. 198. Historic Textiles	3
B.A.	10-15
From B.A. 62, Acct. Prin. (5); B.A. 165, Human Relations in Industry (5); B.A. 167, Personnel Mgmt. (5); B.A. 135, Adv. Retailing (2); B.A. 138, Adv. Mkt. (5)	
B.A. 180. A, B, C. Professional Pract. in Apparel Industry (2 cr. each)	6
Electives	3-8
	45

Combinations for Specialized Work

DEGREE: Bachelor of Science in Home Economics

For the field of work below, the required home economics courses with their science prerequisites and supporting subjects are: 7, 15, 107-108, 115, 116, 141, 144, 145, 147, 148, 181, and 190.

Home Economics and Business. Students interested in this field will select 12 additional credits from the following: H.E. 126, 187, 191; Chem. 144, 161, 162; Speech 20; and journalism (6-11 credits).

Journalism and Home Economics. For a major in home economics and a minor in journalism, the courses listed above plus Journalism 51, 84, 130, 134, 165, 181,-2, or 3, 199 are required. For a minor in home economics with a major in journalism the required courses are H.E. 15 or 83, 104, 12 or 131, 144, 146, and one of the following courses: 145 or 190.

Nutritionist with Social or Public Health Agency. The requirements for this field are: H.E. 121, 191; Nursery School (2 credits); and at least 9 credits from the following courses in the Graduate School of Social Work: 192, 193, 195, 196.

JOURNALISM

H. P. EVEREST, *Director,* 202 Lewis Hall

DEGREE: Bachelor of Arts

Admission. Students, to qualify as third-year majors in journalism, must complete 90 academic credits, with an over-all grade-point average of 2.5, including the lower-division requirements of the college, plus the required six quarters in physical education activity and Military or Naval Science courses. 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.

Sixth Quarter Conference. Students planning to major in journalism must have a conference with the faculty adviser of the School of Journalism before being enrolled in Third-Year Journalism. This will normally take place when the student is in his sixth quarter.

Transfers. Students planning to transfer to the School of Journalism from other schools are urged to do so at the beginning of their last quarter as sophomores. This will enable them to satisfy premajor requirements and enroll as regular third-year majors the following fall. Those unable to do this will be asked to satisfy premajor requirements and take senior electives in the junior year and to take the third-year non-elective professional sequence as seniors. Rarely will they be permitted to enter the third-year sequence their first quarter in the University.

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 may not be counted toward an advanced degree.

Typewriting. All written work in the School of Journalism must be done on a typewriter. An average speed of 45 words per minute is required.

Curriculum

A professional major in journalism is required to meet the College of Arts and Sciences lower-division requirements and to offer 11 credits of specified prejournalism; 45 credits of additional journalism; 15 credits of English (11 of which must consist of English 1, 2, and 65. English 67 and 69 are recommended); and 20 credits in one of the fields of sociology, political science, psychology, history, home economics, geography, economics, or business administration. By special arrangement with the head of the department concerned, a student may elect his minor in a field other than these 8 above specified. If a student so desires he will find it possible to elect more than one minor, although only one is required.

An average grade of "B" or better must be earned in all journalism subjects.

The required courses for the first two years are: Journ. 51, 84, 130; Engl. 1, 2, 65; Geog. 70; Psych. 1; Pol. Sci. 1 and 174; Economics 10; Hist. 2, 7; Speech 20; Soc. 1; Science courses (10 cr.) one of which (5 cr.) must be a laboratory science (Physics 10 is recommended for survey science); Physical Eduction 10 or 75 and an activity course each quarter, and Military or Naval Science.

Those specializing in public relations are required to take a part of third-year Journalism, 26 required credits in the social sciences and 10 credits of preferred electives in the social sciences for a degree. The required courses are Journ. 147, 148, 149, 150, 153, 166 and 167; Soc. 31 or B.A. 60 or Psych. 109; Psych. 145 or Soc. 162; Soc. 163; B.A. 115, 165, and Econ. 140.

Those specializing in advertising and management are required to take B.A. 106, Marketing, and Art 5, Drawing, in lieu of the regular prejournalism requirements of Geog. 70, Hist. 2, and Pol. Sci. 174. They are also urged to take B.A. 57, Business Law. There is no exception to these requirements without the special permission of the Director of the School of Journalism. Students in the advertising sequence are required to take B.A. 133, Retailing, in their senior year.

Third Year—nonelective. The required courses in Editorial and Advertising are Journ. 147, 148, 149, 150, 151, 152, 153, 154, and 181, or 182 or 183; Geog. 177 and Econ. 153 or B.A. 115.

The Third Year starts at the beginning of the autumn quarter and concludes at the end of the spring quarter. No grades or credits will be awarded to students doing satisfactory work until the end of the year. At the end of each quarter students whose work is unsatisfactory will be given grades ("C," "D," or "E") and such journalistic credits as they may have earned. They must then arrange to choose another major.

Third-Year Journalism is divided into three sequences, Advertising, Editorial, and Public Relations. Journalism majors should decide as early as possible in the sophomore year which sequence to elect.

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

Fourth Year. Journalism 190 and 191 are required courses for seniors who have completed the editorial sequence. Advertising majors must complete Journalism 192 in their senior year. The major and his adviser will determine the schedule of courses.

Students wishing to minor in Journalism regardless of major (except in the College of Education) must include the following courses in their minor: Journ. 51, 84, and eleven credits to be designated by agreement with the Director of the School of Journalism.

Teaching Major or Minor in the College of Education

Major students in the College of Education may obtain a minor in journalism (33 cr.) by completing the following courses: Journ. 51, 84, 130, 181, 125 (or Educ. 75G), 165, and History of Journalism (3), Law of the Press (3), Social Implications of Journalism (3), Printing Processes (3), Photography (1), Printing Lab. (1), to be scheduled by arrangement with the Director of the School of Journalism.

A teaching minor (18 cr.) may be obtained by completing the following courses: Journ. 51, 84, 130, 181, 125a (or Educ. 75G) and Printing Processes (3) to be scheduled by arrangement with the Director of the School of Journalism.

A grade-point average of 2.5 in all journalism courses must be maintained.

MATHEMATICS

R. M. WINGER, *Executive Officer,* 245 Physics Hall

Prerequisites for any major or minor in the Department of Mathematics are: ½ unit advanced algebra, ½ unit solid geometry in high school or university. No grade lower than C in mathematics courses will be accepted for any major or minor.

Students may offer either the elective curriculum or one of the prescribed curricula.

Elective Curriculum

DEGREE: Bachelor of Arts

For the degree of Bachelor of Arts with a major in mathematics, 48 credits in mathematics are required, including courses 4, 5, 6, 107, 108, 109 and 18 credits in upper-division electives.

Prescribed Curricula

DEGREE: Bachelor of Science

For the degree of Bachelor of Science with a major in mathematics, 60 credits in mathematics are required, including courses 4, 5, 6, 107, 108, 109, 114, 115 and 24 credits in upper-division electives which must include two complete sequences from the following three: 117-118-119; 190-191-192; 193-194-195. The additional requirements are: in physics, courses 1, 2, 3 or 4, 5, 6; in Groups I and II, 15 credits each. It is suggested that either French or German be elected.

DEGREE: Bachelor of Science with a major in Mathematical Statistics

The work in mathematical statistics has a threefold purpose:

(a) The training of professional statisticians.
(b) Instruction of students who wish to broaden their mathematical studies, or who seek a mathematical background for their work in economics, sociology, genetics, psychology, education, etc.
(c) To conduct research in statistics and provide competent consultation on statistical problems.

To coordinate the three parts of this program and to effect the work of part (c), there has been established within the Department a Laboratory of Statistical Research, of which Z. W. Birnbaum is Director.

For the degree of Bachelor of Science with a major in Mathematical Statistics courses 4, 5, 6, 13, 107, 108, 109, 180, 181, 182, 183, 184 are required. The additional requirements in other fields are the same as in the preceding curriculum except that the student's free electives shall include 10 approved credits in applications of statistical methods.

Teaching Major or Minor in the College of Education

For a teaching major 48 credits in mathematics are required, including 4, 5, 6, 107, 108, 109 and 18 credits in approved electives.

For a teaching minor 25 credits in mathematics are required, including 4, 5, 6 and 10 approved upper-division electives.

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

MEDICAL TECHNOLOGY

LESTER D. ELLERBROOK, *Supervisor,* Health Sciences Building

DEGREE: Bachelor of Science in Medical Technology

The course in medical technology is designed to train young men and women as technicians in the laboratories of hospitals and clinics and in research laboratories.

The course at the University of Washington will consist of three years of training in sciences, comprising chemistry, zoology, physics, physiology, anatomy, histology, and microbiology, followed by 18 months of didactic and practical work under supervision in hospital laboratories. Upon completion of the course the degree of Bachelor of Science in Medical Technology is awarded.

Curriculum

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Engl. 1	3	Engl. 2	3	Engl. 3	3
Chem. 21. Inorganic	5	Chem. 22. Inorganic	5	Zoology 2. General	5
Math. 1 or 4	5	Zoology 1. General	5	Chem. 23. Qualitative	5
P.E. 10 or 75	2	*Electives	2	Anatomy 103	3
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+
	15+		15+		16+

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chem. 131. Organic Lab. 128	5	Chem. 132. Organic Lab. 129	5	Chem. 111. Quantitative	5
Physics 10. Survey	5	Zoology 8. Physiol.	5	Zoology 181. Microtechnic	4
*Electives	5	*Electives	5	*Electives	6
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+
	15+		15+		15+

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Microbiol. 151. General	6	Microbiol. 152. Pathogen.	6	Microbiol. 153. Mycol. and Parasit.	6
Psych. 1. General	5	*Electives	3	Speech 20	5
Biochem. 167†	6	Biochem. 168†	6	*Electives	4
	17		15		15

FINAL 18-MONTH PERIOD

Permission Required

Pathology 121 5	Introduction to Medical Technology—20 hrs. laboratory
Pathology 122—125 ... 6 each	Medical Technology—1 hr. lecture—1 hr. quiz—35 hrs. laboratory
Pathology 126 16	Medical Technology—1 hr. lecture—1 hr. quiz—35 hrs. laboratory

METEOROLOGY AND CLIMATOLOGY

PHIL E. CHURCH, *Executive Officer,* 404B Smith Hall

DEGREE: Bachelor of Science

Majors in the department shall offer for the Bachelor of Science degree 50 credits including 112, 114, 115, 121, 122, 141, 150, 151, 152, and 160. In addition, college mathematics through calculus plus Math. 13, one year of college physics, and at least one regional geography course are required. Recommended foreign language is German.

MICROBIOLOGY

C. A. EVANS, *Executive Officer,* 420 Johnson Hall

DEGREE: Bachelor of Science

A minimum of 36 credits in approved courses in microbiology and satisfaction of the College of Arts and Science group requirements are necessary for graduation.

Ten credits in botany or zoology, Physics 1, 2, 3 (or 4, 5, 6), and Chemistry 21, 22 (or 1, 2), 23, 111, 131 (lab. 128), and 132 (lab. 129) are required of all microbiology majors. These courses and Microbiology 100 should ordinarily be completed during the first two years.

An over-all grade-point average of 2.5 in courses in biology and chemistry shall be required for admission to Microbiology 100 and 151.

* Electives must be limited to the Divisions of Humanities and the Social Sciences so as to satisfy group requirements in the College of Arts and Sciences.

† Biochemistry 161 (5) and 162 (5) may be substituted if Biochemistry 167-168 classes have been filled.

An over-all grade-point average of 2.0 in courses in microbiology shall be required for graduation.

Transfer students entering the undergraduate curriculum shall be considered by a departmental committee, and any examinations deemed necessary shall be required before the student is eligible for sponsorship by the department.

Third and Fourth Years

Group options in third and fourth years: While specific courses are not prescribed, students should plan to take work principally either in industrial or in medical microbiology.

Courses recommended for students in industrial microbiology: Microbiology 120, 130, 131, 135, 199; Botany 108, 115, 144; Chemistry 140, 141, 161; Mathematics 4, 5, 6, 185.

Courses recommended for students in medical microbiology: Microbiology 120, 122, 130 or 131, 151, 152, 153; Anatomy 103; Botany 108; Chemistry 161; Pathology 121 (Hospital laboratory work.) A limited number of students will be permitted to take pathology with the dental students. Histology is a prerequisite to this course. Permission of the Executive Officers of Microbiology and Pathology is required.

MUSIC

STANLEY CHAPPLE, *Director,* Music Building

The School of Music offers five curricula for its majors, one nonprofessional and four professional: (1) Elective; (2) Composition; (3) Instrumental and Vocal; (4) Music Education; (5) Music History and Literature. In addition music courses are offered for students who major in other fields.

The courses in choral and instrumental ensemble are open to any student in the University and may be taken either as credit courses or as activities. An ensemble course may be repeated once with credit.

Admission Requirements

The first year of the state course of study for high school credits in piano, or the equivalent, is required of all entering music majors. Freshmen deficient in piano may be accepted conditionally by demonstrating through examination marked proficiency on other approved instruments. Individual tests in basic skills will determine the acceptance of a student as a music major or as a conditional music major. In Theory the major begins with Music 21. Those unable to enter this course because of inadequate preparation, will take Music 2 and 3. These preparatory courses do not count toward a major or a minor, therefore, the student should plan for additional time to complete the degree, A syllabus showing the entrance requirements for Music 21 may be secured from the secretary of the School of Music.

Before a student may register for upper-division courses in music, he will be required to take a comprehensive examination in the basic two-year theory and music literature courses (21, 22, 23; 27, 28, 29; 71, 72, 73; 77, 78, 79).

Elective Curriculum

DEGREE: Bachelor of Arts Major: Music

In addition to the general requirements of the College of Arts and Sciences (see pages 99, 100) 52 credits in approved music courses are required. Eighteen of these shall be in Music History and Literature; 24 in Composition and Materials; 6 in Instrumental or Vocal Instruction; and 3 in Ensemble. Majors in this elective curriculum must take the basic theory and literature courses (21, 22, 23; 27, 28, 29; 71, 72; 73; 77, 78, 79) listed under the prescribed curriculum for the first two years.

Prescribed Curricula

DEGREE: Bachelor of Arts in Music

In addition to the general requirements of the College of Arts and Sciences (see pages 99, 100) the completion of one of the four music curricula is required.

The work of the first year is essentially the same for all majors:

FIRST YEAR

	Credits
Music. 21, 22, 23. First-year Theory	12
Music 27, 28, 29. Music Literature	6
Instrumental or Vocal Instruction	6 or 9
Ensemble	3
*Music 11, 12, 13. Rhythmic Movement	3
†Music 24, 25, 26. Orch. Instr. Lab.	3
‡Music 31, 32, 33. Piano Sight Reading	3
Engl. 1, 2, 3. Composition	9
P.E. 10 or 75. Health Ed.	2
Electives	5 or 10
P.E. Activity	+
Mil. or Nav. Sci.	+

At the end of the first year students may, on the advice of a faculty committee, choose a major from the following 4 curricula:

I. Major in Composition
II. Major in Instrumental or Vocal Music
III. Major in Music Education
IV. Major in Music History and Literature

I. Major in Composition

SECOND YEAR

	Credits
Music 30. Instrumental Instruction (Piano)	6
Music 34, 35, 36. Orchestral Instruments Laboratory	3
Music 71, 72, 73. Second-year Theory	12
Music 77, 78, 79. Music Literature	6
Ensemble	3
Physics 50. Sound	5
Electives	10
P.E. Activity	+
Mil. or Nav. Sci.	+

THIRD YEAR

	Credits
Music 101, 102. Modal Counterpoint	6
Music 104. Choral Literature	2
Music 131, 132. Contemporary Idioms	6
Music 134-135-136. Conducting	4
Music 141, 142, 143. Composer's Laboratory	9
Electives	18

FOURTH YEAR

	Credits
Music 151, 152. Counterpoint	6
Music 161, 162. Orchestration	6
Music 184-185-186. Conducting	4
Music 188, 189. Music History	6
Music 191, 192 or 193. Composer's Laboratory	6
Electives	17

II. Major in Instrumental or Vocal Music

A student must show marked talent for performance before proceeding further. Students will be examined upon entrance and at the end of each year by a committee of the faculty. Of the 36 credits required in Instrumental or Vocal Instruction, 30 credits must be in the major branch (e.g., piano), beginning with Music 50, and 6 credits in a minor instrument or in voice. If the major branch is organ, the 6 credits must be in voice (10 CX or 30).

Specific requirements in each field are as follows:

A. PIANO

SECOND YEAR

	Credits
Music 50. Instrumental Instruction	9
Music 71, 72, 73. Second-year Theory	12
Music 77, 78, 79. Music Literature	6
Physics 50. Sound	5
Electives	13
P.E. Activity	+
Mil. or Nav. Sci.	+

THIRD YEAR

	Credits
Music 87, 88, 89; 137, 138, 139. Repertory (any three)	6
Music 104. Choral Literature	2
Music 121, 122, 123. Keyboard Transposition and Improvisation	6
Music 144, 145, or 146. Accompanying	4
Music 150. Instrumental Instruction	9
Electives	18

* Special requirement for vocal and instrumental majors.
† Special requirement for composition and music education majors.
‡ Special requirement for piano and organ majors.

FOURTH YEAR

	Credits
Music 150. Instrumental Instruction	9
Music 164, 165, 166. Piano Teaching	6
Music 180. Chamber Music	3
Music 190. Senior Recital	2
Music electives: Music History or Theory	6
Electives	16

B. VIOLIN

SECOND YEAR

	Credits
Music 24, 25, 26. Orchestral Instruments Laboratory (viola)	3
Music 50. Instrumental Instruction	9
Music 71, 72, 73. Second-year Theory	12
Music 77, 78, 79. Music Literature	6
Music 80. Chamber Music	3
Ensemble	3
Physics 50. Sound	5
Electives	5
P.E. Activity	+
Mil. or Nav. Sci.	+

THIRD YEAR

	Credits
Music 87, 88, 89; 137, 138, 139. Repertory (any three)	6
Music 150. Instrumental Instruction	9
Music 160. Orchestra	3
Music 180. Chamber Music	3
Electives	24

FOURTH YEAR

	Credits
Music 150. Instrumental Instruction	9
Music 160. Orchestra	3
Music 180. Chamber Music	3
Music 190. Recital	2
Music electives: Music Theory	5-6
Electives	22

C. VOICE

(A) Language. The completion of one year of French, or its equivalent, is required at the end of the sophomore year and one year of German, or its equivalent, at the end of the junior year.

(B) Piano. An examination to demonstrate proficiency in the playing of simple accompaniments will be given at the end of the sophomore year.

SECOND YEAR

	Credits
Music 50. Vocal Instruction	6
Music 71, 72, 73. Second-year Theory	12
Music 77, 78, 79. Music Literature	6
Music 87, 88, 89. Repertory	6
Electives	15
P.E. Activity	+
Mil. or Nav. Sci.	+

THIRD YEAR

	Credits
Music 104. Choral Literature	2
Music 137, 138, 139. Repertory	6
Music 150. Vocal Instruction	9
Engl. 57. Poetry	5
Physics 50. Sound	5
Electives	20

FOURTH YEAR

	Credits
Music 144. Accompanying	2
Music 150. Vocal Instruction	9
Music 190. Senior Recital	2
Music electives: Music History or Theory	6
Electives	25

D. VIOLONCELLO: See Violin

E. ORGAN

SECOND YEAR

	Credits
Music 50. Vocal or Instrumental Instruction	9
Music 71, 72, 73. Second Year Theory	12
Music 77, 78, 79. Music Literature	6
Ensemble	3
Physics 50. Sound	5
Electives	10
P.E. Activity	+
Mil. or Nav. Sci.	+

THIRD YEAR

	Credits
Music 87, 88, 89; 137, 138, 139. Repertory (any three)	6
Music 104. Choral Literature	2
Music 134. Conducting	1
Music 150. Instrumental Instruction	9
Music 151, 152. Counterpoint	6
Electives	21

FOURTH YEAR

	Credits
Music 150. Instrumental Instruction	9
Music 157. Church Music	2
Music 190. Recital	2
Music electives: Music History or Theory	6
Electives	26

III. Major in Music Education

Preparatory to entering the professional teacher-training courses in the junior year, an examination will be given in piano, voice and syllable reading at the end of the sophomore year.

(A) *Piano.* Students who have offered piano for instrumental entrance requirement shall complete 12 credits in Music 30A of the piano course before graduation. Students who have substituted corresponding proficiency on another instrument shall remove entrance requirements by the end of the sophomore year.

(B) *Voice.* Two years of study are required or the ability to demonstrate attainment equal to Music 10 CX (6 cr.).

(C) *Academic Minor.* To qualify for the Three-Year Secondary Certificate, students will, during the senior year, choose a teaching minor in an academic subject.

SECOND YEAR

	Credits
Music 10CX. Voice Class	3
Music 30. Instrumental Instruction (Piano)	6
Music 34, 35, 36. Orchestral Instruments Laboratory	3
Music 64, 65. Orchestra Laboratory	2
Music 71, 72, 73. Second-year Theory	12
Music 77, 78, 79. Music Literature	6
Education 1. Orientation	2
Physics 50. Sound	5
Electives	5
P.E. Activity	+
Mil. or Nav. Sci.	+

THIRD YEAR

	Credits
Music 104. Choral Literature	2
Music 124, 125. Music Education	5
Music 134-135-136. Conducting	4
Ensemble	3
Education 9, 70, 90	8
Electives	23

FOURTH YEAR

	Credits
Music 126. Junior High School Music	3
Music 184-185-186. Conducting	4
Ensemble	3
Education 75R. High School Music	2
Education 90. Measurement in Education	2
Electives	31

The bachelor's degree will be awarded upon the completion of the requirements of the fourth year. A Three-Year Secondary Certificate (see College of Education, page 145), will be awarded upon the successful completion of the requirements as outlined below:

FIFTH YEAR

	Credits
Education 30, 71, 72, 60, 120	16
Instrumental or Vocal Instruction	6
Music Electives	6
Electives	17

Teaching Major or Minors in the College of Education

For the teaching major the departmental requirements for the five years are the same as III above.

Minor (for majors in music)

Music 24, 25, 26. Orchestral Instruments Laboratory	3
Music 34, 35, 36. Orchestral Instruments Laboratory	3
Music 64, 65. Orchestra Laboratory	2
Music 104. Choral Literature	2
Music 134-135-136. Conducting	4
Music 184-185-186. Conducting	4
Education 75R. High School Music	2

Vocal Minor (for nonmusic majors)

Music 21, 22. First-year Theory	8
Music 30C. Vocal Instruction	6
Music 104. Choral Literature	2
Music 134-135-136. Conducting	4
Music 195. Advanced Choral Conducting	3
Ensemble, Choral	3
Education 75R. High School Music	2

Instrumental Minor (for nonmusic majors)	
Music 21, 22. Music Theory	8
Music 24, 25, 26. Orchestral Instruments Laboratory	3
Music 34, 35, 36. Orchestral Instruments Laboratory	3
Music 50B, F, or G. Instrumental Instruction	6
Music 64, 65. Orchestra Laboratory	2
Music 104. Choral Literature	2
Music 134-135-136. Conducting	4
Music 156. Instrumental Music in the Public Schools	2
Ensemble	3
Education 75R. High School Music	2

IV. Major in Music History and Literature

SECOND YEAR

	Credits
Music 30 or 130. Instrumental Instruction (Piano)	6
Music 71, 72, 73. Second-year Theory	12
Music 77, 78, 79. Music Literature	6
Ensemble	3
Physics 50. Sound	5
Electives	13
P.E. Activity	+
Mil. or Nav. Sci.	+

Prospective majors in music history and literature must show reasonable proficiency in some branch of instrumental or vocal performance before entering the work of the junior year.

THIRD YEAR

	Credits
Music 187, 188, 189. Music History	9
Music Electives: Music Theory	9
French or German	15
Electives	13

FOURTH YEAR

	Credits
*Music History Electives	9
Music Theory Electives	6
Electives	30

* For those intending to continue work toward a graduate degree, Music 197, 198, and 199 are recommended.

PHILOSOPHY

Everett J. Nelson, *Executive Officer,* 264 Savery Hall

Degree: Bachelor of Arts

A major must offer (1) 50 credits in philosophy including Phil. 2 or 3, 5, 101-102, and 104-105-106; and (2) one approved course in each of the following fields of sciences: biological, physical, and social.

PHYSICAL AND HEALTH EDUCATION FOR MEN AND WOMEN

Edward H. Lauer, *Acting Director*

Ruth M. Wilson, *Executive Officer for Women,* 105 Hutchinson Hall

R. E. Belshaw, *Executive Officer for Men,* 210 Edmundson Pavilion

Degree: Bachelor of Arts

The School of Physical and Health Education includes five main divisions: (1) physical education activity program, (2) health instruction, (3) intramural sports and recreation, (4) professional education in teacher training and recreational leadership, (5) prephysical therapy (for women).

An extensive program in intramural sports and recreational activities is conducted for both men and women. The program provides for organized competition, clubs, and the use of facilities for recreational purposes.

Professional education is offered in the fields of physical education, prephysical therapy, recreational leadership, and health education. Application for admission to

professional curricula occurs after completion of 75 credits. The required foundation courses and professional courses are listed below. For additional requirements for the three-year normal diploma, requisite for high school teaching in the State of Washington, see College of Education, page 145.

*Lower-Division Requirements for Major Curricula

Required foundation and related courses:

MEN

	Credits
Zool. 1. General Zoology or Biology 1	5
Zool. 2. General Zoology or Biology 2	5
Zool. 14. Evolution	2
Zool. 15. Eugenics	2
Zool. 58. Physiology	6
†Chem. 3-4. General Chemistry (or one unit of high school chemistry)	10
Anat. 103. Anatomy Lectures and Laboratory	5
Engl. 1, 2, 3. Composition	9
Soc. 1. Survey of Sociology	5
Psych. 1. General Psychology	5
Speech 20. Essentials of Public Speaking	5
P.E. 81, 82, 83, 84, 85, 86. P.E. Backgrounds	6
P.E. 61, 62, 63, 64, 65, 66. P.E. Activities for Majors	+6
Military or Naval Science	+12
Total credits required	65+18

WOMEN

	Credits
Zool. 1. General Zoology or Biology 1	5
Zool. 2. General Zoology or Biology 2	5
Zool. 14. Evolution	2
Zool. 15. Eugenics	2
Zool. 58. Physiology	6
Chem. 3-4. General Chemistry (or one unit of high school chemistry)	10
Anat. 103. Anatomy Lectures and Laboratory	5
P.E. 10. Health Education	2
Engl. 1, 2, 3. Composition	9
Soc. 1. Survey of Sociology	5
Psych. 1. General Psychology	5
Speech 10. The Speaking Voice	5
P.E. 81, 82, 83, 84. Physical Education Backgrounds	4
P.E. 76, 77, 78. Physical Education Activities for Freshman Majors	+6
P.E. 15, 26, 57. Archery, Canoeing, Golf	+3
Total credits required	65+9

Major Requirements

Group A. Major in Physical Education

(For the nonprofessional student)

Required professional courses:

MEN

	Credits
90. Problems in Physical and Health Education and Recreation	2
95. Personal and General Hygiene	3
109. School Dance Program	2
115. Physiology of Muscular Exercise	3
116. First Aid and Safety	3
123. Community Recreation	2
124. Playground Program	3
145. Principles of Physical Education	3
150. Section B—School Physical Education Program	3
163. Methods and Materials in Teaching Sports	2
165. The School Health Education Program	3
193. Problems in Athletics	3
Six credits selected from the following:	
170. Football Coaching	2
171. Basketball Coaching	2
172. Track Coaching	2
173. Baseball Coaching	2
Total credits required	38

WOMEN

	Credits
90. Problems in Physical and Health Education and Recreation	2
¶101. Methods and Materials in Gymnastics, Stunts, and Tumbling	3
111. Rhythmic Activities for Small Children	2
112. Elementary School Athletics Program	3
115. Physiology of Muscular Exercise	3
116. First Aid and Safety	3
118. Analysis of Rhythm	3
128. Organization and Administration of Camp Programs	3
145. Principles of Physical Education	3
¶156. Methods and Materials in Teaching Modern Dance	2
¶162. Methods and Materials in Teaching Folk, Tap, and Clog Dancing	2
¶163. Methods and Materials in Teaching Sports	3
¶164. Methods in Teaching Swimming	3
165. The School Health Education Program	3
H.E. 104. Nutrition	2
Total credits required	37-38

¶ Must select 4 of 5.

* For lower-division requirement for teaching major in Health Education see Group E, page 133.

† Not required of men in Curriculum B.

Group B. Major in Recreational Leadership

(For the professional student in the field of recreation)

Required foundation and related courses:

MEN

	Credits
Biology 1-2. General	10
Psych. 1. General	5
Engl. 1, 2, 3. Composition	9
Soc. 1. Survey of Sociology	5
Speech 20. Essentials of Public Speaking	5
Art 100. Elementary Crafts for Schools	2
Librarianship 252. Story Telling	3
81, 82, 83, 84, 85, 86	6
25 approved credits from Sociology, Psychology, or Humanities	25
15 hours of electives from the following: P.E. 115; Drama 107, 108, 109, 134, 135, 136, 137; Forestry 6, 156; Music 17, 18, 19; Physics 54; Geology 1; Astronomy 1.	15
P.E. 61, 62, 63, 64, 65, 66. P.E. Activities for Majors	+6
Total credits required	85+6

WOMEN

For required foundation and related courses see lower-division requirements for major curricula.

	Credits
Art 100. Elementary Crafts for Schools	2
Drama 137. Creative Dramatics	3
Librarianship 252. Story Telling	3
13 Approved Electives from Sociology	13
5 approved credits from the following: Drama, Forestry, Music, Dance Production	5
Total credits required	26

Required professional courses:

MEN

	Credits
95. Personal and General Hygiene	3
98. Officiating. Men	2
109. The School Dance Program	2
116. First Aid and Safety	3
123. Introduction to Community Recreation	2
124. Playground Program	3
126. Observation and Practice Teaching	2
128. Organization and Administration of Camp Programs	3
145. Principles of Physical Education	3
150B. The School Physical Education Program	3
158. Methods of Teaching Apparatus, Tumbling, and Stunts	2
163. Methods and Materials in Teaching Sports	2
164. Methods in Teaching Swimming	2
193. Problems in Athletics	3
Total credits required	35

WOMEN

	Credits
90. Problems in Physical and Health Education and Recreation	2
101. Methods and Materials in Gymnastics, Stunts, and Tumbling	3
111. Rhythmic Activities for Small Children	2
112. Elementary-school Athletic Program	3
115. Physiology of Muscular Exercise	3
116. First Aid and Safety	3
118. Analysis of Rhythm	3
124. Playground Program	3
126. Observation and Practice Teaching	4
128. Organization and Administration of Camp Programs	3
145. Principles of Physical Education	3
156. Methods and Materials in Teaching Modern Dance	2
162. Methods and Materials in Teaching Folk, Tap, and Clog Dancing	2
163. Methods and Materials in Teaching Sports	3
164. Methods in Teaching Swimming	3
165. The School Health Education Program	3
166. Coaching (Registration for 3 quarters)	0
Total credits required	45

Group C. Major in Prephysical Therapy

(For Women)

Required foundation and related courses:

	Credits
Physics 70. Physics for Nurses	5
Psychology 2. General Psychology	5
Psychology 131. Child Psychology	5
Total credits required	15

Required professional courses:

	Credits
90. Problems in Physical and Health Education and Recreation	2
101. Methods and Materials in Gymnastics, Stunts, and Tumbling	3
111. Rhythmic Activities for Small Children	2
112. Elementary School Athletic Program	3
115. Physiology of Muscular Exercise	3
116. First Aid and Safety	3
118. Analysis of Rhythm	3
122. Kinesiology	3
145. Principles of Physical Education	3
162. Methods and Materials in Teaching Folk, Tap, and Clog Dancing	2
163. Methods and Materials in Teaching Sports	3
164. Methods in Teaching Swimming	3
165. The School Health Education Program	3
166. Coaching (Registration for 3 quarters)	0
Total credits required	36

Professional Teacher Training

(For the professional student in health and physical education)

Group D. Teaching Major in Physical Education

Required professional courses:

MEN

	Credits
90. Problems in Physical and Health Education and Recreation	2
95. Personal and General Hygiene	3
109. The School Dance Program	2
115. Physiology of Muscular Exercise	3
116. First Aid and Safety	3
122. Kinesiology	3
123. Community Recreation	2
124. Playground Program	3
127. Tests and Measurements	3
135. Adapted Activities	3
145. Principles of Physical Education	3
150. Section B. School Physical Education Program	3
158. Methods in Teaching Apparatus, Tumbling, and Stunts	2
161. Methods in Teaching Boxing and Wrestling	2
163. Methods and Materials in Teaching Sports	2
164. Methods in Teaching Swimming	2
165. The School Health Education Program	3
193. Problems in Athletics	3
Six credits from the following:	6
170, 171, 172, 173. Athletic Coaching	
Total credits required	53

WOMEN

	Credits
90. Problems in Physical and Health Education and Recreation	2
101. Methods and Materials in Gymnastics, Stunts, and Tumbling	3
111. Rhythmic Activities for Small Children	2
112. Elementary School Athletic Program	3
115. Physiology of Muscular Exercise	3
116. First Aid and Safety	3
118. Analysis of Rhythm	3
122. Kinesiology	3
127. Tests and Measurements	3
128. Organization and Administration of Camp Programs	3
145. Principles of Physical Education	3
150. The School Physical Education Program	2
156. Methods and Materials in Teaching Modern Dance	2
162. Methods and Materials in Teaching Folk, Tap, and Clog Dancing	2
163. Methods and Materials in Teaching Sports	3
164. Methods in Teaching Swimming	3
166. Coaching (3 quarters)	0
Three credits in physical education electives	3
If not accompanied by health education minor, add:	
153. Methods and Materials in Health Teaching	3
165. The School Health Education Program	3
Home Economics 104. Nutrition	2
Total credits required	46 or 54

Group E. Teaching Major in Health Education

MEN AND WOMEN

Lower division requirements:

	Credits
Engl. 1, 2, 3. Composition	9
P.E. 10 or 95. Health Education or Personal and General Hygiene	2-3
Chem. 21-22 or 1-2. General Chemistry	10
Pol. Sci. 1. Survey of Political Science	5
Soc. 1. Survey of Sociology	5
Physics 10. Survey of Physics or High School Physics	5
Speech 1-2. Basic Speech Improvement	6
Psych. 1. General	5
Psych. 2. Psychology of Adjustment	5
Zool.	5
Zool. 14. Evolution	2
Zool. 15. Eugenics	2
*Zool. 58. Physiology	6
*Anat. 103. (For P.E. majors and other nonmedical students)	5
Total credits required	65-66

Required professional courses:

	Credits
Home Econ. 104. Nutrition	2
Micro. 135	5
P.E. 90. Problems in Physical and Health Educ. and Recreation	2
P.E. 116. First Aid and Safety	3
P.E. 145. Principles of Phys. Educ.	3
P.E. 153. Methods and Materials in Health Teaching	3
P.E. 165. School Health Educ. Program	3
Psychiatry 100. Mental Hygiene	2
Public Health 119. Introductory Epidemiology	3
Public Health 120. Introduction to Public Health	3
Public Health 132. School and Community Health Programs	5
Speech (course to be determined by Speech Department in accordance with needs of individual)	5
Related Electives	15
Total credits required	54

* Physiology 117-118 and Anatomy 117-118 may be substituted for Zool. 58 and Anat. 103.

Related Electives:

	Credits
Educ. 175A. Auditory and Visual Aids in Teaching	3
Journ. 51. Preliminary News Writing	5
Journ. 171. Magazine and Feature Writing and Trade Journalism	3
P.E. 115. Physiology of Muscular Exercise	3
P.E. 122. Kinesiology	3
P.E. 129. Methods of Teaching First Aid and Safety	2
P.E. 135. Adapted Activities	3
Pol. Sci. 163. State and Local Government and Administration	5
Psychiatry 200. Principles of Psychiatric Counseling	2
Psych. 3. Applied Psychology	3
Public Health 122. Biostatistics	2
Public Health 124. Industrial Hygiene	3
Radio 70. Backgrounds	2
Soc. 27. Survey of Contemporary Social Problems	5
Soc. 112. The Family	5
Soc. 114. Social Factors in Marriage	3
Soc. 144. Rural Community	5

Group F. Teaching Minor in Physical Education

Required foundation and related courses:

MEN

	Credits
Zool. 58. Physiology or Zool. 18	6 or 5
P.E. 61, 62, 63, 64, 65, 66	+6
P.E. 81, 82, 83, 84, 85, 86	6
Total credits required	12 or 11+6

WOMEN

	Credits
Zool. 53. Physiology, or 18, Elementary Human Physiology	6 or 5
P.E. 76, 77, 78	+6
Total credits required	6 or 5+6

Required professional courses:

MEN

	Credits
109. The School Dance Program	2
116. First Aid and Safety	3
145. Principles of Physical Education	3
150. The School Physical Education Program	3
158. Methods in Teaching Apparatus, Tumbling, and Stunts	2
161. Methods in Teaching Boxing and Wrestling	2
163. Methods and Materials in Teaching Sports	2
193. Athletic Problems	3
Four credits from the following:	
170, 171, 172, 173. Athletic Coaching	4
Total credits required	24

WOMEN

	Credits
109. The School Dance Program	2
112. Elementary School Athletic Program	3
116. First Aid and Safety	3
145. Principles of Physical Education	3
150. The School Physical Education Program	2
153. Methods and Materials in Health Teaching	3
163. Methods and Materials in Teaching Sports	3
165. The School Health Education Program	3
Three credits from physical education electives	3
Total credits required	25

Group G. Teaching Minor in Health Education

Required foundation and related courses:

MEN AND WOMEN

	Credits
Zool. 58. Physiology, or Zool. 18	6 or 5
Zool. 15. Eugenics	2
Total credits required	8 or 7

Required professional courses:

MEN

	Credits
Home Economics 104. Nutrition	2
95. Personal and General Hygiene	3
116. First Aid and Safety	3
§145. Principles of Physical Education	3
153. Methods and Materials in Health Teaching	3
165. The School Health Education Program	3
Public Health 118. Transmission and Control of Communicable Diseases	3
Public Health 120. Introduction to Public Health	3
Public Health, Sociology, or Psychology	3
Total credits required	26

WOMEN

	Credits
Home Economics 104. Nutrition	2
116. First Aid and Safety	3
§145. Principles of Physical Education	3
153. Methods and Materials in Health Teaching	3
165. The School Health Education Program	3
Public Health 118. Transmission and Control of Communicable Diseases	3
Public Health 120. Introduction to Public Health	3
Sociology or Graduate School of Social Work (approved electives)	3
Total credits required	23

§ If taken with a major other than physical education.

PHYSICS

CLINTON L. UTTERBACK, *Executive Officer*, 205 Physics Hall

Elective Curriculum

DEGREE: Bachelor of Science

The major must offer 41 credits including courses 1, 2, 3 (or 4, 5, 6), 101, 102, 105, 106, 160, 161.

Prescribed Curriculum

DEGREE: Bachelor of Science in Physics

FIRST YEAR

Autumn Quarter	*Credits*
Engl. 1. Composition	3
Math. 4. Trigonometry	5
Physics 1*. General	5
Electives	2
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	15

Winter Quarter	*Credits*
Engl. 2. Composition	3
Math. 5. College Algebra	5
Physics 2*. General	5
P.E. 10 or 75	2
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	15

Spring Quarter	*Credits*
Engl. 3. Composition	3
Math. 6. Analytic Geometry	5
Physics 3*. General	5
Electives	2
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	15

SECOND YEAR

Autumn Quarter	*Credits*
Chem. 1 or 21. General	5
Math. 107. Calculus	5
Physics 101. Introduction to Modern Physics	3
Physics 105. Electricity	3
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	16

Winter Quarter	*Credits*
Chem. 2 or 22. General	5
Math. 108. Calculus	5
Physics 102. Introduction to Modern Physics	3
Physics 106. Electricity	3
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	16

Spring Quarter	*Credits*
Chem. 23. Qualitative Analysis	5
Math. 109. Calculus	5
Physics 150. Heat	3
P.E. Activity	+
Mil. Sci. or Nav. Sci.	+
	13

THIRD YEAR

Autumn Quarter	*Credits*
Chem. 111. Quantitative	5
Math. 114. Diff. Equations	3
Physics 160. Optics	3
*Electives	5
	16

Winter Quarter	*Credits*
Math. 115. Diff. Equations	3
Physics 161. Optics	3
Physics 140. Sound	3
Mech. Engr. 55. Shop	1
*Electives	5
	15

Spring Quarter	*Credits*
Math. 116. Diff. Equations	2
Physics 185. Nuclear	3
Physics 154. High Frequency	4
*Electives	5
	14

FOURTH YEAR

Autumn Quarter	*Credits*
Chem. 181. Physical	5
Physics 180. History of Physics	2
Physics 191. Theoretical Mechanics	4
*Electives	4
	15

Winter Quarter	*Credits*
Chem. 182. Physical	5
Physics 195. Experimental Atomic	3
Physics 192. Theoretical Mechanics	4
*Electives	3
	15

Spring Quarter	*Credits*
Chem. 183. Physical	5
Physics 196. Experimental Atomic	3
Electives	2
*Electives	5
	15

Teaching Major or Minor in the College of Education

The requirements for a major are the same as those for the elective major; for a minor 33 credits, including the courses required for a major, must be offered.

A teaching major or minor in physics must be supported by 15 credits of college mathematics.

For recommendation for the secondary certificate a major or a minor is required with an average grade better than "C."

* Electives should include French or German.

POLITICAL SCIENCE

CHARLES E. MARTIN, *Executive Officer*, 206A Smith Hall

DEGREE: Bachelor of Arts

Four elective curricula are offered. They consist of (1) a general major in political science designed for the student who desires a flexible liberal arts program; (2) a preprofessional program in international relations for those who desire to begin preparation for the Foreign Service, the State Department, or international agencies; (3) a preprofessional program in public administration; and (4) a teaching major and minor in the College of Education for students preparing for high school teaching. Specific requirements are as follows:

General Major

In addition to the general requirements of the College of Arts and Sciences, the following are required:

Lower-division courses: 1, and one of the intermediate courses (52, 54, 56, 58, and 74).

Upper-division courses: 111 or 118, 127 or 136, 145, 153, 155; and in addition, 15 credits of electives preferably in the field of concentration.

International Relations

First and Second Years. In addition to the general requirements of the College of Arts and Sciences, the student should elect Political Science 1; either 52, 56, or 58; Economics 10; Geography 1; and Sociology 1. A reading and translating knowledge of at least one modern foreign language is essential. To develop the necessary degree of language proficiency, not less than 30 University credits, or the equivalent in high school and University work, will be needed.

Third and Fourth Years. The upper-division program should be developed in consultation with the adviser and should include:

1. Basic Political Science: 111 or 118, 145, 153, and 155.
2. International Relations: 121, 122, 127, 136; at least three of 123, 124, 129, 130, and 132; and Law 122.
3. Supporting Fields: Courses selected with the consultation of the adviser from among Geography 103, 104, 105; Economics 170, 171, 182, and 106; Sociology 155; and History 130, 131, and 159.

Public Administration

First and Second Years. In addition to the general requirements of the College of Arts and Sciences, students should elect Political Science 1 and 52; Economics 10, B.A. 62, 63; B.A. 60 or Mathematics 13; Psychology 1 and History 7. Remaining courses should be selected in consultation with the adviser.

Third and Fourth Years. During these years the student should select:

1. Basic Political Science: Political Science 112, 127, 145, 153, and 161 or 157.
2. Public Administration: Political Science 154, 155, 162, 163, 167, and 168.
3. Economics: Economics 150, 151, and 100.
4. At least four other courses in the social sciences selected in consultation with the adviser.

Teaching Major or Minor in the College of Education

Major: 40 credits in Political Science including courses 1, 56, 101, 121, 151, and 163.

Minor: 20 credits in Political Science including courses 1, 101, 163.

PRE-EDUCATION, PRELAW, PRELIBRARIANSHIP, PREMEDICINE, PREDENTISTRY, PRENURSING, AND PRE-SOCIAL WORK

(See Preprofessional Training, page 175)

PSYCHOLOGY

ROGER BROWN LOUCKS, *Executive Officer,* 335 Savery Hall

DEGREE: Bachelor of Science

A major requires 36 credits of psychology, approved by the department, including the following courses: Psych. 1, 2, 51, 108, 111, and 124. A grade-point average of 2.5 or better in Psychology subjects must be maintained for graduation.

Teaching Minor in the College of Education

Students who wish to offer a teaching minor in psychology must have Psych. 1 and 2, and 8 credits elected from Psych. 51, 108, 111, 112, 116, 118, 121, 123, 124, 126, 135—a total of 18 credits.

PUBLIC HEALTH AND PREVENTIVE MEDICINE

L. E. POWERS, *Executive Officer,* E306 Health Sciences Building

DEGREE: Bachelor of Science

Major in Sanitary Science. Lower-division study must fulfill the requirements of the College of Arts and Sciences, and must also include the following basic work: chemistry, 10 credits; mathematics, 9 credits; physiology, 6 credits; zoology, 5 credits; physics, 5 credits; anatomy, 3 credits.

In the third and fourth years, a minimum of 36 credits of public health courses is required, in addition to which the following must be taken: Microbiology 135, H.-S.S. 40, Sociology 116, Education 175A, Zoology 144, and Zoology 145.

Major in Public Health Statistics. Students in this group must have a working knowledge of typing, shorthand, advanced algebra, and solid geometry. In addition to fulfillment of the requirements of the College of Arts and Sciences, the lower-division student must complete the following: chemistry, 10 credits; mathematics, 15 credits; zoology, 10 credits.

In the upper division, the student must complete a minimum of 36 credits of public health courses in addition to which the following courses are required: Anatomy 103, Microbiology 135, Bus. Admin. 119, Mathematics 107, 108, and 109, Nursing 161.

Upon completion of 180 credit hours, students in both the above groups are required to take 12 weeks of supervised field practice (Public Health 110) before the Bachelor of Science is granted.

A grade-point average of 2.5 must be maintained in the professional courses.

RADIO EDUCATION

EDWIN H. ADAMS, *Executive Officer,* Radio Hall

This department coordinates the courses pertaining to radio broadcasting offered in various departments and schools, but does not offer a major or minor and does not grant degrees. A general pattern of training in radio, covering the several areas of specialization and leading to the degree of Bachelor of Arts, is available through the Department of General Studies (see page 115).

Those wishing to specialize in radio drama, radio education, radio engineering, radio journalism, radio music, or radio speech should consult the department concerned (Drama, Education, Electrical Engineering, Journalism, Music, Speech).

ROMANCE LANGUAGES AND LITERATURE

(French, Italian, Portuguese, and Spanish)

HOWARD L. NOSTRAND, *Executive Officer*, 202 Denny Hall

DEGREE: Bachelor of Arts

Majors are offered in French, Spanish, and Italian. Majors and minors for the Three-Year Secondary Certificate are offered in French and Spanish; these majors are the same as for the B.A. (For Latin-American Studies see General Studies.) The requirement in each case is (a) proficiency in the language, and (b) knowledge of its literature and cultural background, as outlined in a syllabus obtainable from the Department. This requirement may normally be met in a French major with 45[1] credits, namely courses 4, 5, 6; 41, 101, 102, 103; 104, 105, 106; 107 or 108[2]; 158, 159; plus 12 elective credits[3] and some directed reading. A Spanish major may be met with 45[1] credits, namely courses 4, 5, 6; 101, 102, 103; 104, 105, 106; 158, 159; plus 14 elective credits[3] and some directed reading.

A teaching minor in French or Spanish requires a minimum of 24 credits in courses above French or Spanish 6. Spanish 10, 11, and 12 must be included in the 24 credits required for a teaching minor, and Spanish 127, 128, and 129 for a teaching major.

SCANDINAVIAN LANGUAGES AND LITERATURE

(Swedish, Norwegian, and Danish)

SVERRE ARESTAD, *Executive Officer*, 210 Denny Hall

DEGREE: Bachelor of Arts

For a major the student shall offer 36 credits, 15 of which are upper-division, including the following courses: *for Swedish*, 1, 2, 3, 4, 5, 6, 23, 24, 25, 103, 104, 105; 106, 107, 108: Modern Norwegian or Danish Writers *or* special work in Swedish literature; *for Norwegian or Danish*, 10, 11, 12, 13, 14, 15, 20, 21, 22, 106, 107, 108; 103, 104, 105: Modern Swedish Writers *or* special work in Norwegian or Danish literature.

SOCIOLOGY

GEORGE A. LUNDBERG, *Executive Officer*, 108A Smith Hall

Degrees and Requirements for Graduation:

Students should read the departmental leaflet and consult staff advisers before selecting courses.

DEGREE: Bachelor of Arts

The degree of Bachelor of Arts with a major in sociology will be conferred on students who complete a minimum of 36 credits in approved courses in sociology and fulfill the group requirements of the College. The required sociology courses for this degree are: 1 or 100, 31, 55 or 155, 60, and 112. A minimum over-all grade-point average of 2.0 must be maintained.

Teaching Major or Minor in the College of Education

The major is the same as in the College of Arts and Sciences.

The minor requires 27 credits, including courses 1 or 100, together with 112 or 155, and 17 credits of approved sociology electives.

[1] Beyond course 3 or two high school years. A third high school year replaces courses 4, 5, 6; a fourth high school year, if devoted to advanced composition and conversation, replaces courses 101, 102, 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] Any literature courses numbered above 120 and not including more than 3 credits of 134, 135, 136.

SPEECH

HORACE G. RAHSKOPF, *Executive Officer*, 209 Parrington Hall

DEGREE: Bachelor of Arts

The major requires a minimum of 50 credits in approved courses in speech, including Speech 1-2, 10, 20, 100, 198, and one of the workshop courses in public performance or clinical practice, i.e., 39, 49, 174, or 184. In addition, the student will elect certain of his courses in humanities, social science, and natural sciences with approval of the Department.

Teaching Major or Minor in the College of Education

In addition to general University requirements and those of the College of Education, the candidate for a Three-Year Secondary Certificate must complete the following requirements:

Major:

(1) Lower-division courses: Speech 1-2, 10, 20, 30, 42, 50, 61. (Total lower-division credits 31.)

(2) Upper-division courses: Speech 100, 170, 180, 198, and Educ. 75X (two of the credits for Educ. 75X are included in the College of Education requirements) plus a minimum of 11 credits of *approved* electives. In choosing these electives the student must take at least one course from the workshop courses in public performance or clinical practice, i.e., 39, 49, 174, or 184. (Total upper-division credits 29.)

(3) *Approved* courses in related fields: Literature and drama, 12 to 15 credits; social science 10 credits; science 10 credits. (The social science and science credits also apply on College of Arts and Science requirements.)

(4) The grade-point average in speech courses is the same as that required for professional courses in Education (see College of Education).

First Minor: A total of 30 credits in speech, including Speech 1-2, 10, 20, 42, 50, Educ. 75X, and *approved* upper-division electives. The grade-point average in speech courses is the same as that required for professional courses in Education (see College of Education).

Second Minor: A total of 20 credits in speech, including Speech 1-2, 10, 20, 50, and an *approved* upper-division elective.

ZOOLOGY

ARTHUR W. MARTIN, *Executive Officer*, 142 Johnson Hall

A student entering the department will be assigned an adviser with whom he will plan his course of study. Upper-division and graduate students may select their own advisers from among the members of the teaching staff.

Biology 1 and 2, Zool. 8, 14, and 58 are courses given to meet the needs of students in other departments and will not be counted toward departmental majors or minors. Botany 108, 109, and 110 and Fisheries 101, 102, and 103 receive zoology credit upon request.

Elective Curriculum

DEGREE: Bachelor of Arts

This degree is awarded those students who show evidence of a broad liberal arts education. Minimum requirements for the degree include those of the College of Arts and Sciences and 36 credits in approved courses in Zoology. These must include Zool. 1 and 2, Zool. 153-154 or Zool. 156, Botany 108 and Zool. 100 (or an acceptable laboratory course in physiology). In addition a year of college chemistry, a year of college-grade foreign language and 15 credits in social sciences will be required for the degree.

Prescribed Curriculum

DEGREE: Bachelor of Science

This degree is awarded to those students who present a concentration of credits in a correlated program of science courses. The student must meet the group requirements of the College. In addition he must fulfill the following requirements: present a minimum of 45 credits in zoology courses including Zool. 1 and 2, 100, 133, 134, 153-154, 156 and Botany 108, present Botany 1 and 2, a year of college physics, Chemistry 21, 22, 128, 129, 131, and 132, and a year of college French or German. A year of college mathematics and a reading knowledge of a second modern foreign language are highly recommended. He must present an over-all average of 2.5 and a 3.0 average in all courses in zoology.

The above curriculum includes the courses it is felt a zoology major should have if he is to enter upon graduate work without deficiencies. Satisfactory performance in the elective curriculum or in a related science department may also lead to a graduate program in zoology.

Teaching Minor in Zoology in the College of Education

A minor requires 25 credits, including Zool. 1 and 2, 58 or 100, and 10 hours from the 5-hour upper-division laboratory courses in zoology. Education 75Z will also be required.

For a major, see Biology major in College of Education.

COLLEGE OF BUSINESS ADMINISTRATION

AUSTIN GRIMSHAW, *Dean*, 210 Commerce Hall

For detailed information concerning University fees, expenses, and admission requirements, see pages 75-85. In addition to the all-University entrance requirements, the College of Business Administration requires one unit* each of U.S. history and civics, elementary algebra, plane geometry or advanced algebra.

Inquiries in regard to the College of Business Administration should be addressed to the Dean. All correspondence regarding admission should be sent to the Registrar of the University.

Fellowships, Scholarships, Prizes. See page 98.

Requirements for Graduation

Graduates of the College of Business Administration receive the degree of Bachelor of Business Administration. The following summarizes the requirements for this degree:

1. Students must satisfy the entrance requirements of the University and the College of Business Administration.

2. The student must earn 180 credits in subjects required by the University and required or approved by the faculty of the college; 72 credits must be earned in courses in business administration and economics, and 72 credits must be earned in courses which are neither business administration nor economics. In addition, men must meet the general University requirements of physical education and military or naval science plus P.E. 75; women must have 6 quarters of physical education activities plus P.E. 10.

3. A minimum of 60 credits in upper-division courses, exclusive of those earned in Army and Navy R.O.T.C. subjects, shall be required for graduation.

4. No more than 18 quarter credits in advanced Army and Navy subjects may be applied toward graduation, except in the case of students in the Supply Corps.

5. For the purpose of computing grade-point averages for high and low scholarship and for graduation, the first two years of Army and Navy subjects shall be excluded.

6. Continuation in the College of Business Administration will depend upon the

* A "unit" is applied to work taken in high school. To count as a unit a subject must be taught five times a week, in periods of not less than 45 minutes for a school year of 36 weeks.

student's demonstration of general fitness for work in that college, including the maintenance of satisfactory academic performance. See Scholarship Rules, page 91.

Students who are admitted upon petition with high school deficiency must register for such courses during their first quarter of residence and carry the work continuously until all deficiencies are removed.

The student will, before the beginning of his junior year, choose a special field of major interest and will consult the major professor in this field in planning his program. Each application for degree must be approved by the head of the department in which the student has taken his major work.

Prior to the time of registration the student's program must be approved by the curriculum counselor for the College of Business Administration, who will enforce all requirements together with the course prerequisites as stated in this bulletin.

Lower-Division Requirements

FIRST YEAR

	Credits
B.A. 1. Business Organization	5
Econ. 10. Introduction to Economics	5
Engl. 1. Composition	3
Engl. 2. Composition	3
Engl. 3. Composition	3
Geog. 7. Economic Geography	5
P.E. 10 or 75. Health Education	2
10 credits in one of these three fields:	10
(1) Mathematics (may not include Math. 13)	
(2) Laboratory Science (10 credits of one science or 5 credits in each of two from: Botany, Chemistry, Geology, Physics, or Zoology)	
(3) Foreign Language (10 credits of one language)	
Approved Electives	9
	45

SECOND YEAR

	Credits
B.A. 62. Principles of Accounting	5
B.A. 63. Principles of Accounting	5
B.A. 54. Business Law	5
B.A. 60. Statistical Analysis	5
History 7. Survey of U.S. History	5
20 credits in the following:	20
Psychology	
Political Science	
Sociology	
Philosophy	
Anthropology	
(It is recommended that 10 credits, *but no more than 10 credits*, be taken in each of two fields.)	
	45

Upper-Division Requirements

THIRD AND FOURTH YEARS

	Credits
B.A. 101. Industrial Management	5
B.A. 102. Business Finance	5
B.A. 106. Principles of Marketing	5
B.A. 165. Human Relations in Business and Industry	5
B.A. 175. Business Fluctuations	5
Major Requirements and Approved Electives	65
	90

Requirements in Major Fields

The required courses in the fields of specialization are as follows:

1. Accounting:* B.A. 55, 110, 111, 112, 154, 156, 157, 158; (and 178 for professional accounting).
2. Banking and Finance: 18 or more credits approved by adviser from B.A. 120, 121, 122, 123, 124, 125, 126, 127.
3. Industrial Geography: Geog. 102, 103, 104, 105 or 109, 106 or 107.
4. Foreign Trade:† Econ. 170, B.A. 127, 181, 182, 197B, C; a minimum of 5 credits from: Political Science 121, 122, 123, 124, 129, 130, 132; and a minimum of 5 credits from: Geography 103, 104, 105, 106, 107, 108, 109.
5. General Business: 20 credits of approved upper-division courses in business, no more than 10 of which may be in any one of the fields of specialization.

* Accounting majors should take B.A. 110 in third quarter of the sophomore year.

† Each major in foreign trade must, not later than the first quarter of his junior year, in consultation with his major professor, build a complete scholastic program for the last two years of his University work. One copy of this program shall be kept in the college registration office and one by the student. No student will be permitted to register as a foreign trade major after the first quarter of his junior year unless such a two-year program has been approved.

6. Insurance: B.A. 108, 128, 129, and 11 or more credits approved by adviser from B.A. 149, 187, 188, 198A, 198B, 198C, Econ. 145.
7. Management:
   Industrial: B.A. 110, 150, 151, 154.
   Personnel: B.A. 167, Psychology 2 and 123, Econ. 140.
   Office: B.A. 115, 119, 124, 167, 195.
8. Marketing:§
   General Marketing: B.A. 130, 133, 134, 138, 139, 193A, 193B.
   Retailing: B.A. 130, 133, 134, 135, 138, 139, 193A, 193B, Home Econ. 25.
   Advertising: B.A. 130, 133, 134, 136, 138, 139, 193A, 193B.
9. Real Estate: B.A. 109, 169, 199B, 199C.
10. Secretarial Administration: B.A. 115, 116, 117, 118, 119.
11. Transportation: B.A. 55, 104 and at least 20 credits from the following courses: B.A. 140, 143, 144, 145, 146, 148, 149, 194A, 194B.
12. Commercial Teaching:‖
    (a) Satisfaction of all the general requirements of the College of Business Administration.
    (b) B.A. 12, 13, and 14, Typewriting, and B.A. 16, 17, and 18, Shorthand, a total of 12 credits. This requirement may be satisfied by passing an examination. In case of exemption by examination, University credit is not given.
    (c) The major requirements shall include courses appropriate to the candidate's teaching field, to be selected by the student and his adviser, and total no less than 20 credits.
    (d) The approved electives should include Education 1 (in the freshman or sophomore year), 9, and 70.

    Completion of the above requirements for the degree of Bachelor of Business Administration with a major in Commercial Teaching does not satisfy all requirements for the Three-year Teaching Certificate. For these additional requirements, see page 146 under the College of Education.
13. Prelaw and Combined Law and Business Curriculum: See page 175.

Advanced Degrees

For requirements for advanced degrees, see Graduate School section, page 179.

§ Each major in marketing must, not later than the first quarter of his junior year, in consultation with his major professor build a complete scholastic program for the last two years of his University work. One copy of this program shall be kept by the college registration office and one by the student. No student will be permitted to register as a marketing major after the first quarter of his junior year unless such a two-year program has been approved. B.A. 106 should be taken in the sophomore year.

‖ A teaching major and two teaching minors in commercial education have been provided also in the College of Education. See page 146.

NOTE: No student will be permitted to take B.A. 139 or 193 unless he has earned a composite grade-point average of 2.5 in the following courses: B.A. 106, 133, 134, and 138.

SCHOOL OF DENTISTRY

ERNEST M. JONES, *Dean*, Health Sciences Building

The School of Dentistry began instruction to its first classes on October 1, 1946. Since January 1, 1949, the school has occupied its new quarters in the Division of Health Sciences Building where clinical and didactic instruction is being given in all phases of dentistry.

Organization and development of the School of Dentistry has been so designed as to meet the approval of the Council on Dental Education of the American Dental Association. The objective of the school is to prepare a selected group of dental students for the practice of dentistry through the use of the best educational technics employed in the field. Actual admission to the practice of dentistry in the State of Washington, or any other state, is conditional upon the candidate meeting the requirements of the state board of dental examiners, and passing the state dental examinations.

Applications

All applications and pertinent material should be sent to the Committee on Admissions of the School of Dentistry. Each applicant must submit the following material on or before April 1, before any action can be taken by the Committee on Admissions: (1) formal application for admission on the form furnished by the University of Washington School of Dentistry; (2) official transcripts of previous college record (sent directly from the Registrar's Office of the institution where preprofessional training was taken to the Committee on Admissions of the School of Dentistry of the University of Washington); (3) two unmounted recent photographs (2 x 3 inches); (4) two letters of recommendation, one preferably from a science instructor, and the other from a business or professional individual.

Admission

The Committee on Admissions will consider as candidates for entrance to the School of Dentistry: (1) individuals who hold a Bachelor of Arts or Science degree from a fully accredited college or university and whose scholastic average has been 2.0 or better; (2) those who have completed two years of predental training (90 academic quarter credits) with a scholastic average of 2.0 or better. All applicants must have completed the required course in physical education, and the following basic predental courses: English 1, 2, 3 (Composition, 9 credits); Chemistry 1, 2 (for students without high school chemistry) or 21, 22 (for those having completed a year of high school chemistry); 23 (Qualitative); 128, 129, 131, 132 (Organic)—(total of 25 chemistry credits); Physics 1, 2, 3 or 4, 5, 6 (15 credits); Zoology 1, 2 (General); 153-154 (Comparative Anatomy) or Zoology 156 (General Vertebrate Embryology).

Students are advised to choose electives from fields of special interest for the purpose of broadening and enriching their background in human relationships and understanding. While the following subjects are suggested, students should study the offerings in their respective schools for other possible electives; laboratory drawing, sculpture, survey of American literature, introduction to modern literature, music appreciation, essentials of speaking, anthropology, economics, philosophy, psychology, or sociology.

Requirements for Graduation

A candidate for the degree of Doctor of Dental Surgery must be 21 years of age and must have given evidence of good moral character. He must have attended four quarters as a regularly matriculated student. He must have completed the required work, have a satisfactory grade average (minimum 2.0) throughout the entire dental course, and have fulfilled all special requirements. He must have discharged all indebtedness to the institution.

A degree of Bachelor of Science in the College of Arts and Science is granted with the fourth year of work being done in the School of Dentistry.

For advanced degrees, see Graduate School section, page 179.

COLLEGE OF EDUCATION

FRANCIS F. POWERS, *Dean*, 230 Education Hall

The College of Education is a professional college for teachers. The specialized offerings include curricula leading toward: public school certification on the elementary and secondary levels, various types of public school credentials, the Bachelor of Arts degree, the Bachelor of Science degree, and the Bachelor of Arts in Elementary Education.

The advisory personnel are available to assist students with the various types of programs from 8:00 a.m. to 5:00 p.m. daily, Monday through Friday, and from 8:00 a.m. to 12:00 noon on Saturday. In order to protect the student with reference to technical requirements, registration in all Education courses for all purposes must be approved through the Education advisory office.

Entrance Requirements

For information concerning University requirements for admission see pages 75-80. Students are admitted to the College of Education as freshmen. A cumulative grade-point average of 2.2 must be maintained throughout the professional training. A high school foreign language deficiency may be met by taking 15 credits in a foreign language or in English composition or literature.

A freshman may enter the University as a pre-education major in the College of Arts and Sciences if he is undecided as to the prescribed course he wishes to follow, or if he does not meet the entrance requirements for the College of Education.

General Requirements

1. English 1, 2, and 3, or equivalent, are required of all students. These courses do not apply toward the Group I requirement or toward a major or minor.
2. Physical Education 10, or equivalent, must be taken by all women students; Physical Education 75, or equivalent, must be taken by all men students.
3. Six credits in Physical Education activities (or exemption) are required for graduation. Twelve credits (6 quarters) of military and naval science are required of all men.
4. Sixty upper-division credits are required of all students for graduation.
5. During the first two years a student should complete his Group requirements, At least 30 credits are required in one group, 20 credits in a second group, and 10 credits in the remaining group. For a list of departments in the College of Arts and Sciences and in the College of Education by groups, see page 100.
6. *Major Subject.* Students majoring in Groups I and II will receive a Bachelor of Arts degree; Group III, a Bachelor of Science degree. Each student must have a major field selected from the following: Art Education, Biology, Botany, Chemistry, Civics, Commercial Subjects, Drama, Economics, English, Elementary Education, Far Eastern, French, Geography, Geology, German, Health Education, History, Home Economics, Industrial Arts, Journalism, Latin, Librarianship, Mathematics, Music, Physical Education for Men, Physical Education for Women, Physics, Political Science, Psychology, Sociology, Spanish, Speech, Zoology.

The College of Education advisory staff will help the student choose teaching combinations which are in demand.

7. *Foreign Language Deficiency.* Students graduating from the College of Education may take foreign language or substitute 15 credits in General Literature and English for an entrance deficiency in foreign language. The substituted credits must be in addition to the regular graduation requirements of English 1, 2, and 3 (Composition).
8. A minimum of 9 credits in Education at the University of Washington are required for graduation from the College of Education. A cumulative grade-point average of at least 2.2 must be maintained for all professional courses in Education which are required for the teaching certificate.
9. Academic quarter credits totaling 180 are required for the bachelors' degrees.
10. An application for the bachelor's degree should be on file not later than the beginning of the senior year.

Courses in Education are classified into three divisions. All courses except Education 1 offer upper-division credit. Courses numbered from 9 to 99 are open to juniors and seniors. Courses numbered from 100 to 199 are open to juniors, seniors, and graduate students. Courses numbered from 200 to 300 are open only to graduate students.

Fellowships, Scholarships, Prizes. See page 98.

Advanced Degrees

The Department of Education in collaboration with the Graduate School offers four advanced degrees: master of education, master of arts, doctor of education, and doctor of philosophy. See Graduate School section for further details.

Students without teaching experience are accepted in the fifth year as candidates for advanced degrees only if they have been graduated with merit (grade-point average of 3.5).

Requirements for Three-Year Secondary Certificate

The University Three-Year Secondary Certificate is valid for three calendar years from date of issue, and may be issued only to persons who are citizens of the United States or to aliens who have declared their intention of becoming citizens and have secured an alien permit to teach from the State Superintendent of Public Instruction. Applicants for this certificate must fulfill the following requirements:

1. Show evidence of such general scholarship and personal and moral qualities as give promise of success.

2. Earn 225 quarter credits in approved courses, including a degree from a properly accredited institution. Thirty-three of the forty-five quarter 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.

3. Take a course in the history of the State of Washington (History 164) and earn additional credits in courses dealing with contemporary social problems to make a total of 15. These courses must be approved by the College of Education.

4. Earn a minimum of 30 credits in Education including the following courses (not more than two credits for Education 75 may be counted toward this requirement):

		Credits
1	Orientation in Education	2
9	Psychology of Education	3
70	General Methods	5
90	Measurement in Education	2
75	Special Methods	2
30	Washington State Manual	2
71-72	Cadet Teaching	8
60	Principles of Education	3
120	Educational Sociology, *or approved substitute*	3
		30

The professional courses in Education for the secondary teaching certificate must be distributed throughout the junior, senior, and fifth years, as an effort to crowd these courses results in numerous conflicts.

5. Earn the following grades:
   (a) An all-University grade-point average of 2.2 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, and in contemporary social problems.

6. Present (a) a teaching major, minimum of 30 credits; and (b) two teaching minors, minimum of 15 credits each. The major and minors must be in subjects regularly included in the curriculum of at least two accredited public high schools in the State of Washington. The list of acceptable teaching majors and/or minors follows: Art Education, Biology, Botany, Chemistry, Civics, Commercial Subjects, Drama, Economics, English, Far Eastern, French, Geography, Geology, German, Health Education, History, Home Economics, Industrial Arts, Journalism, Latin, Librarianship, Mathematics, Music, Physical Education for Men, Physical Education for Women, Physics, Political Science, Psychology, Sociology, Spanish, Speech, and Zoology. (For departmental requirements for teaching majors and minors, see the schools and departments listed alphabetically under the College of Arts and Sciences.)

Librarianship. Students who wish to offer Librarianship as a second minor must have 18 credits, including the following courses: Librarianship 151, 161, 163, 164, 260, 262.

The College of Education offers the following combination majors and/or minors, which are not described under the College of Arts and Sciences, but are included in the above list.

Biology. Since a true conception of Biology cannot be obtained without a proper balance between Botany and Zoology, these two departments do not offer a teaching major separately, but rather a major in Biology which is the equivalent in credits of a major and a minor. Therefore, students taking a teaching major in Biology are

considered to have completed a major and one minor and need take only one additional minor. It is highly recommended that the additional minor be in chemistry.

Biology majors must offer a minimum of 60 credits including one or more of the following introductory courses: Biology 1-2, Botany 1 and Zoology 1, the number being dependent upon excellence of scholarship and the advice of the two departments. Other required courses are: Botany 2 and 3, 108, 143 or 144; Zoology 2, 58 or 100; 5 credits chosen from Zoology 133-134, 144, 173; 5 credits chosen from Zoology 163, 164, 165; Microbiology 101. The remaining 10 credits will be approved electives in Botany or Zoology courses which will usually be selected from Botany 24 and 25 or 101; Zoology 101, 133-34, 156, 173 or 174.

The Departments of Botany and Zoology each have appointed an adviser to guide the student in the selection of courses for the major. All majors should have their programs approved by these advisers.

Civics. For a major a student must offer 40 credits including Political Science 1, 101, 163; Economics 16; Sociology 1; plus 13 elective credits in Political Science and 5 credits in Economics or Sociology.

For a minor a student must offer 25 credits including Political Science 1, 101; Economics 16, or Sociology 1; plus 13 elective credits in Political Science.

Business Education. Students may prepare for teaching positions in business departments in secondary schools by following the program given below.

The following Business Administration courses will be required for a *major:*

(a) *Foundation courses:* B.A. 12,* 13,* 14,* 16,* 17,* 54, 62, 63, Education 75E, and 75F.

(b) Plus one of the following areas of specialization:

(1) *Secretarial Administration:* B.A. 18, 115, 116, 117, 118, 119.

(2) *Accounting:* B.A. 106, 110, 111, 154, 156, plus 5 credits to be selected by the student and his adviser.

(3) *Distributive Education:* B.A. 106, 115, 119, 130, 133, 134.

(4) *General Business:* B.A. 19, 115, 119, plus 5 credits from each of the following fields: Accounting, Secretarial Administration, and Marketing.

First minor: B.A. 12,* 13,* 14,* 16,* 17,* 19,* 54, 62, 63, plus Education 75E, and 75F.

Second minor: B.A. 12,* 13,* 14,* 16,* 17,* 19,* 54, 62, plus either Education 75E or 75F.

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 institutions offering such training. Fifteen credits are required for a minor and 30 for a major.

7. Sign an oath of allegiance.

8. Pass a health examination within six months prior to the time the certificate is granted.

9. File an application for the Three-year Secondary Certificate not later than the beginning of the fifth year. Approval must be secured, by petition, from the College of Education for the complete program and the specific courses when the candidate wishes to take courses at another institution to apply on the fith year.

Elementary Teacher Training

By legislative action of the 1949 session, the University of Washington is now authorized to train elementary teachers. At the present time the permanent four-year elementary curriculum is being developed. Further information may be secured from the College of Education advisory staff.

* Students who have earned credits elsewhere comparable to Business Administration 12, 13, 14, 16, 17, and 19, which have been approved by the College of Business Administration, may substitute other approved courses in Business Administration to complete the total number of required credits in either the major or the minor.

Requirements for Teacher-Librarians

(For curricula in the School of Librarianship, see page 168.)

A high school librarian's certificate is required of all librarians in accredited high schools. Applicants must hold secondary certificates and must have completed:

(a) For librarianship in schools with enrollment of 100 or less: A minimum of 7½ quarter credits in approved courses in Library Science.

(b) For librarianship in schools with enrollment of 100-200: A minimum of 15 quarter credits in approved courses in Library Science.

(c) For librarianship in schools with enrollment of 200-500: One year of training in an approved library school recommended. The minimum requirement for schools in this group is the same as requirement (b) above.

(d) For librarianship in schools with enrollment of 500 or more: One year of training in an approved library school.

Special Certificates and Credentials

For information on special types of certificates and credentials, see the State bulletin on "Certification of Teachers and Administrators" which may be obtained from the State Office of Public Instruction at Olympia, Washington.

Renewal of Three-Year Teaching Certificates

Renewal of the University Three-Year Teaching Certificates must be made through the State Office of Public Instruction at Olympia some time before the expiration date of the original certificate, since a *lapsed certificate may be reinstated only upon completion of additional course work.*

Transfer Students

Requirements for graduation:

Upon receipt of transcripts from institutions previously attended, the University of Washington Admissions office will evaluate the student's record and designate deficiencies. From this evaluation the adviser and the student plan the program for a degree and for the secondary teaching certificate.

In addition to the regular departmental requirements in the student's major, he must complete 9 credits of Education at the University.

Certification requirements (secondary) for graduate transfer students:

Transfer students who have been graduated from an approved four-year secondary teacher-training institution are accepted on a graduate basis, but they will be required to meet all the professional undergraduate requirements before the Three-Year Secondary Certificate is issued. Claims for exemption from specific requirements are passed upon by the Registrar and the Dean of the College of Education. After three quarters at the University of Washington, the student's grade point is based on grades received at this institution and must meet the 2.2 requirement to qualify for the secondary teaching certificate.

It is necessary for a transfer student to earn 9 credits in Education courses, 10 credits in the academic major, and 5 credits in each academic minor at the University of Washington.

Students who are out-of-state graduates may certify through the State Department of Public Instruction at Olympia if they have been graduated from an approved secondary teacher-training institution. The required course work may be taken at the University.

Bureau of Teacher Service and Placement

A Bureau of Teacher Service and Placement is maintained to assist qualified students and graduates in obtaining educational placement. Students who wish to use 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. Students should register with the Bureau, 263-A Education Hall, during their fifth year.

Requirements for Administrators' Credentials in Accredited Districts

All persons interested in administrative positions should note carefully the basic state requirements given below. Further details concerning administrators' credentials may be secured from the State Office of Public Instruction at Olympia.

Principals of elementary schools with six or more teachers must qualify for elementary principals' credentials; junior high school principals must qualify for junior high school principals' credentials; and high school principals devoting at least two hours per day to intraschedule administrative duties must qualify for high school principals' credentials.

Principals of union high schools and superintendents of districts with one or more elementary schools and an accredited high school must qualify for superintendents' credentials.

A teaching certificate on the proper level is a prerequisite to an administrator's credential. This certificate must be kept in force to keep the credential valid.

Elementary Principal's Credential

a. Two or more years of successful experience as principal of an elementary school of six or more teachers prior to September 1, 1936, *or*
b. At least two years of successful teaching experience in the elementary school or the junior high school, plus 12 quarter credits of professional courses relating to elementary administration and supervision taken subsequent to at least one year of teaching experience. Not less than 6 of the required number of quarter credits must be from List A below and must cover at least 2 of the enumerated fields. The remaining credits may be from either list. Other courses within the field of elementary education may also be offered subject to evaluation. All courses presented toward satisfying the requirements for an elementary principal's credential must have been completed within ten years prior to date of application.

LIST A: Elementary Curriculum; Elementary Administration and Supervision; Elementary School Methods; Guidance.

LIST B: Tests and Measurements; Kindergarten; Health and Physical Education; Remedial Education.

An elementary certificate is a prerequisite to an elementary principal's credential.

Junior High School Principal's Credential

a. Two or more years of successful experience as principal of a junior high school prior to September 1, 1936, *or*
b. Completion of not less than four years of professional preparation and at least two years of successful teaching experience in the common schools, plus 12 quarter credits of professional courses relating to junior high school administration and supervision taken subsequent to at least one year of teaching experience. Not less than 6 of the required number of quarter credits must be from List A indicated below and must cover at least two of the enumerated fields. The remaining courses may be from either list. Other courses within the field of junior high school education may be offered subject to evaluation. All courses presented toward satisfying the requirements for a junior high school principal's credential must have been completed within ten years prior to date of application.

LIST A: Junior High School Administration and Supervision *or* High School Administration and Supervision; Junior High School Curriculum; Junior High School Methods; Guidance.

LIST B: Adolescence; Extracurricular Activities; Tests and Measurements; Health and Physical Education.

An elementary or secondary certificate is a prerequisite to a junior high school principal's credential.

Senior High School Principal's Credential

a. Two or more years of successful experience as a high school principal prior to September 1, 1934, *or*
b. At least two years of successful teaching experience on the secondary level, plus 12 quarter credits of professional courses relating to secondary organization, supervision, and administration taken subsequent to at least one year of teaching experience. Not less than 6 of the required number of quarter credits must be from List A (page 149) and must cover at least two of the enumerated fields. The

remaining credits may be from either list. Other courses within the field of secondary education may be offered subject to evaluation. All courses presented toward satisfying the requirements for the high school principal's credential must have been completed within ten years prior to date of application.

LIST A: High School Administration and Supervision; High School Curriculum; Guidance; School Finance.

LIST B: Educational Research; Extracurricular Activities; Health and Physical Education; Tests and Measurements.

A secondary certificate is a prerequisite to a high school principal's credential.

Superintendent's Credential

The candidate may qualify under any *one* of the headings listed below.

a. At least two years of successful experience as a superintendent prior to September 1, 1934.

b. At least four years of successful administrative experience, including two years as principal of an elementary school of six or more teachers and two years as principal of a high school, head of a high school department with six or more teachers, or supervisor. While serving as high school principal, department head, or supervisor, at least two hours per day must have been devoted to administrative duties. (In order to qualify for a superintendent's credential on the basis of the above requirements, it is necessary to be in possession of both the elementary and the high school principals' credentials. It is also necessary to submit proof of having served in an elementary school of six or more teachers; and in the case of the high school experience, proof of having devoted at least two hours per day to administrative duties. Only a candidate who gained his experience prior to September 1, 1934, may qualify under Part b and not be in possession of both the elementary and senior high school principals' credentials.)

c. At least two years of successful experience as principal of an elementary school of six or more teachers, plus 12 quarter credits of professional courses relating to organization, administration, and supervision in secondary schools taken subsequent to at least one year of teaching experience. These educational requirements are in addition to the minimum required for initial certificaton on the secondary level.

d. A junior high school principal whose training has been on the secondary level may apply for a superintendent's credential on the basis of two years of successful experience as principal of a regularly organized junior high school, plus 24 quarter credits of professional courses relating to organization, administration, and supervision of elementary education taken subsequent to one year of teaching experience; a junior high school principal whose training has been on the elementary level, may apply for a superintendent's credential on the basis of two years of successful experience as principal of a regularly organized junior high school, plus 12 quarter credits relating to organization, administration, and supervision in secondary schools taken subsequent to one year of teaching experience; this provision does not rescind any regulations or requirements already in effect.

e. At least two years of successful experience as a high school principal, head of a high school department, or supervisor, plus 24 quarter credits of professional courses relating to organization, administration, and supervision of elementary education taken subsequent to at least one year of teaching experience. While serving as a high school administrator, at least two hours per day must have been devoted to administrative duties. These educational requirements are in addition to the minimum required for certification on the secondary level. Not less than 6 of the required number of quarter credits must be from List A and must cover at least three of the enumerated fields, one of which must be school finance. The remaining credits may be from either list. Other courses within the prescribed field may be offered subject to evaluation.

Elementary Courses in Lieu of Experience:

LIST A: Elementary Curriculum; Elementary School Administration and Supervision; Elementary School Methods; School Finance; Guidance.

LIST B: Tests and Measurements; Kindergarten; Health and Physical Education; Remedial Education.

Secondary Courses in Lieu of Experience:

LIST A: High School Administration and Supervision; High School Curriculum; Guidance; School Finance.

LIST B: Educational Research; Extracurricular Activities; Health and Physical Education; Tests and Measurements.

It should be carefully noted that training may be substituted in lieu of administrative experience on one level or the other but not on both. In other words, a candidate for a superintendent's credential must have had at least two years of successful experience as a teacher, plus two years of successful experience as an elementary, junior, or senior high school principal, or as a supervisor or head of a department in a senior high school and as such have devoted at least two hours per day to administrative duties.

Courses that are not acceptable as graduate credit for the M.A. or Ph.D. degree at the University of Washington or the State College of Washington or at other institutions authorized to grant such degrees and accredited by the State Board of Education shall not be accepted for a superintendent's credential, except that when the teaching certificate has been earned in a secondary teacher-training institution one-half of the 24 academic credits in elementary education in lieu of elementary administrative experience required for the superintendent's credential may be secured on the undergraduate level at an elementary teacher-training institution maintaining a laboratory school. Courses completed more than ten years prior to applications are not acceptable. A course in School Finance is required for a superintendent's credential.

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.

A secondary teaching certificate is a prerequisite to a superintendent's credential, and must be kept in force during the time a person is using a superintendent's credential.

COLLEGE OF ENGINEERING

HAROLD E. WESSMAN, *Dean*, 206 Guggenheim Hall

Curricula and Degrees

The College of Engineering offers four-year curricula leading to the bachelor of science degree in aeronautical, chemical, civil, electrical, mechanical, mining, metallurgical, or ceramic engineering. All of these curricula are accredited by the Engineers' Council for Professional Development, which is the principal accrediting agency recognized by the engineering profession in the United States.

In addition to the four-year curricula, the College offers a course of study in industrial engineering for which a second bachelor's degree is awarded at the end of five years. The first four of these comprise the standard four-year curriculum of any one of the major branches of engineering in which the College grants a bachelor's degree, while the fifth year is made up of courses in industrial management and related subjects.

With minor exceptions, all curricula in the College of Engineering have a common freshman year administered by the General Engineering Department. Beyond the first year, the curriculum in each branch consists largely of prescribed* technical subjects and studies in the humanistic-social area, the latter representing approximately 20 per cent of the total required credits.

Teaching Certificate

Engineering students who plan to prepare for high school teaching should consult with the College of Education as soon as possible.

* Electives must be approved by the department adviser at the time the student registers for the courses. Army and Navy R.O.T.C. students may not use more than 9 quarter credits in advanced Army and Navy subjects to satisfy unrestricted elective credits appearing in any engineering curriculum.

Advanced Degrees

Graduate study leading to the master's degree is available in each major curriculum. In addition, work leading to the Ph.D. degree in "Chemistry and Chemical Engineering" is offered by these two departments. Advanced study beyond the master's degree is available in several other departments by special arrangement. Graduate courses in engineering are listed in Section II under the respective departmental curricula. Course descriptions will be found in Section III of the Catalogue. Requirements for advanced degrees are discussed in the Graduate School section, page 179.

Professional Degrees

Requirements for professional degrees are given on page 187.

Fellowships, Scholarships, Prizes

Information concerning the fellowships, scholarships, prizes and awards available at the University is given on page 98. Requests for information regarding those open to engineering students should be addressed to the University Scholarship Committee, 204 Clark Hall, University of Washington, Seattle 5. See page —? for information in regard to Engineering Experiment Station Graduate Fellowships.

Admission Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 75-80. In addition to the all-University entrance requirements, the College of Engineering requires one unit* each of elementary algebra, plane geometry, physics†, and chemistry, and one-half unit each of advanced algebra and solid geometry. Trigonometry, although not required, is a strongly recommended high school elective.

Students who plan to register in chemical engineering and who desire a foreign language in high school, are urged to take a year or more of German, as German will be of greatest usefulness to them.

It is strongly recommended that high school students make every possible effort to complete the foregoing list of required subjects before entering the Engineering College. Under certain circumstances, however, and with the approval of the dean of the College, deficiencies in specific college requirements may be removed after entrance to the University. If a student who applies for admission to the College of Engineering has deficiencies in required subjects totalling more than one unit, he will normally be directed to register in the College of Arts and Sciences until the deficiencies are removed, at which time he will be permitted to transfer to Engineering.

Admission to the College of Engineering is still on a selective basis. Each applicant will be considered on the strength of his previous record, with special attention given to proficiency in English, mathematics, chemistry and physics.

Students who become irregular in their college program because of the need for removing high school deficiencies, or for other reasons, may attend during the summer sessions to become regular again.

Preparation in Algebra

It is essential that students in engineering possess a good working knowledge of algebra *at the beginning of their course.* A test in high school algebra by class work and by examination will be given shortly after the beginning of the first quarter. 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 I, College of Arts and Sciences) during the first quarter.

Humanistic-Social Studies

Under this heading is included an integrated succession of courses designed to develop facility in comprehensive reading, in analysis of thought, and in oral and written expression. To ensure establishment and maintenance of these skills, the

* A "unit" is applied to work taken in 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.

† The high school pre-aviation course may not be substituted for the physics requirement. It will, however, be accepted as academic credit in science.

courses begin in the freshman year and—in as many as possible of the engineering curricula—continue in unbroken sequence through the three years following. Stress is laid on expository writing, particularly engineering reports, and on public speaking.

The subject matter covered, basically humanistic, is intended to acquaint the engineering student with the broad outline of human knowledge, setting before him the advance of civilization and introducing him to a few of its great thinkers, artists, and men of action. With this foundation, by the time he graduates a student should be able to seek out and to attain for himself the additional knowledge, fuller appreciation, and sense of moral responsibility that distinguish the cultured citizen of today, whatever his vocation.

Scholarship Requirements

The all-University scholarship rule requires 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.

In addition to the all-University scholarship requirements the scholarship rules of the College of Engineering provide:

1. That as a prerequisite to registration for required junior and senior courses in any engineering curriculum a student must have earned a grade-point average of at least 2.2 in the required subjects of the first two years.
2. That a candidate for a bachelor's degree in engineering must have earned a grade-point average of at least 2.2 in the upper-division subjects of his major department.

Description of Courses

For descriptions of courses offered by the College of Engineering, see page 219.

ENGINEERING LABORATORIES

Aeronautical Engineering. Five different wind tunnels and a small supersonic laboratory are available for class instruction and research in the field of aerodynamics. Largest of the wind tunnels, the F. K. Kirsten Aeronautical Laboratory has been used for aerodynamic research and industrial testing since it was completed in 1937. It is a wind tunnel suitable for testing model airplanes with eight to ten foot span. It has a test section measuring 8 ft. by 12 ft., and its maximum air speed is 250 mph. The field of aeronautical structures is served by special equipment for studying the behavior of aircraft structures under load. Universal testing machines ranging in load capacity from 60,000 to 2,400,000 pounds are available in the Civil Engineering Structural Research Laboratory.

The department maintains a well equipped machine and model shop, staffed by full-time employees, which is used by undergraduate and graduate students working on special problems.

Chemical Engineering. The Department of Chemical Engineering is housed in Daniel Bagley Hall where, in addition to well-equipped laboratories for instruction in chemistry, a number of laboratories with extensive special equipment are provided for students in chemical engineering courses. The two-story chemical engineering unit operations laboratory contains equipment for study of fluid flow, heat transfer, evaporation, absorption, distillation, centrifuging, drying, filtration, and crystallization. In a separate room is grinding and sieving equipment. An industrial chemistry laboratory has pilot-plant-size equipment for study of chemical processing. Unusually complete equipment is available for study of paper pulping processes on a pilot-plant basis, and for laboratory investigations of electrochemistry. Machine, instrument, and glass-blowing shops staffed by full-time employees are maintained. A wide variety of special equipment for research is used by seniors and graduate students for thesis investigations. A branch library in Bagley Hall houses a special collection of reference books and periodicals in chemistry and chemical engineering.

Civil Engineering. The University has the only large wind tunnel in the country for the aerodynamic testing of bridges. The recently completed More Hall houses the modern structural, concrete, mineral aggregates, soil mechanics, bituminous, and sanitary engineering laboratories.The Structural Laboratory houses a 2,400,000-pound

testing machine with 120 inches between screws, a number of smaller machines ranging in capacity from 60,000 to 300,000 pounds, and complete electronic apparatus for stress and strain measurement. The Concrete Laboratory contains exceptionally complete facilities for making, curing, and testing concrete specimens. The Aggregates Laboratory houses apparatus for testing the hardness, soundness, and wearing qualities of rock, and for unusually complete control of grading. The Soil Mechanics Laboratory is of top rank in this field, and is equipped for all generally recognized tests encountered in foundation and earthwork engineering. The Bituminous Laboratory contains apparatus for the usual tests required of asphaltic roadbuilding materials, and is exceptionally well-equipped for research in the design of stable bituminous surfacings. A complete Sanitary Engineering Laboratory for the chemical, bacteriological and microscopic analysis of water, sewage, and industrial wastes is available for both undergraduate and graduate study and professional research. The Hydraulics Laboratory, located on the shore of Lake Union, is equipped with the latest facilities for investigations and laboratory studies of many problems in experimental hydraulics and waterpower. It is supplemented by a half-acre outdoor laboratory for construction and study of models of river channels.

Electrical Engineering. The Electrical Engineering Laboratories are all located in Electrical Engineering Hall, a modern, four-story building completed in 1948. The main laboratories are classified as follows: electrical machinery, communications, transients, impulse generator (high-voltage), power transmission line, illumination, industrial control, and electrical measurement. In addition, a number of smaller laboratories are available for research and special uses.

The large machinery laboratory is exceptionally well-equipped for the study and testing of direct and alternating current motors and generators, transformers, induction regulators, and other auxiliary equipment. Experiments involving the operation of electrical machines are also run in the adjacent industrial controls laboratory where power rectifiers, electronic apparatus, relays, and other necessary devices are available. The communications laboratory is equipped with the latest facilities for the study of vacuum tube circuits and equipment; wire transmission, including line characteristics, filters and other terminal apparatus; and ultra-high frequency theory and practice. The electrical measurements laboratory, used by all groups of students, is equipped for measuring a wide variety of electrical and magnetic quantities in addition to the basic factors such as voltage, current, and power.

The other laboratories are used for senior elective courses and graduate instruction. Included among the special laboratories are ten rooms, which accommodate from two to six students each, used for work on special problems and graduate research. One of these laboratories, located in a penthouse on the roof, is specially designed to house radio transmitting and receiving equipment, having antenna towers on the roof nearby. Also, one such room is assigned to the department's amateur radio club.

Mechanical Engineering. Mechanical Engineering laboratory facilities may be grouped into three main classifications. One group serves the courses in production methods and includes the conventional equipment of a foundry, forge and weld shop, and machine shop, together with special machines, such as the power-roll-over-and-rap and electronic profiler. Available also is appropriate testing and gaging apparatus, including physical testing equipment for foundry and core sands; electronic interferometer, and air precision gaging devices.

A second laboratory is equipped to exemplify practices and to provide for research projects in the heat-power field. It contains all of the common types of heat-power and refrigeration machines, steam engines and turbines, gas, gasoline and Diesel engines, with the necessary auxiliary equipment, such as dynamometers, condensers and heat-exchangers for the study of heat balances. An adjunct laboratory is equipped for the testing of lubrication oils and fuels, including "knock" testing of gasoline.

A third laboratory provides facilities for the study of engineering materials. It has three universal testing machines, an impact machine, a fatigue machine, plastic molding equipment, very complete hardness testing equipment, metalloscope for metallographic investigations, apparatus for strength determination by photoelastic and electronic strain gage methods, and industrial x-ray and Zyglo inspection equipment. Apparatus for the study of vibrations, including a torsiograph, is a part of this laboratory, as are devices for the study of engineering materials at high and low temperatures.

Mining Engineering. Laboratory facilities, located in Roberts Hall, include full-scale commercial equipment supplemented with laboratory testing machines of the latest design. Models and maps illustrate the large features of mine practice while power rock drills, placer drills, air compressors, electrical equipment, mine timber, etc., are available for the study of smaller details. Concentrating machinery for ore and coal occupies three floors in the laboratory, and analytical and microscope laboratories are available for the study of mineral products.

Metallurgical Engineering. The upper floor of Roberts Hall houses the metallurgical laboratory. It contains facilities for making analyses, many types of furnaces for melting or treating ores and metals, equipment for polishing and examining metal specimens, including metallographic cameras, a number of student and research microscopes, a fuels analytical laboratory, a photographic darkroom, and equipment for testing the physical properties of metals such as hardness and tensile strength.

Ceramic Engineering. The ceramic laboratories occupy the central portion of Roberts Hall on three floors, and the kiln building nearby. Here are available a full range of testing and firing kilns for industrial wares and other products. Prominent among them are a special high temperature furnace for large ware and a large pottery kiln. All are oil or gas fired and are equipped with recording pyrometers. The mechanical equipment consists of grinding mills, mullers and grinding pans, physical testing equipment, microscopes with polishing and grinding wheels, a photographic darkroom, interferometer, thermalanalysis furnace, glazing hoods and spray equipment, pebble mills, and other grinding and crushing machinery, potters' wheels, molds and the small items required to make a laboratory complete for study in every phase of the ceramic industry.

CURRICULA OF THE DEPARTMENTS OF ENGINEERING

FRESHMAN

(The same for all curricula.)

Autumn Quarter	*Credits*	*Winter Quarter*¶	*Credits*	*Spring Quarter*	*Credits*
*Chem. 24. General	3	*Chem. 25. General	3	*Chem. 26. General	3
‡Math. 51. Engr. Trig.	3	Math. 52. Higher Algebra.	5	Math. 53. Analytic Geom. and Calculus	5
G.E. 1. Engr. Drawing	3	G.E. 2. Engr. Drawing	3	G.E. 3. Drafting Probs.	3
G.E. 11. Engr. Problems.	3	G.E. 12. Engr. Problems.	3	†G.E. 21. Surveying	3
†P.E. 75. Hygiene	2	P.E., and Mil. or Naval Science +		¶H-S.S. 40. Engr. Report Writing	1
P.E., and Mil. or Naval Science +			14+	P.E., and Mil. or Naval Science +	
	14+				

* Students without high school chemistry substitute Chem. 1 and 2 (5 cr. each) for Chem. 24 and 25.

Students expecting to take chemical, ceramic, metallurgical, or mining engineering substitute Chem. 21, 22, and 23 (5 cr. each) for Chem. 24, 25, and 26.

† Chemical engineering students omit G.E. 21 and take P.E. 75 in the spring quarter.

‡ Students who have had high school trigonometry and also pass a qualifying examination may omit Math. 51 and take Math. 52.

¶ Mineral engineering sudents take H-S.S. 40 in the second quarter and H-S.S. 61 in the third quarter of the freshman year.

Aeronautical Engineering

DEGREES: Bachelor of Science in Aeronautical Engineering (at end of fourth year) and Master of Science in Aeronautical Engineering or Master of Science in Engineering (at the end of the fifth year)

FRESHMAN

(The same for all curricula. See page 154.)

SOPHOMORE

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Phys. 97. Engr. Physics	4	Phys. 98. Engr. Physics	4	Phys. 99. Engr. Physics	4
Math. 61. Analytic Geom. and Calculus	5	Math. 62. Engr. Calculus	3	Math. 63. Engr. Calculus	3
M.E. 81. Mechanism	3	A.E. 81. Intro. to Aero	2	C.E. 92. Mechanics	3
M.E. 82. Heat Engines	3	C.E. 91. Mechanics	3	E.E. 101. Direct Currents	5
M.E. 53. Metal Castings	1	M.E. 54. Welding	1	M.E. 55. Metal Machining	1
H-S.S. 61. Comm. Techniques I	1	Econ. 66. Economics	3	H-S.S. 63. Comm Techniques III	1
P.E., and Mil. or Naval Science	+	H-S.S. 62. Comm. Techniques II	1	P.E., and Mil. or Naval Science	+
	17+	P.E., and Mil. or Naval Science	+		17+
			17+		

JUNIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
C.E. 93. Mechanics	3	A.E. 101. Aerodynamics	3	A.E. 100. Aircr. Engines	3
C.E. 142. Hydraulics	5	M.E. 183. Thermodynamics	5	A.E. 102. Aerodynamics	3
E.E. 121. Altern. Currents	5	M.E. 102. Engr. Materials	3	A.E. 104. Lab. Methods	3
H-S.S. 131. Human. I	3	M.E. 111. Machine Design	3	M.E. 112. Machine Design	3
	16	H-S.S. 132. Human. II	3	M.E. 104. Mfg. Methods	2
			17	H-S.S. 191. Reading I	1
					15

SENIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
A.E. 103. Airpl. Perform.	3	A.E. 111. Airpl. Design	4	A.E. 112. Design Loads	2
A.E. 105. Airfoil Test L.	2	A.E. 172. Aircr. Struct. Anal.	4	A.E. 174. Aircr. Mon. Struct.	3
A.E. 171. Aircr. Struct. Anal.	4	A.E. 189. Seminar	0	A.E. 175. Struct. Test	2
A.E. 188. Seminar	0	B.A. 166. Industrial Rel.	3	A.E. 190. Seminar	1
Psych. 122. Industrial	3	Electives*	4	B.A. 57. Business Law	3
Electives*	3		15	Electives*	4
	15				15

* Students planning graduate work must elect Math 114.

GRADUATE†

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Major Subjects*	6	Major Subjects*	6	Major Subjects*	6
Anal. in Aeron.	3	Anal. in Aeron.	3	Related Subjects	6
Related Subjects	3	Related Subjects	3	Thesis	3
Thesis	3	Thesis	3		

Aerodynamics Option	*Structures Option*	*Dynamics Option*
A.E. 201. Theor. Aerodyn. I	A.E. 204. Aircr. Vibrations	A.E. 204. Aircr. Vibrations
A.E. 202. Aerodyn. of Compres. Fluids I	A.E. 224. Aircr. Structures	A.E. 224. Aircr. Structures
A.E. 203. Stability and Control	A.E. 225. Aircr. Structures	A.E. 227. Exper. Stress Anal.
A.E. 205. Theor. Aerodyn. II	A.E. 226. Aircr. Structures	A.E. 244. Dyn. of the Airpl.
A.E. 207. Aerodyn. of Compres. Fluids II	A.E. 227. Exper. Stress Anal.	A.E. 245. Dyn. of the Airpl.
A.E. 208. Internal Aerodyn.	A.E. 228. Theor. of Plasticity	A.E. 246. Aero-Elasticity
A.E. 244. Dyn. of the Airpl.	A.E. 244. Dyn. of the Airpl.	A.E. 247. Theory of Rocket Flight
A.E. 246. Aero-Elasticity	C.E. 221. Theory of Elastic.	A.E. 248. Servo-mech. and autom. control in Aeronau.

* A total of at least 18 credits are to be selected from one of the following groups of courses:
† Requirements for advanced degrees will be found in the Graduate School section. Selection of courses must in all cases be approved in advance by executive officer of the department.

Chemical Engineering

DEGREES: Bachelor of Science in Chemical Engineering (at end of fourth year) and Master of Science in Chemical Engineering or Master of Science in Engineering (at end of fifth year)

FRESHMAN

(The same for all curricula. See page 154.)

SOPHOMORE

Autumn Quarter	*Credits*
Physics 97. Engr. Physics.	4
Math. 61. Analytic Geom. and Calculus	5
Ch.E. 51. Ind. Chem. Calc.	2
Chem. 107. Quant. Anal.	4
M.E. 54. Welding	1
H-S.S. 61. Comm. Techniques I	1
P.E., and Mil. or Naval Science	+
	17+

Winter Quarter	*Credits*
Physics 98. Engr. Physics.	4
Ch.E. 52. Ind. Chem. Calc.	2
Chem. 108. Quant. Anal.	4
M.E. 82. Heat Engines	3
Econ. 66. General Econ.	3
H-S.S. 62. Comm. Techniques II	1
P.E., and Mil. or Naval Science	+
	17+

Spring Quarter	*Credits*
Physics 99. Engr. Physics.	4
Ch.E. 53. Ind. Chem. Calc.	2
Chem. 102. Adv. Qual. Anal.	4
C.E. 92. Mechanics	3
M.E. 55. Metal Machining	1
H-S.S. 63. Comm. Techniques III	1
P.E., and Mil. or Naval Science	+
	15+

JUNIOR

Autumn Quarter	*Credits*
Chem. 181. Phys. and Theor. Chem.	5
Chem. 131. Organic Chem.	3
Chem. 128. Org. Chem. Lab.	2
M.E. 111. Machine Design	3
H-S.S. 131. Human. I	3
	16

Winter Quarter	*Credits*
Chem. 182. Phys. and Theor. Chem.	5
Chem. 132. Organic Chem.	3
Chem. 129. Org. Chem. Lab.	2
E.E. 101. Direct Currents	5
	15

Spring Quarter	*Credits*
Chem. 183. Phys. and Theor. Chem.	5
E.E. 121. Alt. Currents	5
Ch.E. 170. Unit Operations	3
H-S.S. 132. Human. II	3
	16

SENIOR

Autumn Quarter	*Credits*
Ch.E. 121. Chem. of Engr. Materials	5
Ch.E. 171. Unit Operations	4
Ch.E. 176. Thesis	2
Psych. 122. Industrial	3
H-S.S. 191. Reading I	1
	15

Winter Quarter	*Credits*
Ch.E. 122. Inorganic Chem Industries	5
Ch.E. 172. Unit Operations	4
Ch.E. 177. Thesis	2
B.A. 166. Industrial Rel.	3
H-S.S. 192. Reading II	1
	15

Spring Quarter	*Credits*
Ch.E. 123. Organic Chem. Industries	5
Ch.E. 173. Unit Operations	4
Ch.E. 178. Thesis	1
H-S.S. 193. Reading III	1
B.A. 57. Business Law	3
	14

GRADUATE†

Autumn Quarter	*Credits*
Chem. Engr. and Allied Work	12
Ch.E. 300. Research	3
	15

Winter Quarter	*Credits*
Chem. Engr. and Allied Work	12
Ch.E. 300. Research	3
	15

Spring Quarter	*Credits*
Chem. Engr. and Allied Work	12
Ch.E. 300. Research	3
	15

† Requirements for advanced degrees will be found in the Graduate School section.

Civil Engineering

DEGREES: Bachelor of Science in Civil Engineering (at end of fourth year) and Master of Science in Civil Engineering or Master of Science in Engineering (at end of fifth year)

FRESHMAN

(The same for all curricula. See page 154.)

SOPHOMORE

Autumn Quarter	*Credits*
Phys. 97. Engr. Phys.	4
Math. 61. Analytic Geom. and Calculus	5
C.E. 91. Mechanics	3
Econ. 66. Gen. Econ.	3
H-S.S. 61. Comm. Techniques I	1
P.E., and Mil. or Naval Science	+
	16+

Winter Quarter	*Credits*
Phys. 98. Engr. Phys.	4
Math. 62. Engr. Calc.	3
C.E. 92. Mechanics	3
Geol. 10/110. Engr. Geol.	5
H-S.S. 62. Comm. Techniques I	1
P.E., and Mil. or Naval Science	+
	16+

Spring Quarter	*Credits*
Phys. 99. Engr. Phys.	4
M.E. 81. Mechanism, or M.E. 82. Heat Engr.	3
C.E. 93. Mechanics	3
E.E. 101. Dir. Currents	5
H-S.S. 63. Comm. Techniques III	1
P.E., and Mil. or Naval Science	+
	16+

JUNIOR

Autumn Quarter	*Credits*
C.E. 142. Hydraulics	5
C.E. 171. Struct. Anal.	3
C.E. 112. Route Surv.	3
E.E. 121. Alt. Currents	5
	16

Winter Quarter	*Credits*
C.E. 143. Hyd. Engr.	5
C.E. 172. Struct. Anal.	3
C.E. 163. Timb.-Steel Lab.	3
C.E. 113. Location and Earthwork	3
H-S.S. 191. Reading I	1
	15

Spring Quarter	*Credits*
C.E. 121. Roads & Pvmts.	3
C.E. 173. Struct. Anal.	3
C.E. 162. Cem.-Conc. Lab.	3
C.E. 114. Intermed. Surv.	3
C.E. 150. San. Science	3
H-S.S. 192. Reading II	1
	16

SENIOR

Autumn Quarter	*Credits*
C.E. 175. Struct. Design	3
Tech. Elec.	3
C.E. 166. Soil Mechanics	3
Psych. 122. Industrial	3
H-S.S. 131. Human. I	3
	15

Winter Quarter	*Credits*
C.E. 176. Struct. Design	3
Tech. Elec.	6
B.A. 166. Industrial Relations	3
H-S.S. 132. Human. II	3
	15

Spring Quarter	*Credits*
C.E. 177. Struct. Design	3
Tech. Elec.	5
B.A. 57. Bus. Law	3
H-S.S. 133. Human. III	3
	15

GRADUATE†

Autumn Quarter	*Credits*
C.E. and Allied Work	9
Thesis	3
Electives*	3
	15

Winter Quarter	*Credits*
C.E. and Allied Work	9
Thesis	3
Electives*	3
	15

Spring Quarter	*Credits*
C.E. and Allied Work	9
Thesis	3
Electives*	3
	15

† Requirements for advanced degrees will be found in the Graduate School section.
* Electives must in all cases be approved in advance by the head of the department.

SENIOR AND GRADUATE TECHNICAL ELECTIVE COURSES

All electives must be approved in advance by the department

	Credits
C.E. 115. Geod. Surv'g. & Photogrammetry	3
C.E. 122. Railway Engineering	3
C.E. 123. River and Harbor Engineering	3
C.E. 124. Highway Design	3
C.E. 126. Airfield Design	3
C.E. 145. Hydraulic Machinery	3
C.E. 147. Hydraulic Power	3
C.E. 153. Regional Planning	3
C.E. 154. Sanitary Design	3
C.E. 155. Water Supply Problems	3
C.E. 157. Reclamation	3
C.E. 158. Sewage Disposal	3
C.E. 167. Earthwork Engineering	3
C.E. 168. Engineering Properties of Soils	3
C.E. 191. Special Senior and Graduate Courses in Professional Design, H, M, S, W, or T* (each)	3-5
C.E. 192. Port Development	4
B.A. 62. Accounting	5
Math. 114, 115. Differential Eq.	3, 3
P.H. 124. Industrial Hygiene	3

	Credits
C.E. 209. Engineering Relations	2
C.E. 220. Seminar	2
C.E. 221. Theory of Elasticity	3
C.E. 223. Adv. Strength of Materials	3
C.E. 225. Elastic Stability	3
C.E. 228. Transportation Administration	3
C.E. 233. Port Development	4
C.E. 247. Adv. Hydraulic Power	4
C.E. 260. Photoelasticity	3
C.E. 267. Adv. Soil Mechanics	4
C.E. 268. Applied Soil Mechanics	3
C.E. 281. Advanced Structures I	3
C.E. 282. Advanced Structures II	3
C.E. 283. Advanced Structures III	3
C.E. 295. Adv. Professional Design, H. M. S, W, or T*, max. credit in any one field	15
C.E. 300. Research. Credit to be arranged.	
Thesis. Max. total	9

* Hydraulics (H), Materials (M), Structural (S), Sanitary (W), and Transportation (T).

Electrical Engineering

DEGREES: Bachelor of Science in Electrical Engineering (at end of fourth year) and Master of Science in Electrical Engineering or Master of Science in Engineering (at end of fifth year)

FRESHMAN

(The same for all curricula. See page 154.)

SOPHOMORE

Autumn Quarter	*Credits*
Physics 97. Engineering	4
Math. 61. Analytic Geom. and Calculus	5
E.E. 71. D-C Circuits	5
M.E. 53. Metal Castings	1
H-S.S. 61. Comm. Techniques I	1
P.E., and Mil. and Naval Science	+
	16+

Winter Quarter	*Credits*
Physics 99. Engineering	4
Math. 62. Engr. Calculus	3
C.E. 91. Mechanics	3
M.E. 82. Heat Engineering	3
E.E. 72. D-C Meas.	2
H-S.S. 62. Comm. Techniques II	1
P.E., and Mil. or Naval Science	+
	16+

Spring Quarter	*Credits*
E.E. 75. D-C Mach.	6
Math. 63, Engr. Calculus	3
C.E. 92. Mechanics	3
M.E. 83. Mech. Eng. Lab.*	3
H-S.S. 63. Comm. Techniques III	1
P.E., and Mil. or Naval Science	+
	16+

JUNIOR

Autumn Quarter	*Credits*
E.E. 159. A-C Circuits	5
M.E. 81. Mechanism	3
M.E. 102. Eng. Materials	3
M.E. 54. Welding	1
H-S.S. 131. Humanities I	3
	15

Winter Quarter	*Credits*
E.E. 161. A-C Mach.‡	4
E.E. 162. A-C Mach. Lab.‡	4
M.E. 111. Machine Design	3
M.E. 55. Metal Machining	1
H-S.S. 132. Humanities II	3
	15

Spring Quarter	*Credits*
E.E. 181. Vac. Tubes and Electronics	6
E.E. 163. Adv. A-C Mach.‡	6
H-S.S. 133. Humanities III	3
	15

SENIOR

Autumn Quarter	*Credits*
E.E. 183. Vac. Tube Circuits§	6
Econ. 66. Economics	3
M.E. 112. Mach. Design*.	3
Psych. 122. Industrial	3
H-S.S. 191. Reading I	1
	16

Winter Quarter	*Credits*
E.E. 199. Field Theory	3
E.E. 195. Transients	4
Phys. 155. Modern Physics	3
C.E. 142. Hydraulics	5
H-S.S. 192. Reading II	1
	16

Spring Quarter	*Credits*
E.E. Group	3
B.A. 57. Business Law	3
B.A. 166. Indus. Relations	3
Electives	5
H-S.S. 193. Reading III	1
	15

GRADUATE†

Autumn Quarter	*Credits*
E.E. and Allied Work	12
Thesis	3
	15

Winter Quarter	*Credits*
E.E. and Allied Work	12
Thesis	3
	15

Spring Quarter	*Credits*
E.E. and Allied Work	12
Thesis	3
	15

All electives must be approved by the head of the department.

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* Students with a cumulative grade point of 3.0 or better and who plan to study for a M.S. degree may substitute Math. 43 and 114 for M.E. 83 and 112.

‡ Communication majors should substitute E.E. 169, 170, and 185 for E.E. 161, 162, and 163.

§ Power majors may substitute E.E. 184 and 2 hours of E.E. Group for E.E. 183.

† Requirements for advanced degrees will be found in the Graduate School section. Candidates for a M.S. degree must have included Math. 114 (or its equivalent) in their undergraduate work.

UNDERGRADUATE TECHNICAL ELECTIVES

E.E. group requirements must be satisfied by selection from the following courses:

POWER	*Credits*
E.E. 165. Elec. Measurements	3
E.E. 171. Illumination	3
E.E. 172, 174. Individual Projects (each)	2-5
E.E. 173. Electric Power Systems	3
E.E. 176. Elec. Machine Design	3
E.E. 197. Industrial Control	3

COMMUNICATION	*Credits*
E.E. 185. Communication Networks	6
E.E. 187. High-frequency Circuits and Tubes	5
E.E. 189. Radio Design	2
E.E. 172, 174. Individual Projects (each)	2-5

COURSES FOR GRADUATES ONLY

	Credits
E.E. 203. Advanced Circuit Theory I	3
E.E. 204. Network Analysis	3
E.E. 205. Advanced Circuit Theory II	3
E.E. 220, 222, 224. Seminar	0-0-2
E.E. 221. Advanced Transients	5
E.E. 223. Symmetrical Components	3
E.E. 225. Power Transmission	5
E.E. 227. Adv. Power Systems	5
E.E. 241. Electro-acoustics	5
E.E. 251. High-frequency Techniques	5
E.E. 261. Wave Propagation	6
E.E. 263. Microwave Vac. Tubes	5
E.E. 300. Research	2-5
Graduate Thesis	9

Industrial Engineering

DEGREE: Bachelor of Science in Industrial Engineering

Requirement for Admission: A Bachelor of Science degree in any one of the branches of engineering in which the College of Engineering offers a four-year curriculum.

The degree will be granted following the successful completion of 45 credits in the courses listed below:

Autumn Quarter	*Credits*
B.A. 63. Accounting	5
B.A. 102. Business Finance	5
Electives	5

Winter Quarter	*Credits*
M.E. 108. Prod. Mgmt.	3
B.A. 110. Accounting	5
B.A. 121. Corp. Fin.	5
Electives	3

Spring Quarter	*Credits*
M.E. 109. Prod. Cost Anal.	3
B.A. 154. Accounting	5
Electives	6

Students who plan to take this degree should take B.A. 62, Principles of Accounting, as an elective subject for the first bachelor's degree. Those who fail to do so

will need to take B.A. 62 in addition to the courses listed above, during their fifth year. This will require the completion of B.A. 154 by extension or in residence during the fourth quarter.

B.A. 101 may be substituted for M.E. 108, and B.A. 151 for M.E. 109 in case of conflicts or other schedule difficulties.

Mechanical Engineering

DEGREES: Bachelor of Science in Mechanical Engineering
(at end of fourth year) and
Master of Science in Mechanical Engineering or Master of Science in Engineering
(at end of fifth year)

FRESHMAN

(The same for all curricula. See page 154.)

SOPHOMORE

Autumn Quarter	*Credits*
Phys. 97. Engr. Physics	4
Math. 61. Analytic Geom. and Calculus	5
M.E. 81. Mechanism	3
M.E. 82. Heat Engines	3
M.E. 53. Metal Castings	1
H-S.S. 61. Comm. Techniques I	1
P.E., and Mil. or Naval Science	+
	17+

Winter Quarter	*Credits*
Phys. 98. Engr. Physics	4
Math. 62. Engr. Calculus	3
C.E. 91. Mechanics	3
M.E. 54. Welding	1
Econ. 66. Gen. Econ.	3
H-S.S. 62. Comm. Techniques II	1
P.E., and Mil. or Naval Science	+
	15+

Spring Quarter	*Credits*
Phys. 99. Engr. Physics	4
C.E. 92. Mechanics	3
M.E. 83. Mech. Engr. Lab.	3
M.E. 55. Metal Machining	1
B.A. 57. Business Law	3
H-S.S. 63. Comm. Techniques III	1
P.E., and Mil. or Naval Science	+
	15+

JUNIOR

Autumn Quarter	*Credits*
M.E. 118. Thermodynamics	5
M.E. 102. Engr. Materials	3
M.E. 105. Tooling for Production	1
C.E. 93. Mechanics	3
H-S.S. 131. Human. I	3
	15

Winter Quarter	*Credits*
M.E. 111. Machine Design	3
M.E. 123. Dynamics of Engines	2
M.E. 141. Exper. Engr.	3
M.E. 106. Prod. Techniques	1
E.E. 101. Direct Currents	5
H-S.S. 132. Human. II	3
	17

Spring Quarter	*Credits*
M.E. 112. Machine Design	3
M.E. 124. Dynamics of Engines	2
M.E. 142. Exper. Engr.	3
M.E. 107. Prod. Planning	1
E.E. 121. Alt. Currents	5
H-S.S. 133. Human. III	3
	17

SENIOR

Autumn Quarter	*Credits*
M.E. 170. Int. Comb. Engines	3
C.E. 142. Hydraulics	5
Psych. 122. Industrial	3
H-S.S. 191. Reading I	1
Electives*	3
	15

Winter Quarter	*Credits*
M.E. 172. Int. Comb. Eng. Lab.	3
M.E. 165. Machine Design	2
B.A. 166. Industrial Relations	3
H-S.S. 192. Reading II	1
Electives*	6
	15

Spring Quarter	*Credits*
H-S.S. 193. Reading III	1
Electives*	14
	15

GRADUATE†

Autumn Quarter	*Credits*
M.E. and Allied Work	12
Thesis	3
	15

Winter Quarter	*Credits*
M.E. and Allied Work	12
Thesis	3
	15

Spring Quarter	*Credits*
M.E. and Allied Work	12
Thesis	3
	15

* Not less than 15 elective credits shall be technical.
† Requirements for advanced degrees will be found in the Graduate School section.

SENIOR AND GRADUATE TECHNICAL ELECTIVE COURSES

All electives must be approved in advance by the department.

	Credits
M.E. 104. Aircraft Materials	2
M.E. 108. Production Management	3
M.E. 109. Production Cost Analysis	3
M.E. 161. Quality Control	3
M.E. 162. Methods Analysis	3
M.E. 166. Machine Design	2
M.E. 171. Internal Combustion Engine Design	3
M.E. 182. Air Conditioning	3
M.E. 184. Power Plants	5
M.E. 185. Naval Architecture	3
M.E. 186. Naval Architecture	3
M.E. 187. Naval Architecture	3
M.E. 188. Marine Engineering	3
M.E. 189. Refrigeration	3
M.E. 195. Thesis	2-5
M.E. 199. Research	2-5
M.E. 200. Vibrations of Machinery	3
M.E. 202. Advanced Engineering Materials	3
M.E. 204. Advanced Internal Combustion Engines	2
M.E. 300. Research	2-5

MINERAL ENGINEERING

DRURY A. PIFER, *Director*, 328 Roberts Hall

DEGREES: Bachelor of Science in Mining, Metallurgical, or Ceramic Engineering (at end of fourth year) and
Master of Science in Mining, Metallurgical, or Ceramic Engineering or Master of Science in Engineering (at end of fifth year)

Prospector's Course

The Prospector's Course is open without examination to all men past high school age. The course is repeated each quarter except in summer. An advanced course is offered to those successfully completing the first course. The fee for each term is $10.00, payable upon registration. The G. I. Bill of Rights applies to this course. The course occupies full time from Monday to Friday, inclusive, with occasional Saturday trips to mines and plants. A certificate is given upon completion of each course. For full information address the Director of the School.

FRESHMAN

(The freshman year curriculum is the same as for all other curricula in the College of Engineering except that Chemistry 21, 22, and 23, five credits each, are required.)

SOPHOMORE

(The same for all curricula except that ceramic engineers substitute Ceramics 95 for Metallurgy 101.)

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Mining 51. Elements	3	Mining 52. Methods	3	Met. 53. Elements	3
Geol. 5. Rocks and Minerals	5	Chem. 111. Quant. Anal.	5	Geol. 121. Mineralogy	5
Physics 97. Engr. Phys.	4	Physics 98. Engr. Phys.	4	Physics 99. Engr. Phys.	4
Math. 61. Analytic Geom. and Calculus	5	Cer.E. 90. Industrial Minerals	3	Met. 101. Fire Assaying	3
P.E., and Mil. or Naval Science	+	H-S.S. 62. Comm. Techniques II	1	H-S.S. 63. Comm. Techniques III	1
		P.E., and Mil. or Naval Science	+	P.E., and Mil. or Naval Science	+
	17+		16+		16+

Practice in mining, geology, metallurgy, or ceramics in summer vacation.

Mining Engineering

JUNIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Mining 101. Milling	3	Met. 103. Fuel Technology	3	Mining 161. Mineral Dressing	4
C.E. 91. Mechanics	3	C.E. 92. Mechanics	3	C.E. 114. Intermed. Survey	3
Geol. 123. Optical Mineral	5	Geol. 124. Petrology	5	Min. 106. Mine Excursion	1
Met. 104. Nonferrous	3	E.E. 101. Dir. Currents	5	E.E. 121. Alt. Currents	5
H-S.S. 131. Humanities I	3	Met. 113. Fuels Lab.	1	H-S.S. 132. Humanities II	3
	17		17		16

Mining practice in summer vacation.

SENIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Mining 180. Valuation	2	Mining 191. Thesis	2	Mining 191. Thesis	1
Mining 191. Thesis	2	Mining 103. Rescue Training	1	Mining 107. Mine Excursion	1
Met. 155. Iron and Steel	3	Mining 181. Economics	3	Mining 163. Mine Engr.	4
Met. 162. Physical	3	Geol. 127. Ore Deposits	5	Mining 182. Min. Ind. Mgt.	3
Met. 154. Wet Assaying	3	Electives*	3	Electives*	6
Econ. 66. Gen. Econ.	3				
	16		14		15

Metallurgical Engineering

JUNIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Met. 104. Nonferrous	3	Met. 103. Fuel Technology	3	Met. 106. Excursion	1
Met. 102. Met. Lab.	2	E.E. 101. Dir. Currents	5	E.E. 121. Alt. Currents	5
C.E. 91. Mechanics	3	C.E. 92. Mechanics	3	Mining 161. Ore Dressing	4
Mining 101. Milling	3	Met. 113. Fuels Lab.	1	H-S.S. 132. Humanities II	3
Met. 155. Iron and Steel	3	Cer.E. 108. Pyrometry	1	Chem. 141. Physical	3
H-S.S. 131. Humanities I.	3	Chem. 140. Physical	3		16
	17		16		

Metallurgical practice in summer vacation.

SENIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Met. 154. Wet Assaying	3	Met. 165. Met. Calculation	3	Met. 166. Adv. Nonferrous	3
Met. 162. Physical	3	Mining 103. Rescue Training	1	Met. 163. Mining Engineering	4
Met. 191. Thesis	2	Met. 191. Thesis	2	Mining 107. Excursion	1
Econ. 66. Gen. Econ.	3	Min. 181. Economics	3	Met. 191. Thesis	1
Met. 163. Metallography	3	Cer.E. 163. Refractories	3	Electives*	6
	14	Electives*	3		15
			15		

Ceramic Engineering

JUNIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Cer.E. 100. Clays, Plasticity, and Suspensions	3	Cer.E. 101. Firing and Firing Problems	3	Cer.E. 102. Cer. Coatings	3
Cer.E. 104. Calculations	3	Cer. E. 105. Drying and Drying Problems	3	Cer.E. 110. Phys. Chem. Measurements	2
Mining 101. Milling	3	Met. 103. Fuel Technology	3	Cer.E. 106. Excursion	1
C.E. 91. Mechanics	3	C.E. 92. Mechanics	3	Econ. 66. Gen. Economics	3
Geol. 123. Optical Mineralogy	5	Chem. 140. Elem. Physical	3	Chem. 141. Elem. Physical	3
	17	Cer. 108. Pyrometry	1	H-S.S. 131. Humanities I.	3
			16		15

Ceramics practice in summer vacation.

SENIOR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Cer.E. 115. Phys. Ceramics	3	Cer.E. 124. Dryer and Kiln Design	3	Cer.E. 124. Plant Design	3
Cer.E. 121. Ceramics Bodies Lab.	3	Cer.E. 122. Ceramics Coating Lab.	2	Cer.E. 191. Thesis	1
Cer.E. 191. Thesis	2	Cer.E. 191. Thesis	2	Cer.E. 107. Excursion	1
H-S.S. 132. Humanities II	3	Cer.E. 163. Refractories	3	E.E. 121. Alt. Current	5
B.A. 57. Business Law	3	E.E. 101. Direct Current.	5	Electives*	6
Electives*	3		15		16
	17				

* Electives (9 credits) must be approved in advance by the head of the department.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS (ARMY AND AIR R.O.T.C.)

Military training has been given at the University of Washington since 1875 with the exception of a brief period early in the present century.

The present Reserve Officers' Training Corps functions under the provisions of the national Defense Act of June 4, 1920, and directives of the Department of the Army and the Department of Air Force based on that Act.

The postwar Reserve Officers' Training Corps program of instruction is divided into two phases, Basic Training and Advanced Training. The basic course consists of formal instruction for three hours per week for two academic years of 32 weeks each. Participation in this course is required on the part of all qualified male students. See page 85. Qualifications are in accordance with University requirements and Department of the Army directives. Students who have had previous Military Training or service will receive credit toward advanced standing in the R.O.T.C.

The advanced course consists of formal instruction for five hours per week for two academic years of 32 weeks each, plus a summer camp of six weeks duration, which is attended between the first and second years of the advanced course.

Enrollees in the Advanced Course are chosen from among the highest qualified students who have successfully completed the basic course or have equivalent previous military training or service.

The regulation R.O.T.C. uniform is issued for use of the elementary students at the University of Washington. Each student makes a $25.00 uniform deposit to the University. From this deposit the University collects the cost of articles lost by the student, or of damage to them due to other than fair wear and tear while in his possession. In case the student after registration withdraws from military science, his deposit, less the cost of any article lost or damaged, is returned to him upon presentation of a properly authenticated slip to the University cashier.

Unless otherwise directed the uniform is worn at all military formations.

Uniforms are returned to the Department of Military Science and Tactics at the end of each academic year by those students who have not terminated residence earlier.

For the advanced-course students, the Department of the Army will provide a special officer-type uniform.

Textbooks and equipment are provided for all classes.

Advanced-course students are paid a monetary allowance at a daily rate equal to the value of the commuted ration. Emoluments are in addition to benefits received through the G.I. Bill of Rights.

DEPARTMENT OF NAVAL SCIENCE

At the beginning of the Autumn Quarter each year a limited number of freshmen are appointed Midshipmen, U.S.N.R., and enrolled as regular N.R.O.T.C. Students. Those students enrolled are selected on the basis of a nationwide competitive examination held during the preceding winter. The following general qualifications are listed:

1. Be eligible for admission to an N.R.O.T.C. college.
2. Be a male citizen of the United States between the ages of 17 and 21 upon entrance.
3. Meet physical requirements comparable with those for entry to the U.S. Naval Academy.
4. Be unmarried and agree to remain unmarried until commissioned.
5. With consent of parent, agree to complete the four-year course unless released by reason of academic or physical failure, and to serve on active duty for two years as a commissioned officer in the U.S. Navy or U.S. Marine Corps.
6. Agree to take, during summer vacations, three practice cruises of about eight weeks each.
7. Students with previous college attendance are eligible if they meet the above qualifications and agree to remain in college for four additional years.

Men in the regular N.R.O.T.C. program receive books, tuition, incidental fees, and uniforms at Government expense plus $600 a year retainer pay.

A limited number of contract students are selected each year by the Professor of Naval Science. Contract students must:

(a) Meet requirements 1, 2, 3, 4, and 7 above.
(b) Agree to make one summer cruise of about three weeks duration between junior and senior years.
(c) Agree in writing to accept a commission if offered, and to serve, subject to call of the Secretary of the Navy, for a period of two years. Contract students are required to sign this agreement which entitles them to deferment from induction under the Selective Service Act of 1948.

Contract students have the status of civilians entering into a mutual contract with the Navy, and are in training for commissions in the Naval Reserve or Marine Corps Reserve. They pay their own college expenses except that they receive a subsistence allowance (currently $.90 per day) during their junior and senior years, including the intervening summer.

Inquiries regarding entry as a regular student should be made during the months of September or October of the year previous to entry from the Office of Naval Officer Procurement, Arctic Building, Seattle, or from the Professor of Naval Science, University of Washington.

The Professor of Naval Science accepts applications for contract enrollment beginning on or about May 15 of the year a student desires to enter. Enrollments are made only at the beginning of Autumn Quarter each year.

THE FAR EASTERN AND RUSSIAN INSTITUTE

GEORGE E. TAYLOR, *Director,* 406 Thomson Hall

The Far Eastern and Russian Institute has been established to integrate the graduate and undergraduate instruction and research in Far Eastern and Russian studies, to provide adequate library facilities, and to cooperate with other institutes in America and abroad. The undergraduate degrees will be taken in the Far Eastern or a related department. Graduate degrees will be sponsored by the Institute in cooperation with the colleges and departments concerned. Faculty members working in Far Eastern or Russian studies, although they may belong to departments other than the department of Far Eastern and Slavic Languages and Literature, will be members of the Institute. Work is offered on China, Japan, the U.S.S.R., Korea, Mongolia, the Philippine Islands, Indonesia and the countries of Southeast Asia. For full information, address an inquiry to the director of the Institute.

COLLEGE OF FORESTRY

GORDON D. MARCKWORTH, *Dean,* 206 Anderson Hall

DEGREE: Bachelor of Science in Forestry

The College of Forestry is fully accredited by the Society of American Foresters and offers four-year curricula leading to the degree of Bachelor of Science in Forestry with specialization in forest management, logging engineering, and forest products. The curriculum for the first two years is the same for all fields of specialization, with special curricula for each in the junior and senior years.

Advanced Degrees. At least a year of graduate study, leading to the degree of Master of Forestry or Master of Science in Forestry, is available in each major curriculum. Under certain conditions, students may be accepted as candidates for the degree of doctor of philosophy. Requirements for advanced degrees are discussed in the Graduate School sections, page 181.

Admission Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 74-85. In addition to the all-University entrance requirements, the College of Forestry requires one unit* of plane geometry and one and one-half units of elementary and advanced algebra.

Qualifying examinations are required in elementary composition. Applicants who fail in this examination must register in English A without credit.

In satisfying entrance requirements with college courses, a minimum of 10 credits is counted as the equivalent of the entrance unit.

As the forestry curriculum is one of specialized training, students entering from junior colleges or similar institutions, cannot complete the requirements for graduation in less than three years. Forestry courses, other than an introductory course, will be accepted only from accredited forestry schools. Exceptions may be made only upon approval of the faculty.

*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.

Scholarship Requirements

The general University scholarship rule requires that a student be placed on low scholarship and reported to the dean of his college if his cumulative grade-point average falls below 1.8 in the freshman year or below 2.0 thereafter. Students continuing on low scholarship will be dropped from the College of Forestry.

Students transferring from other institutions must have a cumulative grade-point average of 2.5 to be eligible for entrance.

Fellowships, Scholarships, Prizes. See pages 97 and 98.

Requirements for Graduation

For the degree of Bachelor of Science in Forestry, the student must complete the requirements outlined in the major curriculum selected and must meet the all-University requirements for graduation (see page 88). Electives must be approved by the student's faculty adviser.

Grades in physical education activity courses are not considered in determining grade-point averages in the College of Forestry.

Army and Navy students may use not more than nine quarter credits in advanced Army or Navy subjects to satisfy unrestricted elective credits in the College of Forestry.

Lower-division Curriculum

FIRST YEAR

Autumn Quarter	*Credits*
Bot. 17. (Foresters')	3
For. 3. Development	3
Math. 4. Trig.	5
Chem. 1, 3, 5, or 21. Gen.	5
P.E.	+
Mil. or Nav. Sci.	+
	16+

Winter Quarter	*Credits*
Bot. 18. (Foresters')	3
Engl. 1. Composition	3
For. 4. Fire Protection	3
For. 8. For. Problems	2
Chem. 2, 4, 6, or 22	5
P.E.	+
Mil. or Nav. Sci.	+
	16+

Spring Quarter	*Credits*
Bot. 19. (Foresters')	3
Engl. 2. Composition	3
For. 1a. Dendrology	3
For. 9. For. Problems	3
Physics 1 or 4	5
P.E.	+
Mil. or Nav. Sci.	+
	17+

SECOND YEAR

Autumn Quarter	*Credits*
Econ. 13. Gen.	3
For. 1b. Dendrology	3
For. 15. Gen. Lumbering	5
Physics 3 or 6	5
P.E.	+
Mil. or Nav. Sci.	+
	16+

Winter Quarter	*Credits*
For. 60. Mensuration	5
G.E. 7. Engr. Drawing	3
Geol. 115. Soils and Water Resources	3
Physics 2 or 5	5
P.E.	+
Mil. or Nav. Sci.	+
	16+

Spring Quarter	*Credits*
C.E. 56. Surveying	8
For. 40. Silviculture	2
For. 62. Mensuration	6
P.E.	+
Mil. or Nav. Sci.	+
	16+

Upper-division Curriculum

Beginning with the third year, the student will, with the approval of his faculty adviser, elect to follow one of the specialties in forestry. (See prerequisites under description of courses.)

Forest Management Curriculum

THIRD YEAR

Autumn Quarter	*Credits*
For. 104. Timber Physics	5
For. 109. Wood Tech.	4
For. 121. Silvics	3
Electives	3
	15

Winter Quarter	*Credits*
For. 122. Silv. Methods	3
For. 140. For. Construction	4
For. 158. Utilization	5
Electives	3
	15

Spring Quarter	*Credits*
Bot. 111. For. Path.	5
C.E. 115. Photogrammetry	3
For. 115. Insect Control	3
For. 123. Silv. Appl.	3
Elective	1
	15

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
B.A. 62. Accounting	5	For. 119. For. Policy	3	For. 164. Mgt. Surveys	5
For. 151. Econ. & Finance	5	For. 124. For. Fire Control	3	For. 165. Mgt. Inventory	5
For. 185. For. Engineer'g.	5	For. 152. For. Managem't.	5	For. 166. Mgt. Studies	4
	15	Electives	4	For. 167. Mgt. Reports	2
			15		16

Forest Products Curriculum

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Bot. 111. For. Path.	5	For. 104. Timber Physics.	5	B.A. 62. Accounting	5
For. 109. Wood Tech.	4	For. 111. Wood Structure.	3	For. 105. Wood Pres.	3
Electives	6	M.E. 82. Steam Engr.	3	For. 106. Wood Pres. Lab.	2
	15	Electives	3	For. 108. Timber Design	3
			14	For. 125. Elem. Silv.	3
					16

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
B.A. 57. Bus. Law	3	For. 157. For. Prod. Ind.	3	For. 184. Mfg. Prob.	5
For. 151. Econ. & Fin.	5	For. 159. Plywood, Lamination, and Glues	4	For. 189. Wood Pulp	5
For. 183. Milling	5	For. 188. Kiln Drying	3	For. 190. Microtechnique.	3
Electives	2	Electives	5	Electives	2
	15		15		15

Logging Engineering Curriculum

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
C.E. 112. Route Surv.	3	C.E. 113. Location and Earthwork	3	Bot. 111. For. Path.	5
For. 104. Timber Physics.	5	For. 122. Silv. Methods	3	C.E. 115. Photogrammetry	3
For. 109. Wood Tech.	4	For. 140. For. Consruct'n	4	For. 115. Insect Control	3
For. 121. Silvics	3	For. 158. Utilization	5	Math. 31. Engr. Math.	5
	15		15		16

FOURTH YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
B.A. 62. Accounting	5	B.A. 57. Bus. Law	3	For. 191. Log. Plans	3
For. 151. Econ. & Fin.	5	For. 124. For. Fire Cont.	3	For. 192. Top. & Timber Survey	5
For. 170. Log. Safety	2	For. 152. For. Mgt.	5	For. 193. Road Loc. Surv.	5
For. 185. For. Engr.	5	For. 186. Log. Engr.	5	For. 194. Log. Cost Anal. and Reports	3
	17		16		16

SCHOOL OF LAW

JUDSON F. FALKNOR, *Dean*, 205 Condon Hall

The School of Law was established in 1899, is a member of the Association of American Law Schools, and is approved by the Council on Legal Education and Admission to the Bar of the American Bar Association.

The school prepares 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, and the rules of practice that obtain in the state of Washington. Admission to the Washington Bar, however, is conditioned upon passing a state bar examination.

Admission

New students are admitted at the start of each fall quarter. An application-for-admission blank should be obtained from and filed with the Dean of the Law School, together with complete transcripts of college and law work. An early application is essential since admission is on a selective basis and some who apply may not be accepted.

Regular Students. To be regularly admitted to the School of Law a student must either (1) hold the degree of bachelor of arts or bachelor of science from a college or university of recognized standing, or (2) have completed 135 academic quarter credits with a scholarship average of 2.5, together with the required credits in physical education activity courses, and Military or Naval Science courses, or (3) have completed 90 academic quarter credits with a scholarship average of 2.5, together with the required credits in physical education activity courses, and Military or Naval Science courses, and including satisfactory completion of the following courses or their substantial equivalents: English 1, 2, 3 (9 credits); Philosophy 1, Introduction, and 5, Logic (10 credits); Economics 10, Introduction, and Business Administration 1, Business Organization (10 credits); History 5, 6, English Political and Social, and 106, English Constitutional (15 credits); Political Science 1, Survey, and 52, Introduction to Public Law (10 credits). In every case, the applicant must present at least 90 residence credits in addition to extension credits.

Advanced Standing. Transfer of credit is possible only from those schools which are members of the Association of American Law Schools; credit for not less than the work of one year and not more than the work of three years will be acceptable. The dean shall determine what credit, if any, can be granted to a transfer student.

Special Students. This classification covers those who are not working for a degree. The applicant must be at least 23 years of age and his general education must entitle him to admission to the freshman class in the University of Washington. Admission is granted only upon vote of the faculty, and the number of those who can be granted this privilege is definitely restricted.

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

Bachelor of Laws. The law course is a four-year course.* The degree of Bachelor of Laws will be conferred on *regular* students who complete 168 quarter credits in professional law subjects, including the required courses, with a scholarship average of 2.0. The three quarters immediately preceding the conferring of the degree must be spent in residence at the University of Washington Law School.

Bachelor of Science in Law. This is a nonprofessional degree which does not qualify for admission to the bar or to the bar examination; it is conferred on a *regular* student who holds no bachelor's degree, who has completed six quarters of the law school curriculum (usually 84 credits), who has at least 180 credits in legal and prelegal work with a scholarship average of 2.0, and who is eligible to continue in the Law School.

For the major in Law in the College of Arts and Sciences or in the College of Business Administration, see page 175.

For scholarship rules, see page 91.

The Carkeek Prize. The Vivian M. Carkeek 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."

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 W. G. McLaren Prize. An award of $25 is made annually to that fourth-year student submitting the best solution to a problem in legal draftsmanship.

The Seattle Life Insurance and Trust Council Will Contest. During the academic year awards are made to the three law students who, in the opinion of the judges, draft the best will based on a stipulated set of facts. The prizes are $250, $100, and $50.

* Students who had at least one year of active duty in the armed forces of the United States prior to September 1, 1945, are, by terms of a state statute, entitled to two quarters of credit.

William Wallace Wilshire Memorial Scholarship Fund. This fund was established under the will of the late Fannie Belden Shepherd. The will provides that the net income from the fund shall be expended and disbursed in the form of scholarships to students enrolled in the Law School of the University of Washington and that in awarding the scholarships "the Board of Regents shall be governed by the financial need, general character, and demonstrated scholastic ability of the applicants for such scholarships." It is estimated that approximately $3,500 will be available for such scholarships during the school year 1949-50. The maximum to be awarded under any one scholarship will be $500. Applications from prospective beginning students are eligible for consideration. Such applications must be submitted to the Dean of the Law School not later than April 15, 1949, on forms which are available at the Dean's office.

SCHOOL OF LIBRARIANSHIP

ROBERT L. GITLER, *Director,* 112 Library

Admission Requirements

Admission to the School of Librarianship is granted to graduate students who hold the baccalaureate degree from a college or university of good standing, and whose undergraduate work has included at least 20 quarter credits of one modern foreign language, and who have made an average grade of "B" in their undergraduate work. Students who plan a library career in scholarly libraries and scientific fields should have a reading knowledge of French and German before applying for admission to the school.

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.

Initial admission to the School of Librarianship is permitted only at the beginning of the autumn quarter.

Early application for entrance is recommended as the enrollment is limited. Therefore, application for admission should be made to the School of Librarianship before May 30 of the year of entrance. Opportunity to enter at a later date, before September 15, may depend upon withdrawal of previously accepted applicants. Copies of transcripts of academic records must be filed with the Registrar of the University *AND* the Director of the School of Librarianship. Graduate standing is determined by the Registrar, admission to the School by the Director. *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

When possible, applicants are urged to arrange with the Director for a personal interview.

In general, persons beyond 35 years of age will not be considered for admission to the school unless special circumstances warrant.

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.

Those desiring to prepare for children's library work should have completed at least one course in child psychology.

Those wishing to enter high school library work should consult the College of Education in regard to teaching qualifications.

An average class grade of "B" must be maintained by students of the school. Since the courses are heavy, students are advised not to plan for outside work. However, it is frequently possible to enroll for a portion of the curriculum and carry the program over a two-year period while working on a part-time basis as a subprofessional assistant in the University Library.

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 second-year course in library work with children,* a certificate in library work with children is granted.

* Not offered 1949-50.

Curricula

Four curricula are offered: (1) General; (2) Library Work with Children; (3) School Library Work; (4) Law Librarianship.

All students, except those in law librarianship, follow the general course during the first quarter. This introduction to the various fields of library work assists the student in determining the curriculum he will study for the remainder of the year. In the second and third quarters, one may continue with the general course, in which emphasis is along the traditional lines: reference and bibliography, cataloging and classification, book selection, and administration. Or the student may specialize in library work with children or in school library work.

Students following Curriculum I (General Course) may, with the approval of the Director, elect courses on the graduate level in other departments of the University in lieu of the courses that are marked ‡.

I. General Course

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
200. Libraries, Librarians, and Society	2	201. Org. and Administration: Pub. Libs.	2	202. Org. and Admin.: Academic and Spec. Libs.	3
210. Bibliography and Reference	3	211. Bibliography and Reference	3	‡204. Libraries, Librarians, and Society	2
220. Classification and Cataloging	4	221. Classification and Cataloging	3	212. Bibliography and Reference	3
230. Books for Libraries	3	231. Books for Libraries	3	222. Classification and Cataloging	3
‡250. Children's Work	3	‡270. History of the Book	3	‡209. Directed Field Work (Practice)	5

II. Courses for Library Work with Children

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
200. Libraries, Librarians, and Society	2	211. Bibliography and Reference	3	204. Libraries, Librarians, and Society	2
210. Bibliography and Reference	3	221. Classification and Cataloging	3	209. Directed Field Work (Practice)	5
220. Classification and Cataloging	4	231. Books for Libraries	3	252. Story Telling	3
230. Books for Libraries	3	253. Advanced Children's Work	2	255. Selection of Books for Children	3
250. Children's Work	3	254. Selection of Books for Children	3		
		270. History of the Book	3		

III. Courses for School Library Work

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
200. Libraries, Librarians, and Society	2	211. Bibliography and Reference	3	204. Libraries, Librarians, and Society	3
210. Bibliography and Reference	3	221. Classification and Cataloging	3	‡209. Directed Field Work (Practice)	5
220. Classification and Cataloging	4	231. Books for Libraries	3	212. Bibliography and Reference	3
230. Books for Libraries	3	262. Book Selection for High School Libs.	3	260. School Library Administration	4
250. Children's Work	3	270. History of the Book	3		

For students preparing to meet the requirements of the State Department of Public Instruction for teacher-librarians, or to meet the requirements for an eighteen-credit minor, the following courses have been opened: Lib. 151, 161, 163, 164, 260, 262.

If a student plans to take less than 18 credits of librarianship, it is recommended that 163 and 262 be considered essential, and 260, 161, 151, and 164 desirable, ranked in order of importance.

If a student wishes later to take the degree of Bachelor of Arts in Librarianship, he will need to meet all requirements for entrance to the school and to complete the remainder of the curriculum.

IV. Courses in Law Librarianship

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
200. Libraries, Librarians, and Society	2	211. Bibliography and Reference	4	209. Directed Field Work (Practice)	5
210. Bibliography and Reference	3	221. Classification and Cataloging	3	222. Classification and Cataloging	5
220. Classification and Cataloging	4	242. Legal Reference and Research	5	243. Law Library Administration	5
240. Adv. Legal Bibliog.	4	270. History of the Book	3		
241. Order and Accessioning of Law Books	2				

Announcement of Courses

For announcement of courses offered by the School of Librarianship, see page 249.

SCHOOL OF MEDICINE

EDWARD L. TURNER, *Dean*, 200B Bagley Hall

The School of Medicine began instruction to its first class on October 1, 1946. The basic medical science departments are fully organized, staffed, and equipped to conduct the work of the first two years in temporary quarters and will occupy their new facilities in the fine new building for the Division of Health Sciences prior to the opening of the fall quarter in 1949. The facilities in these new quarters will be unexcelled. Clinical instruction in hospitals affiliated with the University began in the fall of 1948. The chief center for clinical instruction is King County Hospital, where the department heads in the School of Medicine are officially in charge of their respective departmental activities. Clinical instruction is also being conducted in the Children's Orthopedic Hospital, United States Marine Hospital and Firland Sanatorium. During the year beginning in October 1949 instruction will also be conducted in certain of the affiliated state mental institutions including Western State, Northern State, and Eastern State Hospitals.

Construction of new facilities to house the Division of Health Sciences (Medicine, Dentistry, and Nursing) was initiated in March, 1947. The first units, housing the library, auditorium, administrative facilities, certain laboratory units for the clinical departments of the School of Medicine and the complete unit for the School of Dentistry have been completed and were occupied in January, 1949. The completion of the basic medical science units of the division in the fall of 1949 will represent an initial investment of about $9,000,000. Plans are now being formulated for a 450-bed teaching and research hospital to be constructed as an integral unit of the Division of Health Sciences.

Organization and development of the School of Medicine is being directed so as to meet the full approval of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association. On completion of curriculum planning and admission of the first senior class in the fall of 1949, the new school will be inspected by representatives of these organizations for approval and accreditation.

The objectives of the school are (1) to prepare a selected group of medical students for the practice of medicine through the use of the best educational technics employed in this field, (2) to develop a continuing education program of the highest possible caliber for graduate and postgraduate physicians, and (3) to conduct an active program of research and investigation. Development of faculty and physical facilities have been directed towards reaching these three objectives.

The actual admission to the practice of medicine in the state of Washington, or any other state or territory of the United States, is conditional upon the candidate's meeting the requirements of the state's board of medical examiners in regard to undergraduate training, internship requirements and satisfactory completion of the state medical examination prerequisite to licensure.

Application

Applications and all pertinent material should be sent to the Committee on Admissions of the School of Medicine. Each applicant must submit the following material on or before February 1, before any action can be taken by the Committee on Admissions: (1) formal application for admission on the form furnished by the University of

Washington; (2) official transcript of previous college record (sent directly from Registrar's Office of the institution where preprofessional training was taken to the Committee on Admissions of the School of Medicine at the University of Washington); (3) two unmounted recent photographs (2 x 3 inches); (4) students applying with premedical training in Canada are required to forward a copy of their university entrance certificate.

Applicants must take the special medical aptitude test conducted by the Graduate Record Examining Board. The Committee on Admissions will inform applicants as to when the tests may be taken.

Admission

The Admissions Committee will consider as candidates for entrance to the Medical School: (1) individuals who hold a bachelor of arts or science degree from a fully accredited college or university and whose scholastic average has been 2.5 or better; (2) those who have completed three years of premedical training (135 academic quarter credits) with a scholastic average of 2.5 or better; and (3) occasionally students who have completed two years of premedical training (90 academic quarter credits) with an outstanding record and a scholastic average of 3.0 or above. All applicants must have completed the required courses in physical education, and the following basic premedical courses: English 1, 2, 3 (Composition, 9 credits); Chemistry 1-2 (for students without high school chemistry) or 21-22 (for those having completed a year of high school chemistry); 23 (Qualitative); 111 (Quantitative); 131 (lab. 128), 132 (lab. 129) (Organic)—(total of 30 chemistry credits); Physics 1, 2, 3, or 4, 5, 6 (15 credits); Zoology 1, 2 (General); 153-154 (Comparative Anatomy) or Zoology 156 (General Vertebrate Embryology).

The student is advised to elect courses in physical chemistry (Chemistry 140-141), and cellular physiology (Physiology 115), all of which will be helpful. Courses in such fields as history, psychology, philosophy, social studies, and economics should also be elected since they are valuable in a well-rounded premedical course.

Requirements for Graduation

A candidate for the degree of Doctor of Medicine must be 21 years of age and must have given evidence of good moral character. He must have attended four sessions as a regularly matriculated student. He must have completed the required work, have a satisfactory grade average (minimum 2.0) throughout the entire medical course, and have fulfilled all special requirements. He must have discharged all indebtedness to the institution.

BIOCHEMISTRY

EARL R. NORRIS, *Executive Officer*, 122 Bagley Hall

Any student desiring to take work which would lead to an advanced degree should consult with the staff of Biochemistry; the prerequisites would ordinarily be a degree of Bachelor of Science in chemistry under the College of Arts and Sciences or its equivalent.

MEDICAL TECHNOLOGY

(See page 124)

MICROBIOLOGY

(See page 125)

PUBLIC HEALTH AND PREVENTIVE MEDICINE

(See page 137)

SCHOOL OF NURSING

ELIZABETH STERLING SOULE, *Dean,* Health Sciences Building

Nursing has been a part of the general university program at the University of Washington since 1917. The School of Nursing today is a professional school and an active member of the Association of Collegiate Schools of Nursing. It is accredited by the National League of Nursing Education, the National Organization for Public Health Nursing and the State of Washington. The programs offered are intended to prepare students for professional practice in all fields of nursing.

Graduates of the Group I Basic Curriculum are eligibile to take the state nursing examination and to practice as registered nurses in the State of Washington or in other states through reciprocity. In addition, joint accreditation of the basic program by the National League of Nursing Education and the National Organization for Public Health Nursing now permits these graduates to practice as public health nurses in first level positions.

Admission Requirements

Group I. To be regularly admitted to the School of Nursing in the basic curriculum, the student must have met the entrance requirements of the University and the College of Arts and Sciences. She must have completed 90 quarter credits in an accredited university or college, together with the required physical education activity courses. Acceptance in the School of Nursing is on a selective basis. These credits must include the following: English 1, 2, 3 (9 credits); Chemistry 3-4 or 5-6, 137 (15 credits); Psychology 1 (5 credits); Sociology 1 (5 credits); Microbiology 101 (5 credits); Home Economics 9 (5 credits); Physical Education 10 (2 credits) Physical Education 116 (3 credits).

Group II. Students in postgraduate nursing curricula must be graduates of approved schools of nursing with a minimum daily average of 100 patients and with services in at least four major fields: obstetrics, medicine, surgery, and pediatrics. Deficiencies in any of these services must be made up. Achievement tests in various fields of nursing are required of all graduate nurses upon admission to the School of Nursing. The results of the testing program will be used as a basis for planning the student's individual program.

Advanced Degrees. See Graduate School section, page 179.

Health

All students are required to have a special health examination, chest X-ray, and inoculations for smallpox, typhoid, and diptheria before hospital entrance or field practice. Defects to be corrected must be cared for by the student at her own expense. Serious physical defects will bar the student from entrance or may terminate her course at any time on recommendation of the health service.

Medical and health care, including annual physical examination and hospitalization not to exceed two weeks at any one time, are provided during the clinical practice. Hospitalization is given 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

With the following exceptions, the expenses for students in the School of Nursing are the same as for all other university students. See pages 81-85.

Basic Students. During the ten quarters in the hospital division the student's University tuition is paid from the Nursing Education Fund. In addition, the student receives maintenance in the nurses' residence. She must provide her own uniforms, textbooks, and special supplies.

Graduate Nurse Students. During those periods when the graduate nurse student is assigned to a hospital teaching unit she receives a cash salary for nursing service rendered, the amount of which varies depending on the unit to which she is assigned. Maintenance, or cash in lieu thereof, is provided in all hospital units.

Fellowships, Scholarships, Prizes. See pages 97 and 98.

COLLEGE OF PHARMACY

FOREST J. GOODRICH, *Dean*, 102 Bagley Hall

DEGREE: Bachelor of Science in Pharmacy

Entrance Requirements

For detailed information concerning University admission requirements, fees, and expenses, see pages 75-85. In addition to the all-University entrance requirements, the College of Pharmacy requires one unit of elementary algebra, and one unit of plane geometry or second-year algebra.

Since it has become necessary to admit students to Pharmacy on a selective basis, a special Pharmacy Personal Information blank will be supplied to students desiring admission to the College of Pharmacy. These application forms may be secured from the Registrar of the University and must be submitted together with credentials of previous academic work to the office of the Registrar by July 15, 1949, relative to admission for the 1949-50 academic year.

Students whose credentials and Pharmacy Personal Information blanks have not been received by the Registrar before July 15, 1949, may be accepted only if vacancies exist in the college.

Advanced Degrees. For requirements for advanced degrees, see Graduate School section, page 181.

Fellowships, Scholarships, Prizes. See pages 97 and 98.

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."

Curriculum

The requirements for graduation with the degree of Bachelor of Science in Pharmacy conform to the all-University requirements (pages 85-89), except that not more than 18 quarter credits in advanced Army and Navy subjects may be applied toward graduation.

FIRST YEAR

Autumn Quarter	*Credits*
Pharm. 1. General	3
Engl. 1. Composition	3
Chem. 8. Gen. Inorganic	5
Pharm. 4. History	2
P.E. 10 or 75	2
P.E., and Mil. or Naval Science	+
	15+

Winter Quarter	*Credits*
Pharm. 2. General	3
Engl. 2. Composition	3
Chem. 9. Gen. Inorganic	5
Botany 13. General	5
P.E., and Mil. or Naval Science	+
	16+

Spring Quarter	*Credits*
Pharm. 3. General	3
Engl. 3. Composition	3
Chem. 10. Qualitative	5
Math. 22. Adv. Alg. and Trig.	5
P.E., and Mil. or Naval Science	+
	16+

SECOND YEAR

Autumn Quarter	*Credits*
Pharm. 9. Prescriptions	3
Ph'cog. 12. Pharmacognosy	3
Chem. 37. Organic	5
Physics 1 or 4	5
P.E., and Mil. or Naval Science	+
	16+

Winter Quarter	*Credits*
Pharm. 10. Prescriptions	3
Ph'cog. 13. Pharmacognosy	3
Chem. 38. Organic	5
Physics 2 or 5	5
P.E., and Mil. or Naval Science	+
	16+

Spring Quarter	*Credits*
Pharm. 11. Prescriptions	3
Ph'cog. 14. Pharmacognosy	3
Chem. 39. Organic	5
Zool. 8. Elem. Human Physiol.	5
P.E., and Mil. or Naval Science	+
	16+

THIRD YEAR

Autumn Quarter	*Credits*
Ph. Chem. 125. Quantitative. Gravimetric	5
Ph'col. 101. Pharmacol. and Toxicology	3
Ph'cog. 111. Glandular Products	3
Electives	5
	16

Winter Quarter	*Credits*
Ph. Chem. 126. Quantitative. Volumetric	5
Ph'col. 102. Pharmacol. and Toxicology	3
Ph'cog. 104. Microscopy	3
Microbiology 101. General	5
	16

Spring Quarter	*Credits*
Ph. Chem. 140. Organic Med. Products	3
Ph. Chem. 128. Drug Assay	3
Ph'col. 103. Pharmacol. and Toxicology	3
Ph'cog. 112. Serums, Vaccines and Allergens	2
Electives	5
	16

FOURTH YEAR

Autumn Quarter	*Credits*
Ph. Chem. 195. Pharm. Chemistry	5
Pharm. 182. Modern Pharmaceuticals	5
Pharm. 113. Adv. Prescrip.	5
	15

Winter Quarter	*Credits*
Ph. Chem. 196. Pharm. Chemistry	5
Pharm. 114. Adv. Prescrip.	5
Pharm. 118. Ph. Acctg.	5
	15

Spring Quarter	*Credits*
Ph. Chem. 197. Alkaloids and Toxicology	5
Pharm. 115. Adv. Prescrip.	5
Electives	5
	15

PREPROFESSIONAL TRAINING

PRE-EDUCATION

FRANCIS F. POWERS, *Executive Officer,* 230 Education Hall

(See College of Education section, page 143, for detailed information.)

Pre-education Students. During the freshman year, students who expect to teach, and who do not meet all the requirements for admission to the College of Education, or are undecided as to which prescribed course they wish to follow, will register as pre-education freshmen in the College of Arts and Sciences and pursue the regular course of the College of Education. They must confer in this year with the advisory officers in 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.

PRELAW

Advisers: S. D. Brown, 223 Savery Hall, College of Business Administration
R. D. Gustafson, 121 Education Hall, College of Arts and Sciences

Students may gain admission to the School of Law either through the College of Arts and Sciences or the College of Business Administration. Any of the three plans listed below will qualify a student for Law School.

1. A four-year bachelor's degree from any recognized college or university.

2. A three-year program (135-138 credits with a minimum grade-point average of 2.5) consisting of the following requisites: (This includes the combined Arts-Law, Science-Law, or Law-Business curricula leading to a bachelor's degree conferred by the respective college at the successful conclusion of the first year's study in law.)

College of Arts and Sciences

(Combined Arts-Law Curricula)	*Credits*
1. Fulfill entrance deficiencies	
2. English 1, 2, 3. Composition	9
3. Phys. Educ. 75 or 10. Health Ed.	2
4. Phys. Ed. Activity	+
5. Mil. or Nav. Sci.	+
6. Special Field*	25
7. Related Field*	20
If a student fulfills the basic prelaw requirements set forth by the law school, B.A. 1 (Business Organization) Econ. 10 (Survey of Economics) Hist. 5, 6 (Engl. Pol. and Soc.) Hist. 106 (Engl. Constitutional) Phil. 1 (Survey of Philosophy) Phil. 5 (Logic) Pol. Sci. 1 (Survey) Pol. Sci. 52 (Intro. to Public Law), he may elect his special and related fields from any department within the college. If not, he must elect his special and related fields from the departments of Economics, History, Philosophy, or Political Science.	
8. Electives* (A student is urged to take the basic prelaw requirements.) Group Requirements Humanities 20 or 10 credits Sciences 10 or 20 credits Upper-division Courses (28 credits of advanced work)	82
Total	138†

College of Business Administration

(Combined Law-Business Curricula)	*Credits*
1. Fulfill entrance deficiencies	
2. English 1, 2, 3. Composition	9
3. Phys. Educ. 75 or 10. Health Ed.	2
4. Phys. Ed. Activity	+
5. Mil. or Nav. Sci.	+
6. Lower-division requirements of College	
B.A. 1. Business Organization	5
Econ. 10. Survey of Economics	5
Geog. 7. Economic Geography	5
Hist. 7. U. S. History	5
or	
Hist. 5 and 6. English Political and Social History	10
B.A. 60. Statistics	5
B.A. 62, 63. Accounting	10
Either Mathematics, an approved lab. science, or foreign language	10
Anthropology, Psychology, Political Science, Sociology, Philosophy	20
Electives*	9 or 14
7. Upper-division requirements of College	
B.A. 101. Industrial Management	5
B.A. 102. Business Finance	5
B.A. 106. Marketing	5
B.A. 165. Human Relations	5
B.A. 175. Business Fluctuations	5
Electives*	23
Total	138†

College of Arts and Sciences (Science-Law Curricula)

Same as Arts-Law Curricula with the exception that the major requirements in some departments may be substituted for No. 6 (Special Field) and No. 7 (Related Field) requirements.

3. A two-year program (90 or 96‡ credits with a minimum grade-point average of 2.5) consisting of the following requisites: (Requirements for both the College of Arts and Sciences and the College of Business Administration).

	Credits
English 1, 2, 3. Composition	9
B.A. 1. Business Organization	5
Economics 10. Survey	5
History 5, 6. English Political and Social	10
History 106. English Constitutional	5
Philosophy 1. Survey	5
Philosophy 5. Logic	5
Political Science 1. Survey	5
Political Science 52. Introduction to Public Law	5
Physical Education 75 or 10. Health Ed.	2
Physical Education Activities	6+
Mil. or Nav. Sci.	12 or 18+
Electives* (34 or 40)‡	40
Total	96†

Transfer Prelaw Students. Students from other institutions entering this University with advanced standing may take advantage of the curricula described above, provided that they earn at least 45 approved credits in the College of Arts and Sciences before entering the Law School. 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.

* All electives should be selected in conference with adviser.

† Academic credits must be accompanied by 18 or 24 plus credits for all men and 6 plus credits for all women.

‡ To be eligible for a Bachelor of Science in Law degree conferred by the School of Law on the recommendation of its faculty at the end of the second year of law study, 96 prelegal academic credits must be accumulated before entering Law School.

PRELIBRARIANSHIP

ROBERT L. GITLER, *Adviser,* 112 Library

Students planning to enter the School of Librarianship should consult the Director of the School for advice and guidance in their undergraduate courses of study.

In general, it is recommended that a student establish a major in a subject of special interest to him and supplement his comprehensive knowledge of that field with a broad cultural course which includes literature, the political and social sciences, some aspect of the natural or physical sciences, and psychology.

An undergraduate curriculum developed in the division of General Studies (College of Arts and Sciences) provides a flexible program for a candidate planning to enter the School of Librarianship. A study of at least one modern foreign language is essential. More detailed information relating to prelibrarianship courses of study will be found in the school's announcement, which is obtainable upon request from the office of the Director.

Attention is called to the all-university nonprofessional course, Librarianship 1: The Use of Books and Libraries. This course, open to any student and primarily designed for lower-division and new students, serves, also, to orient those interested in librarianship as a career.

For admission requirements of the school, see page 167.

PREMEDICINE, PREDENTISTRY, AND BASIC MEDICAL SCIENCE

PREMEDICINE

HAROLD M. HINES, *Adviser,* 121 Education Hall

The minimum requirement for admission to most medical schools is three years of college training and, in some cases, knowledge of one foreign language (German preferred). The curriculum outlined below is generally satisfactory, but the student must acquaint himself with the specific requirements of the school in which he is interested in order to make the proper selection of electives.

In case the school which the student wishes to attend requires a bachelor's degree for admission, a major must be chosen in consultation with the advisory board not

later than the sophomore year. Chemistry, zoology, and biological science are the majors most adaptable to premedicine, although other majors are possible. A general grade-point average of 2.5 must be maintained by all premedical students.

Curriculum for Premedicine

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
†Chem. 21	5	†Chem. 22	5	Chem. 23	5
English 1	3	English 2	3	English 3	3
Mathematics 1 or 4	5	Zoology 1	5	Zoology 2	5
P.E. 10 or 75	2	Electives	2-3	Electives	2-3
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+
	15+		15-16+		15-16+

SECOND YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Zoology 156	5	†Physics 2	5	Chemistry 111	5
†Physics 1	5	Electives	10	†Physics 3	5
Psychology 1	5	(Soc. Sci. and/or Humanities)		Electives (Soc. Sci. and/or Humanities)	5
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+
	15+		15+		15+

THIRD YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
Chemistry 131	5	Chemistry 132	5	Electives	5
Foreign Language or Elective	5	Foreign Language or Elective	5	Foreign Language or Elective	5
Electives	5	*Electives	5	*Electives	5
	15		15		15

† Alternate courses are available for those who have not had high school chemistry or physics.
* A minimum of ten (10) hours of elective work should be in one of the following fields: mathematics, physics, zoology or chemistry. Courses must be selected in conference with an adviser.
Other elective hours should be devoted largely to courses in the Humanities and Social Sciences which will give the broadest insight into human understanding and relationships.

PREDENTISTRY

The minimum requirement for admission to dental school is two years of college training (60 semester or 90 quarter credits of academic work). The course should include 1 year each of biology, English, inorganic chemistry, and physics; and ½ year or 6 quarter credits of organic chemistry.

The student must acquaint himself with the specific requirements of the school in which he is interested in order to make the proper selection of electives. A grade-point average of 2.0 is required.

Curriculum for Predentistry

FIRST YEAR

Autumn Quarter	*Credits*	*Winter Quarter*	*Credits*	*Spring Quarter*	*Credits*
†Chem. 1 or 21	5	†Chem. 2 or 22	5	Chem. 23	5
English 1	3	English 2	3	English 3	3
Zoology 1	5	Zoology 2	5	*Math. 1 or 4	5
P.E. 10 or 75	2	Electives	2	Electives	2
P.E. Activity	+	P.E. Activity	+	P.E. Activity	+
Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+	Mil. or Nav. Sci.	+
	15		15		15

† The alternative courses are provided for those who have not had high school chemistry or physics.
* A student who has taken only one year of high school algebra and one year of high school geometry should take Math. 1 to be followed later by Math. 4. A student who has taken 1½ years of high school algebra and a year of geometry may take Math. 4.

SECOND YEAR

Autumn Quarter	*Credits*
Zoology 156	5
†Physics 1 or 4	5
Electives	5
P.E. Activity	+
Mil. or Nav. Sci.	+
	15

Winter Quarter	*Credits*
Chem. 131	3
Chem. 128. Organic Lab.	2
†Physics 2 or 5	5
Electives	5
P.E. Activity	+
Mil. or Nav. Sci.	+
	15

Spring Quarter	*Credits*
†Physics 3 or 6	5
Chem. 132	3
Chem. 129. Organic Lab.	2
Electives	5
P.E. Activity	+
Mil. or Nav. Sci.	+
	15

† The alternate courses are provided for those who have not had high school chemistry or physics.

BASIC MEDICAL SCIENCE

(See page 108.)

PRENURSING

MABEL S. DAVIES, *Adviser*, 121 Education Hall

The Prenursing curriculum covers six quarters (90 academic credits) in the College of Arts and Sciences. It is planned to prepare the student for admission to the School of Nursing and to provide a broad educational background before professional training is begun. Required courses are listed below. Electives may be chosen in accordance with the student's individual interest, but it is recommended that they include some courses in literature, history, psychology, sociology, music or speech. Not more than 10 elective credits should be in the field of science.

First Quarter	*Credits*
English 1. Composition	3
P.E. 10. Health Ed.	2
Electives	10
P.E. Activity	+
	15+

Second Quarter	*Credits*
English 2. Composition	3
Chemistry 5. Inorganic	5
Electives	7
P.E. Activity	+
	15+

Third Quarter	*Credits*
English 3. Composition	3
Chemistry 6. Inorganic	5
Psych. 1	5
Electives	2
P.E. Activity	+
	15+

Fourth Quarter	*Credits*
Chem. 137. Organic	5
Sociology 1	5
P.E. 116. First Aid	3
Electives	2
P.E. Activity	+
	15+

Fifth Quarter	*Credits*
Microbiology 101	5
Electives	10
P.E. Activity	+
	15+

Sixth Quarter	*Credits*
Home Economics 9	5
Electives	10
P.E. Activity	+
	15+

Throughout the Prenursing course, the student is given the opportunity to confer with advisers in the School of Nursing regarding the professional curricula. For information regarding curricula in the School of Nursing, see page 171.

PRE-SOCIAL WORK

WM. H. MCCULLOUGH, *Adviser*, 500 Thomson Hall

For detailed information, see page 194; see also *Education for Social Work* bulletin.

Undergraduate students planning to apply for admission to the Graduate School of Social Work should confer with the pre-social work adviser at the time of registration or as soon as they have decided to prepare for this field. Unless the student begins his undergraduate preparation early, he may find it necessary to take additional undergraduate work which will delay his admission or increase the time required for his professional training.

Seniors planning to enter the School of Social Work should make application early in the *spring* preceding the fall in which they wish to begin their professional training, as enrollment is limited.

For admission to the University of Washington Graduate School of Social Work, students must have received their bachelor's degree, and be eligible for admission to the Graduate School (see Graduate School, General Information).

THE GRADUATE SCHOOL

Including the Graduate School of Social Work

ADMINISTRATIVE OFFICERS

EDWIN RAY GUTHRIE, Ph.D. ..... *Dean*
VERNE F. RAY, Ph.D. ..... *Associate Dean*
LOIS J. WENTWORTH, B.A. ..... *Assistant to the Dean*

Graduate Council: Dean Guthrie, *chairman;* Professors Bennett, F. Eastman, Eby, Harrison, Hitchcock, Lundberg, Mander, Marckworth, A. W. Martin, Powers, Ray, Robinson, Vail, Van Horn; Mrs. Wentworth, *secretary.*

The Aims of Graduate Study. The principal aims of graduate study are the development of intellectual independence through cultivation of the scientific, critical, and appreciative attitude of mind, and promotion of the spirit of research. The graduate student is therefore thrown more largely upon his own resources than the undergraduate and must measure up to a more severe standard. The University is consistently increasing the emphasis on graduate work.

Organization. The Graduate School was formally organized in May, 1911. The graduate faculty consists of members chosen on the basis of these criteria: activity in creative research; the teaching of courses for graduate credit with specific reference to research training; the supervision of graduate research.

General Information

General Admission Requirements. A person holding a bachelor's degree from the University or any other institution of good standing will be admitted to the Graduate School if he meets scholarship requirements. A student who wishes to work for a degree is subject to further entrance rules as indicated below. Work taken by a student who is not a candidate for a degree may not later be applied toward a degree except by special permission.

A student whose grade point average during the last year of college work was less than "B" will be admitted, if at all, on *provisional status.* When he has earned a minimum of 12 credits during one quarter with an average of "B" or better his status will be changed to that of *regular student.* An applicant denied either regular or provisional status in the Graduate School, may apply for admission only as an *unclassified student* in the college of Arts and Sciences. His application will be passed on by the Admissions Board. The unclassified student is not eligible to take graduate courses, and the work that he takes in Arts and Sciences carries no graduate credit. However, after establishing a high scholarship level in work taken, he may reapply for admission to the Graduate School.

Admission to Candidacy. Before being recognized as a candidate for a degree, a student must (1) present a "B" average for his last year of college work, (2) meet departmental scholarship requirements, and (3) be approved by a committee appointed to supervise the candidate's work. If the student's average for the last year is below "B," he must attend the University for a quarter with an average of "B" or better before he can begin residence credit toward an advanced degree. During this quarter he must carry a minimum of 12 credits. He will be classified during this time as a provisional student and none of the courses taken may apply on the program for an advanced degree.

The student must submit to the Dean of the Graduate School an Application for Admission to Candidacy on forms provided for the purpose. The master's candidate is advised to submit the application not later than the end of the first quarter of residence; the doctoral candidate not later than the end of the second quarter of residence. Later filing may delay the granting of the degrees, since the following rules apply: (1) The master's candidate may not take the comprehensive final examination for the degree earlier than two quarters following the filing of the application with the Graduate School. (2) The doctoral candidate may not take the qualifying examination earlier than four quarters following filing of the application with the Graduate School. This rule may be modified for transfer students bringing graduate credit from another school.

After receiving the application, the Dean of the Graduate School will appoint a committee for the candidate. There shall be a conference of the committee and the candidate (a) to determine whether the student has the quality of mind and the attitude toward advanced work which would justify study for an advanced degree, (b) to ascertain whether the student has the necessary foundation in the proposed major and minor subjects, and (c) to pass upon the proposed program of studies and to make any modification found desirable.

Relative to (b) above, it should be noted that any deficiency in undergraduate preparation for the major and minor subjects must be made up without credit toward the graduate degree. An undergraduate major is normally acceptable as an adequate foundation for a graduate major, and an undergraduate minor for a graduate minor, if the candidate's bachelor's degree was taken at a school of good standing. But 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 without credit other undergraduate courses in addition to those covered by the undergraduate major or minor.

If the student's application be accepted, he will then be regarded as a candidate for the degree and will be so notified. Supervision of the candidate's work and examination of the candidate shall be the further duties of the committee, which shall continue as originally constituted except as it may be modified by the Dean. The committee membership shall include at least the following: for the master's candidate, two members of the major department and one member of the minor department; for the doctoral candidate, three members of the major department, one member of each minor department, and a representative of the Graduate Council. No examination shall be conducted if less than three-fourths of committee membership be present.

Registration. With the exception of students in the Schools of Law, Medicine, and Dentistry, all students who have bachelor's degrees, regardless of classification (regular, provisional, or unclassified), must register with the Graduate School.

Before registration all students must have their programs approved by the department concerned.

Scholarship. A student may be dropped from the Graduate School when, in the opinion of the Dean and the department concerned, his work does not justify his continuance.

Employed Students. A student employed more than half time, either at the University or outside, is normally permitted to carry a maximum of 6 credits of graduate work, or a maximum of 11 credits if employed half time or less.

Grades and Credits. In the Graduate School the "D" grade carries no credit. When the "S" grade is given for Research (courses numbered 300 to 304 inclusive) or for Thesis, the credits earned are excluded from the computation of grade-point averages. Other work receiving the "S" grade is not counted toward a major or a minor until the final examination. In the reckoning of grade-point averages for the major and the minor all grades received will be included, not only those finally accepted for the degree. When courses are repeated both the original grade and the second grade will be included in the computation. Any work done for the master's degree is invalidated after a lapse of six years; for the doctoral degree, after a lapse of ten years. Elementary or lower-division courses, certain upper-division courses, and teachers' courses may not count toward major or minor requirements. Credit is not granted toward higher degrees by Advanced Credit Examination.

Sequence of Degrees. The earning of the master's degree is not a necessary step in the program for the doctoral degree, unless required by the department concerned.

Language Requirements for Foreign Students. Foreign students are required to present English as the language for the master's degree. For the doctoral degree English and a second language must be presented. Normally the second language will be French or German, but a substitution may be made if approved by the department concerned and the Dean of the Graduate School, *except* that the substituted language may in no case be the student's native tongue. To all foreign students whose native languages are other than English, these rules apply in lieu of those specified under the heading of Degrees. Certificates of proficiency in English based upon examinations taken at the University of Washington must be filed with the Dean not later than the end of the first quarter following admission to candidacy.

Commencement. All candidates for advanced degrees must attend the Commencement exercises to receive their degrees in person, unless excused by the Dean of the Graduate School.

Degrees

DOCTOR OF PHILOSOPHY. Graduate students will be received as candidates for the degree of doctor of philosophy in the following departments: Anatomy, Anthropology, Botany, Chemistry, Chinese Languages and Literature, Economics, Education, English, Fisheries, Forestry, Geography, Geology, Germanic Languages and Literature, History, Mathematics, Microbiology, Pharmacology, Pharmacy, Philosophy, Physics, Political Science, Psychology, Romance Languages and Literature, Sociology, and Zoology. This degree is conferred only on those who have attained high proficiency in the 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. No quarter of less than 9 registered credits, exclusive of thesis, may be counted for residence. In cases of transfer from other institutions, a minimum of 45 quarter credits, exclusive of the thesis, must be taken at the University of Washington. A maximum of 9 quarter credits may be allowed for work in University of Washington Extension classes.

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 be modified or waived at the recommendation of the major department and with the approval of the Dean of the Graduate School. Also, with such approval, supporting courses may be offered in lieu of one or both of the minors. A "B" average must be earned in the major and in the minors or supporting courses separately.

3. Evidence of a reading knowledge of scientific French and German or 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. Substitutions for French or German are subject to the approval of the Dean of the Graduate School; substitutions requested for both French and German must be approved by the Graduate Council.

4. Examinations:

The Qualifying Examination, given not earlier than the end of the second year and not less than two quarters before the final examination, consists of an oral, or written, or oral and written examination covering the general field and the specific courses in the major and minor fields. In so far as the examination is oral, it shall be before the committee appointed by the Dean at the time of the student's admission to candidacy.

The Final Examination is an oral, or oral and written examination, before the same committee as above (except as it may be modified by the Dean), on the field of the thesis and such courses as were taken subsequent to the qualifying examination. However, 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 subject 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.

5. The preparation of a thesis, as stated above, embodying the results of independent research. If the thesis is of such 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 the student's committee. A thesis committee of three shall be named by the members of the student's committee who represent the major department. Each member of the thesis committee shall give a written report on the thesis to the whole committee at the time of the final examination.

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 three weeks before the date on which the candidate expects to take the degree. One copy shall be bound at the expense of the candidate. A third copy is to be

filed with the major department. At the same time a digest of the thesis, not to exceed 3,000 words, must be filed in the office of the Graduate School.

Such theses as shall be designated by the Council and accepted by the Graduate Publications Committee shall be printed. The candidate shall contribute $25 to the publishing fund for theses, for which he shall receive 50 copies of his thesis if it is printed.

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 two weeks before graduation. This statement must bear the signatures of all members of the candidate's committee.

The MASTER OF ARTS degree is granted to those whose work lies in the field of the liberal arts. The thesis, if not an actual contribution to knowledge, is concerned with the organization and interpretation of the materials of learning. The MASTER OF SCIENCE degree is granted to those whose work lies in some province of the physical or biological sciences, or technology. The thesis for this degree must be an actual contribution to knowledge.

Requirements for these degrees:

1. At least three full quarters or their equivalent spent in undivided pursuit of advanced study. Graduate work done elsewhere must pass review in the examination, and shall not reduce the residence requirement at this University.

2. Completion of a course of study (as determined by the student's committee at the time of admission to candidacy) in a major and one or two minor subjects, or in a major and advanced supporting courses with the approval of the major department and the Dean of the Graduate School, and of a thesis which lies in the major field. The work in the major and minor subjects shall total not less than 36 credits of which 24 are usually in the major. The thesis normally counts for 9 credits in addition to the course work. A "B" average must be earned in the major and in the minor or supporting courses separately.

The requirement of a minor or minors may be waived but only on recommendation of the major department and with the consent of the Dean of the Graduate School.

A total of 9 quarter credits may be allowed on the program for the master's degree either in transfer from another institution or in extension class courses of the University of Washington, or the 9 credits may be distributed between the two, subject to the approval of the department concerned.

3. A reading knowledge of an acceptable foreign language is required for the degrees of master of arts and master of science. If the major for the master of arts degree is in the field of a foreign language, a reading knowledge of a foreign language other than the major must be presented. Students are responsible for acquainting themselves at the Graduate School office with the exact dates when the language examinations are to be given each quarter.

4. An oral, or written, or oral and written examination in both the major and minor subjects, given by the student's committee. If division of opinion exists among the examiners, the case shall be decided by the Graduate Council.

5. The candidate's thesis must be approved by those members of the student's committee who are representatives of the major department. If the committee is divided in opinion, the case shall be decided by the Graduate Council. At least three weeks before the date on which the candidate expects to take the degree, two copies of the thesis shall be deposited with the librarian for permanent preservation in the University archives. The cost of binding for one copy must be deposited with the thesis. A third copy is to be filed with the major department.

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 two weeks before graduation. This statement must bear the signature of all members of the student's committee.

The degrees of MASTER OF ARTS and MASTER OF SCIENCE in a particular field are given in the following technical subjects: aeronautical engineering, chemical engineering, civil engineering, electrical engineering, mechanical engineering, ceramic engineering, ceramics, coal mining engineering, engineering, geology and mining, metallurgy, metallurgical engineering, mining engineering, forestry, home economics, mathematical statistics, music, nursing, pharmacy, physical education, and regional

planning. These degrees are designed for students who have taken the corresponding bachelor's degrees in technical subjects. The requirements are essentially the same as those for the degrees of master of arts and master of science, except that in most of these subjects no foreign language is required. Special departmental requirements appear below.

The degree of MASTER in a particular field is given in the following technical subjects: business administration, education, fine arts, forestry, nursing, and social work. The requirements for these degrees are essentially the same as those for the degrees of master of arts and master of science, except that all the work is in the major or closely correlated with it and no foreign language is required. (See departmental write-ups.)

For professional degrees offered in the College of Engineering, see page 187.

IMPORTANT NOTICE TO STUDENTS

The student is held responsible for knowledge of the general rules of the Graduate School as enumerated above. These rules are *not repeated* in the departmental write-ups below but they *apply to all departments* except where more rigid rules are set up. Only *special requirements* are listed below.

Acceptance of a student by the Graduate School does not constitute acceptance by any specific department. New students should note this fact carefully and if from outside of Seattle should correspond with the department of the chosen major before coming to the campus. Thereby special unprinted requirements may be made known to them, and they may be informed whether they can be accepted by the department in terms of scholarship and enrollment limitations.

Departmental Requirements

Requirements for the degrees of *Master of Arts* or *Master of Science* in the following fields conform to the general requirements for these degrees:

Anatomy, anthropology, botany, chemistry, drama, far eastern and Slavic languages and literature, fisheries, geography, geology, Germanic languages and literature, meteorology and climatology, microbiology, philosophy, physics, physiology, political science, psychology, Romance languages and literature, Scandinavian languages and literature, sociology, speech, and zoology. For departments which have special requirements, see below.

Requirements for the degree of *Doctor of Philosophy* in the following fields conform to the general requirements for this degree:

Anatomy, botany, chemistry, Chinese languages and literature, economics, fisheries, geography, geology, Germanic languages and literature, microbiology, pharmacology, philosophy, physics, psychology, and zoology.

Special Requirements in Certain Departments

ANTHROPOLOGY. The *Master of Arts* degree is given with majors in the various fields of anthropology. The thesis must be a positive contribution to knowledge. The candidate must engage in field work although not necessarily on the subject of his thesis.

The *Doctor of Philosophy* degree is given with majors in ethnology, archaeology, or linguistics. The thesis must be based, at least in part, on original field work.

Students working half time, e.g., teaching fellows, are permitted to register for the maximum of 9 hours' credit. See also notice above.

ART. A student who has received a bachelor's degree with a major in art and who has maintained a grade average of "B" or better in his major while doing creditable work in other subjects, may become a candidate for the degree of *Master of Fine Arts*. All of the courses for this degree are taken in the School of Art. In lieu of

the usual thesis, the candidate may undertake a problem of a professional character in painting, sculpture, or design.*

BIOCHEMISTRY. In order to pursue work toward advanced degrees in biochemistry a student must have sastified the equivalent of the undergraduate requirement for a degree of Bachelor of Science in Chemistry as outlined in the College of Arts and Sciences.*

BUSINESS ADMINISTRATION. The College of Business Administration awards two advanced degrees, the *Master of Business Administration* and the *Master of Arts.*

1. The following courses (or substantial equivalents) are required as background of all candidates for graduate degrees in the College of Business Administration:

Econ. 10		Introduction to Economics
B. A. 54		Business Law
B. A. 60		Statistical Analysis
B. A. 62	and 63	Principles of Accounting
B. A. 101		Industrial Management
B. A. 102		Business Finance
B. A. 106		Principles of Marketing
B. A. 165		Human Relations in Industry and Business
B. A. 175		Business Fluctuations

Of the above courses numbered over 100, two may be offered for graduate credit when taken by students registered for graduate study.

2. The fields for graduate study offered by the College are as follows:

(1) Accounting
(2) Banking and Finance
(3) Commercial Education
(4) Foreign Trade
(5) Industrial Management
(6) Insurance
(7) Marketing
(8) Personnel and Human Relations
(9) Statistics
(10) Transportation

3. The *Master of Business Administration* degree is intended to provide a broad business education on the graduate level. Hence the work for the degree is not divided into a major and minor. All of the graduate work must be taken in business administration except that the students' committee may permit some course work outside the College.

A minimum of 20 credits in courses for graduates only is required. With the exception noted later, these courses shall include two of the following: Current Problems in Business; Seminar in Business Research; and Seminar in Administrative Accounting.

A thesis must be written in one of the fields of graduate study offered by the College. Reading knowledge of a foreign language is not a requirement.

4. For the *Master of Arts* degree a major must be taken in one of the fields of graduate study offered by the College and a minor taken outside the College.

Upon approval, a minimum of 20 credits, exclusive of thesis credits, may be offered in satisfaction of the major. A minimum of 15 credits must be earned in courses for graduates only.

5. Candidates for graduate degrees in other colleges who elect a minor in the College of Business Administration shall have as a background for the minor 15 credits in acceptable courses in business administration. The minor field shall be selected from those offered for graduate study by the College.

For a Master's degree minor, a minimum of 15 credits is required in approved upper-division and graduate courses in the minor field. For a Doctor of Philosophy degree minor, the candidate's requirements shall be decided at the conference for admission to candidacy.*

CLASSICAL LANGUAGES AND LITERATURE. A major in Greek or Latin for the degree of *Master of Arts* requires a reading knowledge of French or German and selection of courses from those numbered 150 and above.

The requirements for a graduate minor in Latin or Greek are the same as the requirements for an undergraduate major.*

* See also *Important Notice to Students,* page 183.

ECONOMICS. The Department of Economics awards the *Master of Arts* and the *Doctor of Philosophy* degrees.

The following fields are recognized in Economics for purposes of graduate work:

I. Economic Theory
II. Money, Banking, and Cycles
III. Government Regulation, Public Utilities, and Transportation
With the consent of the Advisory Committee, the graduate student may concentrate his work in two of the three sub-fields.
IV. Labor Economics
V. Public Finance and Taxation
VI. Economic History
VII. International Trade
VIII. Economic Statistics
IX. Mathematical Economics
At present fields VIII and IX are not available.

For the *Master of Arts* degree special requirements are as follows:

1. Completion of a course of study in three fields. One of the fields shall be economic theory. In any minor field a minimum of 12 credits of approved graduate work in that field is necessary in addition to satisfying the background requirements prescribed by the minor department.

With such a minor, at least 15 credits of the required work in economics must be in courses listed for graduates only.

2. If a waiver of the minor is granted, 20 of the credits (exclusive of the thesis) shall be in the courses listed for graduates only.

3. For a minor in Economics, 12 credits are required in approved advanced courses in Economics.

For the degree of *Doctor of Philosophy* a preliminary conference will be held with each prospective candidate as early as possible in his career, normally not later than the first quarter of his residence in course work. He will be required to present four of the above fields for his major in economics, one of which must be conomic theory including the history of economic thought.

The qualifying examinations shall be written in each of the fields presented by the candidate, followed by a general oral examination, all to be completed within one academic quarter. The final oral examination will be taken after completion of the doctoral dissertation.

For a minor in economics for this degree candidates should arrange their programs with the head of the Department of Economics.*

EDUCATION. The Department of Education offers four advanced degrees, the *Master of Arts,* the *Master of Education,* the *Doctor of Philosophy,* and the *Doctor of Education.* Graduate work in education presupposes preparatory training of a minimum of 20 credits in education and a satisfactory grade point.

1. The requirements for the major in education for the degree of *Master of Arts* include Educ. 291 and at least 10 credits in each of two educational fields, to total 27 credits in education. Students must also register for thesis which counts for 9 additional credits.

   The minor requires a minimum of 12 additional credits of graduate work in a department other than education.

2. For admission to candidacy for the degree of *Master of Education,* a student must have completed at least two years of successful teaching or administrative experience. The requirements for the degree are:

   a. Twenty-seven credits in graduate courses in Education.

      (1) Four to 7 credits in each of four of the following fields:

      A. Educational psychology
      B. Educational sociology
      C. Educational administration and supervision
      D. Elementary education
      E. Secondary education
      F. Classroom techniques
      G. History and philosophy of education and comparative education
      H. College problems
      I. Curriculum
      J. Guidance and extracurricular activities
      K. Remedial and special education
      L. Tests and measurements

* See also *Important Notice to Students,* page 183.

(2) Education 291

b. At least 15 credits of advanced related courses outside the department of education in at least two separate departments. Five credits of the fifteen should be in courses numbered above 200.

c. Thesis (registration for 9 credits).

d. A written final examination over the selected four fields in education.

3. The special requirements for the degree of *Doctor of Philosophy* with a major in education are:

a. Completion of 70 credits in graduate courses in education, including Educ. 287, 288, 289 (5 to 9 credits), 290, and 291.

b. Specialization in three educational fields (see list of fields under *Master of Education,* 2a), with approximately 15 credits in each field.

c. A thesis of 30 credits.

d. One minor in a department other than education with 35 credits in graduate courses, or two minors in allied departments with 20 credits of graduate work in each.

If a candidate wishes to minor in education for the degree of *Doctor of Philosophy,* he must present a minimum of 35 approved credits of graduate work in education.

4. The degree of *Doctor of Education* is a professional degree intended primarily for administrators and teachers. It provides for study in all fields of education, as well as training in the major academic disciplines necessary to administration and teaching, with modern emphasis on correlation and integration. A candidate must show adequate background, training, and promise of success in the profession of education.

a. The candidate shall offer a minimum of 135 credits as follows:

(1) Education (see fields listed under *Master of Education,* 2a).
- (a) One major field (12 to 15 credits)
- (b) Three minor fields (6 to 9 credits in each)
- (c) Education 191 or 290, 291, and 287
- (d) Electives in education to total 60 credits

(2) A minimum of 45 quarter credits of related work in departments other than education. These courses must be approved by the candidate's committee and shall be distributed among the following four groups:
- (a) Arts and Letters (9 to 15 credits)
- (b) Science and Mathematics (9 to 15 credits)
- (c) Foreign Language (9 to 15 credits)
- (d) Social Sciences (9 to 15 credits)

(3) A thesis representing the equivalent of two full quarters' work (30 credits).

b. At least three quarters must be spent in continuous residence at the University.

c. Qualifying examinations, both oral and written, are to be taken at least six months before the granting of the degree; the final examination, written and/or oral, at least two weeks before the degree is granted.

Advanced degree candidates in education who are working on theses must be registered for "thesis" unless specially exempted by the Dean of the College of Education. This registration should be for the period during which the thesis is being prepared under the direction of a major professor.*

ENGINEERING. A graduate of the College of Engineering of the University of Washington, or of any other engineering college of equal standing, will be permitted to enroll for graduate work leading to the degree of *Master of Science* in an engineering department, provided he satisfies the admission requirements of that department in addition to satisfying the Graduate School requirements for admission to candidacy as described on page 182. All applicants for graduate study in engineering must have their programs approved by their major departments prior to registration, including applicants with provisional standing because of low senior grades. Any candidate from another university may be required to take a preliminary qualifying examination before permission to register is granted.

* See also *Important Notice to Students,* page 183.

Departments granting the degree of *Master of Science* in the respective fields are listed on page 182 where the general requirements for these degrees are specified. In addition the following provisions apply:

1. The requirements for the particular degree as given in the curricula of the departments of engineering must be satisfied.
2. The thesis for this degree must be an actual contribution to knowledge.
3. No foreign language is required.
4. Students who receive Engineering Experiment Station Fellowships must be in residence a minimum of five quarters.

The degree of *Master of Science in Ceramics* may be conferred upon a graduate from a college of recognized standing provided his undergraduate preparation includes suitable courses in science and ceramics but does not meet the requirements of the engineering degrees granted in this college.

The School of Mineral Engineering may award the degree of *Master of Science* to properly qualified candidates, subject to the requirements of the Graduate School for that degree.

The degrees of *Master of Science in Regional Planning or Master of Arts in Regional Planning* are offered by various departments of the University in cooperation. Applications should be made directly to the chairman of the curriculum in Regional and Resource Planning, Professor Richard G. Tyler. A reading knowledge of a foreign language is required for each of these degrees.

Civil Engineering graduates will be held for the following preparatory courses: Math. 13; Political Science 1; Sociology 150. Graduates with social science majors should have had Econ. 1-2; Geog. 7, 102, 160; Math. 13; Political Science 1; Psychology 1; Sociology 1; and Speech 40.

The program for the advanced degree includes Architecture 138, Civil Engineering 125 and 153, Business Administration 109, Economics 150 and 161, Geography 170 and 220, Political Science 164, and Sociology 144 and 155. The thesis will normally be worked out during a summer period of approved research or practice, preferably with an established planning commission.

The foreign language requirement should be satisfied before the graduate year.

NOTE: A limited number of credits selected from the following approved list of courses may be substituted for required courses with the approval of the professor in charge of the curriculum: Sociology 131, 165, 190; Social Work 254; Political Science 61; Law 104; Forestry 65, 126, 158; Business Administration 143, 144, 145; Economics 152; Civil Engineering 150 and 152.

PROFESSIONAL DEGREES. The College of Engineering offers the professional degrees, *Aeronautical Engineer, Chemical Engineer, Civil Engineer, Electrical Engineer,* and *Mechanical Engineer* to graduates of this college who hold the degree of bachelor of science or master of science in their respective departments, who give evidence of having been engaged continuously in responsible engineering work for not less than four years, of which at least three years shall have been in the supervision of engineering projects, who are at least thirty years of age, and who present satisfactory theses.

The College also offers, through the School of Mineral Engineering, the professional degrees of *Engineer of Mines, Metallurgical Engineer,* and *Ceramic Engineer* to candidates who present evidence of five years of professional experience in the proper field after receiving a bachelors or master's degree from this college, who have spent four years in a directive or supervisory capacity in that field, and who present satisfactory theses.

In general, responsible engineering work shall be interpreted to mean work equivalent to that required for membership in the national founder engineering societies. Teaching experience shall count in lieu of professional experience in the same ratio as now recognized by the professional societies, provided that a minimum of two years of acceptable engineering work other than teaching be included.

Application for a professional degree may be made at any time and shall be accompanied by an exact statement of the applicant's record since graduation. The department concerned shall pass upon the application and select the thesis committee. Final recommendation for or against granting the degree will be based on the finished thesis. If the applicant has rendered special services to his profession by accomplishments of undisputed merit, the thesis may be waived upon presentation

* See also *Important Notice to Students,* page 183.

of articles describing such work in publications of recognized standing. The candidate must submit two copies of his thesis in final form at least one month before the date on which theses for advanced degrees are deposited in the library. Action will be taken by the faculty of the college upon recommendation of the proper department.*

ENGLISH. As preliminary training, candidates for advanced degrees in English are required to offer the equivalent of an undergraduate major in English at the University of Washington. In his graduate program, the candidate may specialize in literature, literary criticism, historical and critical studies in general literature, language, rhetoric, or advanced writing. Programs for advanced study are made in consultation with the departmental Committee on Graduate Studies. With the application for any graduate degree, the candidate must file with this committee one of his research papers.*

The Master's Degree. Candidates for the master's degree with a major in English language and literature must present a minor and at least 30 credits in English, including English 201, 202, and one of the following: 203, 230, 247; 10 credits in the seminar of the period of the thesis; and 5 advanced English elective credits. Candidates for the master's degree with a major in advanced writing may substitute for the 10 credits in the period of the thesis 10 credits in one of the following groups: English 110, 111, 112; 137, 138, 139; 156, 157, 158; 184, 185, 186; Journalism 173, 174-175; and must select a minor in literature or an approved substitute. An original, complete work in critical, expository, or narrative writing may be substituted for the thesis if recommended by the instructor in charge of the student's course in advanced writing and if the work is approved unanimously by a committee of three members of the English faculty appointed by the Executive Officer.

Minors. For a candidate for the master's degree in English the minor must be in an approved field and must total 9 advanced credits or whatever greater number may be required by the minor department. The student may petition for waiver of the minor if his previous training includes a major or a broad selection of courses in disciplines other than English.

For majors in subjects other than English, a minor in English must be equivalent to an undergraduate major, 50 credits in undergraduate and graduate work combined. At least 10 of these credits must be earned in residence at the University of Washington as a graduate student. A minimum of 5 must be in graduate courses.

The major and minor should be in related fields.

Doctor of Philosophy. Doctoral candidates must demonstrate a reading knowledge of Latin, if, in the judgment of the departmental Committee on Graduate Studies, Latin is needed for the candidate's specialization, and must take English 231 and 232 (Old English). It is recommended that the training in at least one language other than English include advanced studies in the literature of the language. These language requirements are to be supplemented by a familiarity with the classics of ancient and modern languages.

Individual programs for doctoral studies are arranged in consultation with the Committee on Graduate Studies. These programs include the above 10 credits in Old English; 10 in a seminar in each of three periods (the period before Shakespeare; the period from Shakespeare to the end of the eighteenth century; nineteenth-century English and American literature); and such other courses as are necessary to support the candidate's thesis. The candidate may specialize in literature, language, literary criticism, general literature or rhetoric, and may count for credit the courses in advanced writing accepted for the master's degree in advanced writing.

The qualifying examination is divided into definite parts:

(1) Written examination on the period of the thesis and on two related periods or divisions of study;

(2) Oral examination in three parts: lecture or discussion, questions on the minor, and general questioning:

a. On the morning of the day set for the qualifying examination, the candidate is given questions or topics on the divisions of his study not included in his written examination. From these questions or topics, he shall choose one each from two divisions of his study and prepare two lectures or discussions to be delivered to his examiners at the beginning of the oral examination. Each lecture may be followed by questioning.

* See also *Important Notice to Students*, page 183.

b. Then follows the minor examination in the form desired by the minor department.
c. Questioning on the three written examinations and related topics closes the examination.

FAR EASTERN AND RUSSIAN. The Far Eastern and Russian Institute (see page 161), in cooperation with the various departments, arranges for the degrees of *Master of Arts* and *Doctor of Philosophy* to be taken in most of the social sciences and humanities with special concentration on the Far East. A Far Eastern language is usually substituted for one of the European languages normally required. The theses are supervised by the Institute and the department concerned.

The Far Eastern and Slavic Languages and Literature department offers the degree of *Master of Arts* in Far Eastern and Slavic languages and literature. The candidate elects a linguistic major—Chinese, Russian, Slavic, or Japanese—and offers an approved program of supporting courses. Twenty credits of advanced language work must be offered. The thesis, which counts from 4 to 9 credits, must be in addition to 45 course credits.

A master of arts degree is also offered in Far Eastern and Russian studies. A working knowledge of the Russian language is required for the Russian field. Such knowledge of a Far Eastern language is desirable but not required if the candidate presents strong specialization in a discipline. Forty-five upper-division and graduate credits in Far Eastern or Russian subjects are required including F.E. 200. A minimum of 8 additional credits in seminars is required. The thesis counts for 4 to 9 credits.

The *Doctor of Philosophy* degree with major in Chinese language and literature is offered. The candidate must be able to read and translate literary Chinese and must know the history and structural features of the written and spoken language. A familiarity with the history and types of Chinese literature is required, including specialized knowledge of two of the following: one period, one school, or one author; comparative Sinitic linguistics; epigraphy. The candidate must further acquire a knowledge of general Chinese history and philosophy.

Credit will be granted toward a graduate degree only after the candidate has satisfied the departmental requirements for the bachelor's degree or their equivalent. Doctoral candidates must present 55 credits in Chinese and 20 credits in Japanese or Korean or the equivalent.*

FORESTRY AND LUMBERING. The candidate for the degree of *Master of Forestry* must earn a minimum of 45 credits in forestry taken beyond the bachelor's degree. For the degree of *Master of Science in Forestry* the candidate must present a minor in a science. Only grades of "A" and "B" can be accepted.*

HISTORY. To begin graduate work the student should have completed an undergraduate major, or its equivalent, in history. Deficiencies in this knowledge will be made up by taking appropriate undergraduate courses, a process that will almost certainly delay the award of the degree. A reading knowledge of one modern foreign language is required.

For the degree of *Master of Arts* a minimum of 45 credits is to be taken in history. A petition for waiver of the minor may be submitted. From 4 to 9 credits will be allowed for the thesis. The candidate must complete History 201 and 202, one seminar, and *graduate* courses in three fields selected for special study. The fields will cover a brief period or a restricted topic on which the student will be expected to acquire an intensive knowledge of the scholarly literature and the sources. One field will be chosen from one subject in each of the following divisions:

Division I: Ancient History; Roman Law; Medieval History; Rennaissance History

Division II: Modern European History; English History; British Empire

Division III: American History

Preparation for a minor in history for the degree of *Master of Arts* when the major is in another department shall be an undergraduate minor in history at the University of Washington, or such undergraduate preparation as the department shall deem satisfactory.

* See also *Important Notice to Students*, page 183.

For the graduate minor for the degree a minimum of 15 credits in history shall be taken, of which 10 must be in one historical subject and the other 5 must be in History 201 or 202.

For the degree of *Doctor of Philosophy* an undergraduate major, or its equivalent, in history is a prerequisite. A reading knowledge of French and German will be required.

The degree of *Doctor of Philosophy* is not to be attained by passing any stipulated number of courses. It is granted to students who, having a broad and thorough knowledge of history and the historical literature, show a rich and intimate knowledge of the subjects in which they have specialized and who contribute to historical knowledge by writing a thesis containing the results of their independent research.

As a part of their preparation for the degree all students will complete History 201 and 202 and at least two years of seminar work, will participate in the work of the advanced seminar, and will take at least four graduate courses in the fields chosen for special study. These four fields will be selected, after consultation with the department, from at least one subject in each of the following divisions:

Division I: Ancient History; Roman Law; Medieval History; Renaissance History

Division II: Modern European History; English History; British Empire

Division III: American History

In addition to these fields in history each student will be expected to complete a minor in another department.

For the minor in history when the major is in another department, the department will accept only those students whose preparation is deemed adequate. The candidate must complete History 201 and 202 and either a seminar or three fields selected from subjects in at least two divisions.

FOR STUDENTS SPECIALIZING IN FAR EASTERN HISTORY. It will be expected that students will have had at least the equivalent of an undergraduate minor in history. The other requirements are, in general, the same as those above, with the following exceptions:

Students seeking the *Master of Arts* degree need to complete only one quarter in historiography, either History 201 or 202; and will in addition prepare to pass examinations in two fields of special study. The rest of the work will be arranged by consultation with the Far Eastern and Slavic Languages and Literature department.

Students seeking the *Doctor of Philosophy* degree must—to be accepted—have had the equivalent of an undergraduate minor in history. They will be expected to take History 201 and 202, to complete one year of seminar work, and to prepare for examinations in two fields of special studies. The balance of their program will be arranged by consultation with the Far Eastern and Slavic Languages and Literature department. A Far Eastern language or Russian may be substituted for either French or German.*

HOME ECONOMICS. The department offers the following advanced degrees: (1) *Master of Arts* or *Master of Science* for which a reading knowledge of a language and a minor in an allied field are required. The *Master of Arts* is attained by work in textiles and clothing, the *Master of Science* by work in foods and nutrition. The work in each field may be combined with home economics education or family economics. (2) *Master of Arts in Home Economics* or *Master of Science in Home Economics* for which all the work may be done in home economics; or advanced courses in art, in economics, in the biological, physical, or social sciences, or in similar allied fields may be chosen in support of the selected home economics field, the total number of these credits not to exceed 12. For these degrees the student must present undergraduate preparation, in home economics and basic fields, acceptable to the staff. A reading knowledge of a foreign language is not required.

Two fields of postgraduate training are offered for graduates in institution administration. One is the dietitian internship which is given in hospitals throughout the country. A limited number of commercial apprenticeships are also available. Both are one year in duration and are endorsed by the American Dietetic Association.

A limited number of internships for administrative dietitians is provided at the University of Washington for graduates of institution administration. Students of this and other colleges may apply for appointment after completion of 195 credits. This

* See also *Important Notice to Students*, page 183.

course has been inspected and approved by the American Dietetic Association and is under the supervision of the Business Director of Dining and Residence Halls. Field work includes six months in the University Commons and Residence Halls; three months in a commercial restaurant in the downtown business district; and three months in an industrial lunch room.*

JOURNALISM. Although graduate work in journalism may be undertaken by students holding a bachelor of arts degree, or its equivalent, no degree other than that of bachelor of arts in journalism is granted. Qualified students may elect journalism as their minor field, when the major in which they plan to take their advanced degree is in an acceptably related field.*

MATHEMATICS. The candidate's undergraduate preparation in mathematics shall consist of courses at least through the calculus, and in no case shall his total credits fall short of an undergraduate major in mathematics or equivalent. Courses beginning with Mathematics 111 may be applied on the program for an advanced degree.

Master of Arts. Certain courses intimately related to the elementary field and designed primarily for high school teachers are open in the summer and may be offered toward this degree.

Master of Science. The candidate must present a minimum of 33 approved credits in mathematics, including the thesis. This course work must include at least 6 credits in each of the fields of algebra, analysis, and geometry.

The minor in mathematics for the master's degree requires at least 12 credits satisfactory to the department (exclusive of Mathematics 107, 108, 109), at least 9 of which shall be taken in residence.

Master of Science in Mathematical Statistics. The undergraduate preparation shall consist of courses in mathematical statistics through Chi-Tests or equivalent. The candidate must present a minimum of 33 approved credits in mathematics, including the thesis. This work may include, on approval, some courses in mathematical statistics needed to make up deficiencies in undergraduate preparation and must include at least 15 credits in graduate courses in mathematical statistics.

Doctor of Philosophy. The qualifying examination of the candidate shall cover the fundamental aspects of analysis, geometry, and algebra, together with a searching review of the field of the student's special interest.

A minor in mathematics for the degree of *Doctor of Philosophy* requires a minimum total of 33 approved credits, which may include acceptable courses beyond calculus taken as an undergraduate, but which shall include at least 6 credits in each of the fields of algebra, analysis, and geometry. The student must obtain approval by the department of courses selected in these fields. As supporting courses 15 approved credits constitute a minimum.*

MUSIC. Candidates for the degree of *Master of Arts in Music* must demonstrate proficiency in piano, sight reading, and melodic and harmonic dictation. The requirements for the four programs offered follow:

Major in Composition: (1) the equivalent of all music courses now required for the undergraduate major in composition; (2) 25 credits in graduate composition, which shall include compositions for chamber music, orchestra, chorus, and the thesis; (3) 21 credits in approved electives.

Major in Music Education: (1) the equivalent of all music courses now required for the undergraduate major in music education; (2) two years of approved teaching experience of which one must precede the graduate courses in music education; (3) 24 credits in seminars and research in music education, and the thesis; (4) 21 credits in approved electives.

Major in Musicology: (1) the equivalent of all music courses now required for the undergraduate major in music history and literature; (2) evidence of proficiency in the techniques of composition and in some branch of performance; (3) 24 credits in music history, seminars and research, and the thesis; (4) 21 credits in approved electives; (5) a reading knowledge of either French or German.

Major in Music Performance (Organ, Piano, Violin, Voice): (1) the equivalent of the music courses required for the undergraduate major in instrumental and vocal instruction; (2) at least six full quarters spent in pursuit of advanced study; (3) 24

* See also *Important Notice to Students*, page 183.

credits in repertoire in the major field; (4) 18 credits in seminar and thesis; (5) two or more minors.

Requirements for a minor in music when the master's degree is in another department: 12 credits chosen from approved upper-division music courses.*

NURSING. Graduate work in nursing is offered with a major in the fields of (1) administration in schools of nursing, (2) teaching and supervision, and (3) public health nursing.

For the degree of *Master of Nursing* the minor must be chosen from allied fields, such as the social sciences, education, or home economics. If the degree of *Master of Science in Nursing* is desired, the minor is to be in the fields of biological or physical science, such as physiology, anatomy, microbiology, or chemistry.

A reading knowledge of a foreign language is required for the degree of *Master of Science in Nursing* but not for the degree of *Master of Nursing.**

PHARMACY, PHARMACEUTICAL CHEMISTRY, PHARMACOLOGY, TOXICOLOGY, PHARMACOGNOSY, AND FOOD CHEMISTRY. The College of Pharmacy offers the degrees of *Doctor of Philosophy* and *Master of Science in Pharmacy.* For the master's degree not less than 20 credits shall be taken in pharmacy. At least 12 credits must be earned in a research problem and the preparation of a thesis. Not more than 25 credits are accepted in courses from other departments.*

PHYSICAL EDUCATION AND HYGIENE. The degree of *Master of Science in Physical Education* conforms to the general requirements.

For a minor in physical education for the master's degree, the student must present a minimum of 26 preparatory credits in physical education and a course in physiology, and must offer at least 12 credits in advanced courses.*

POLITICAL SCIENCE. The Institute of Public Affairs under the Department of Political Science offers a two-year professional curriculum leading to the degree of *Master of Public Administration.* The purpose is to prepare persons for administrative positions in the public service, rather than to train technical specialists, teachers or research technicians.

The program consists of instruction in six fields: the administrative process, the development of American institutions, the economics of public activity, public law, public management, and administrative problems. Three of these fields are studied in each year of the two-year program. A thesis is not required. Each student undertakes the analysis of various problems in each of the indicated fields and will be expected to complete successfully an approved internship during the summer quarter between the first and second years.

The program will be limited to a small group of college graduates who show special promise of success in the public service as judged by high intellectual ability, seriousness of purpose, personality, and personal integrity. A broad educational background in the social sciences is desired.*

PUBLIC OPINION LABORATORY. The Washington Public Opinion Laboratory was established in 1947 as an interdepartmental graduate institute for research in the social sciences. The research involves a state-wide interviewing staff and a statistical staff measuring the opinions, behavior, and conditions in samples of the population. It is a joint laboratory between the University and the State College of Washington with an office in Seattle and another in Pullman. Each graduate student is appointed a supervisor of a survey which is his M.A. or Ph.D. thesis, so that he receives laboratory training in testing hypotheses and in conducting controlled experiments in the course of basic, methodological, or civic research. The Laboratory arranges with the various social science departments an interdepartmental program of courses which constitutes a minor for M.A. and Ph.D. degrees.

Requirements for a graduate minor. Any holder of the B.A. or B.S. majoring in sociology, psychology, anthropology, economics, political science, statistics, education, journalism, or social work may minor in public opinion for a higher degree. This minor requires:

a. That the thesis of the student's major be executed in the Public Opinion Laboratory;
b. Completion of at least 36 hours of credit for the M.A., or 60 hours for the Ph.D., in courses in the sphere of work of the Public Opinion Laboratory, including completion with credit of all courses listed below, except those which were

* See also *Important Notice to Students,* page 183.

taken as an undergraduate, provided that such undergraduate credits may be used to reduce the total hour requirement by an amount not to exceed 18 hours for the M.A. and 30 hours for the Ph.D.;

c. Completion of additional hours to make up the required total in courses which shall be designated (from the list published by the Public Opinion Laboratory) by the student's committee at the time of his admission to candidacy.*

Required Courses:

Sociology 100.	General Sociology. (5)

(Students having had Soc. 1 are exempt.)

Sociology 175, 176, 177.	Systematic Sociology. (3, 3, 3)
Sociology 162.	Public Opinion. (3)
or	
Psychology 145.	Public Opinion Analysis. (3)
Sociology 132.	Methods of Sociological Research. (5)
or	
Psychology 127.	Tests and Measurements. (5)
Sociology 291, 292, 293.	Field Studies. (5, 5, 5)
Psychology 108.	Statistical Methods. (5)

(Students having had Soc. 31, Math. 13, or B.A. 60 are exempt.)

Sociology 138.	Advanced Social Statistics. (5)
Philosophy 193.	Advanced Logic. (5)

ROMANCE LANGUAGES AND LITERATURE. For the degree of *Master of Arts* with a major in one of the Romance languages, the thesis must be submitted to the department *four weeks before the end of the quarter in which the degree program is to be completed.* All students will find a knowledge of Latin particularly helpful.

For the degree of *Doctor of Philosophy* the requirements are as follows for the student who is granted a waiver of the minor: (1) the history of two Romance languages; (2) the history of three Romance literatures, as outlined in the syllabi provided by the department; and (3) a knowledge of Latin. Acquaintance with some principal masterpieces of other literature is strongly recommended as essential for historical and esthetic perspective. In cases where a minor is taken in another department, representative masterpieces of three Romance literatures must be included in the requirements. In cases where a Romance language is used as a minor for the doctor's degree, the requirements are at least the same as for the undergraduate major in that language.*

GRADUATE SCHOOL OF SOCIAL WORK. For information concerning the Graduate School of Social Work, see pages 194 and 195.

SOCIOLOGY. Candidates for the master's or doctor's degree must have completed undergraduate requirements of the Department of Sociology, or the equivalent. Students whose undergraduate work in sociology seems inadequate may be required to pass a qualifying examination before admission to candidacy. Students with an undergraduate average of less than "B" are advised against undertaking graduate work.

The fields of specialization include the following: sociological theory, research methods and social statistics, ecology and demography, social interaction, social institutions, social organization, and social disorganization.

All candidates for advanced degrees are required to submit the thesis to the chairman of the thesis committee six weeks prior to the date of the final examination. In addition to library copies, one bound copy of the thesis is to be provided for the departmental files.

Master of Arts majors are required to take 36 quarter credits of undergraduate work and 24 quarter credits of advanced work. At least 10 credits of the advanced work must be in strictly graduate courses.

Minors are required to take a minimum of 36 credits (graduate and undergraduate), of which at least half must be taken as a graduate student, including 6 credits of strictly graduate courses.

A thesis topic with a written prospectus, sponsored by a member of the faculty, must be submitted to the department for approval at the time of application for admission to candidacy.

The foreign language examination must be passed at least three months before the date of the final examination. Admission to final examinations is made upon written request by the candidate and formal approval of the committee. This examination will

* See also *Important Notice to Students*, page 183.

cover two of the fields in the major, as enumerated above, and such fields in the minor as may be determined by the members of the committee.

Minors in sociology will take a general examination covering the course work.

Doctor of Philosophy. The degree of Master of Arts should normally precede the Ph.D.; this requirement may be waived by formal action of the department.

Majors must have 36 credits of undergraduate work and a minimum of 60 credits of graduate work. At least one-third of the graduate work must be taken in strictly graduate courses. Minors must take a minimum of 18 credits of undergraduate work and 30 credits of more advanced work, including 10 credits of strictly graduate courses.

The application for admission to candidacy is to be presented to the chairman of the department before the beginning of the second quarter of residence for graduate work.

A thesis topic with a written prospectus, sponsored by a member of the faculty, must be submitted for approval.

Admission to both qualifying and final examinations is made upon written request by the candidate and formal approval. The written qualifying examination will cover four fields of specialization in the department, of which one must be research methods and social statistics; these are to be selected and indicated by the candidate. The minor for the Ph.D. must offer two fields of specialization. An oral examination following the written examination may be given at the discretion of the candidate's committee.*

THE GRADUATE SCHOOL OF SOCIAL WORK

WM. H. MCCULLOUGH, *Chairman, Executive Committee,* 500 Thomson Hall

The Graduate School of Social Work, organized in 1934, maintains a two-year curriculum which conforms to the standards of the American Association of Schools of Social Work, of which the School is a member. Among the types of positions to which this training may lead are: family case work, child welfare work, social work in the schools, medical social work, psychiatric social work, group and neighborhood work, community organization, social insurance, and social research and public welfare administration.

Admission. Application forms must be secured from the office of the School, 500 Thomson Hall, and confirmation of admission must be received from the School.

Since the facilities for field work limit the number of students to be admitted, applications for admission should be submitted by July 15, on regular forms, with official transcripts of all previous college work completed.

Requirements for admission are: (1) well-rounded undergraduate preparation that has included at least 36 quarter credits in the social sciences, such as economics, political science, sociology, anthropology, psychology; (2) a basic course in physiology or biology. Personal qualifications, including health, scholarship, and indications of probable success in social work are also considered by the admissions committee.

Persons under 21 or more than 35 years old are not encouraged to begin preparation for the profession. References are consulted and a personal interview is required whenever possible.

Curriculum. The curriculum is planned to lead to the degree of *Master of Social Work,* and no other certificate or diploma is granted. For the student who enters with the minimum requirements in social and biological sciences, a program is offered for the master's degree covering a minimum of six quarters of work.

A broad first-year curriculum is required of all students. This includes Social Casework, Growth and Development of the Individual (including medicine and psychiatry), Introduction to Public Welfare, Social Statistics, Social Group Work, Social Insurance, Social Welfare Organization, Public Assistance and Related Services, Community Organization for Social Welfare, Social Work Research, and Supervised Field Work.

In the second year, advanced courses are available in the major areas of practice, including Family Social Work, Child Welfare, Medical Social Work, Psychiatric Social Work, Community Organization, Public Welfare, and Social Agency Administration.

Students unable to remain longer than one year can complete in that time the basic curriculum, prescribed by the American Association of Schools of Social Work,

which is outlined above. Upon securing employment, they are then eligible to apply for admission to the American Association of Social Workers.

Medical Social Work Curriculum. The course plan (see courses of study) is based on the educational requirements of the American Association of Medical Social Workers. The medical social work sequence begins in the autumn quarter of each year and requires three additional quarters to complete beyond the time required for the basic curriculum.

Requirements for the Master of Social Work Degree:

1. The master's degree is awarded, not on the basis of credits for courses completed, but in recognition of the student's competency in both theory and practice in the field of social work. The comprehensive examination is the test of his competency.
2. Field work, including from 600 to 800 clock hours, depending upon the field of specialization, is taken in conjunction with the appropriate class work.
3. A minimum of three full quarters of work in residence is required. The course requirements ordinarily cover a minimum of 76 quarter credits in addition to the thesis. A reading knowledge of a foreign language is not required.
4. Candidates for the Master of Social Work degree are required to present three copies of their thesis in final form—two for the University Library, and one for the Graduate School of Social Work Library.

Fellowships, Scholarships, Prizes. See pages 97 and 98.

Loan Funds. The Mildred E. Buck Loan Fund is available for small loans to students. Applications should be made to the Graduate School of Social Work

SECTION III — ANNOUNCEMENT OF COURSES

EXPLANATION OF SECTION III

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. No fee will be charged for changes in registration made necessary by the withdrawal of a course.

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 eleven 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) number of credits, given in parentheses; a dagger is used in place of a numeral when the number of credits varies; (4) brief description of its subject matter and method; (5) name of instructor.

In the lists of department faculties, the first name in each instance is that of the department's executive officer.

SECTION III — ANNOUNCEMENT OF COURSES

ANTHROPOLOGY

Professors Gunther, Ray; Associate Professors Davidson, Jacobs, Kirchhoff; Assistant Professors Garfield, Hulse; Instructors Burroughs, Elmendorf, Osborne

Elementary Courses Primarily for Freshmen

‡51. **Principles of Anthropology: Race.** (5) Evolution and heredity as applied to man; racial classification and its significance. Staff

‡52. **Principles of Anthropology: Social Customs.** (5) Man's social customs, political institutions, religion, art, literature, and language. Staff

‡53. **Principles of Anthropology: Prehistory.** (5) Survey of world archaeology. Burroughs

Intermediate Courses Primarily for Sophomores

60. **American Indians.** (5) Ethnographic study of the native cultures of North America. Upper-division credit for upper-division students. Gunther

§63. **Africa.** (5) Prehistory, physical anthropology, and ethnography of native peoples. Upper-division credit for upper-division students. Garfield

§65. **South America.** (5) The sources and character of South American culture, with special emphasis upon Indian components. Upper-division credit for upper-division students. Kirchhoff

66. **Ancient Mexico and Central America.** (5) Descriptive and interpretive survey of the high civilizations of native North America, particularly of the Maya and the Aztec. Kirchhoff

91. **Theories of Race.** (2) Survey of human heredity; racial history; race differences. Not open to students who have had 51 or 152. Garfield, Jacobs, Ray

Upper-division Courses

101. **Culture and Personality.** (3) The interrelation of types of culture and personality patterns. Pr., 51, 52, or 53, or junior standing. Jacobs

103. **Primitive Technology.** (5) An analysis of the equipment and manufactures used by primitive people, with the use of Museum material for laboratory work. Gunther

105. **Basis of Civilization.** (3) Basic inventions, discoveries, and technological achievements of the ancient and primitive worlds; the beginnings of science. Davidson

107. **Methods and Problems of Archaeology.** (5) Includes field experience in this locality. Pr., 53. Burroughs

111. **Indian Cultures of the Pacific Northwest.** (3) Study of native peoples from N. W. California to the Gulf of Alaska. Pr., 52 or 60. Garfield

112. **Peoples of the Pacific.** (3) Ethnographic study; effects of European contacts. Pr., 52 or 15 hrs. of social sciences. Elmendorf

113. **Aboriginal Peoples of Australia.** (3) Pr., 52 or 15 hrs. of social sciences. Davidson

114. **Peoples of Central and Northeastern Asia.** (3) An ethnological survey, stressing the relationship of this area to Northwestern America. Pr., 52 or 15 hrs. of social sciences. Hulse

120. **Cultural Problems of Western America.** (3) A consideration of the historical relationships and cultural problems of the natives of the Northwest Coast, the Plateau, California, the Great Basin, and the Southwest. Pr., 60 or 111. Ray

141. **Primitive Literature.** (3) Garfield

142. **Magic, Religion, Philosophy.** (3) Pr., 52. Ray

143. **Primitive Art.** (3) Aesthetic theories, artistic achievements of preliterate peoples, with museum material for illustration. Pr., 10 hrs. anthropology or art. Gunther

145. **Early Economic Systems.** (3) Gathering, hunting, fishing, and pastoral peoples. Davidson

146. **Early Economic Systems.** (3) Early farming peoples. Kirchhoff

150. **General Linguistics.** (3) Anthropological approach to language; psychological, comparative, and historical problems; phonetic and morphologic analysis. Jacobs

151. **American Indian Languages.** (3) Methods of field research and training in phonetic recording. Pr., 150. Jacobs

152. **Introduction to Anthropology.** (5) A survey of the science of anthropology. Designed for nonmajors. Pr., junior standing, but not open to those who have had 51, 52, or 53. Gunther, Davidson

160. **History of Anthropological Theory.** (2) Pr., 15 credits in anthropology. Jacobs Gunther

179J. **Australia: Its Peoples, Environment, and Institutions.** (5) An integrated study of geographic and cultural patterns, of economic and political development and its relations with the Commonwealth of Nations. Given in conjunction with History and Geography. Davidson, Dobie, Lawton

185. **Primitive Social and Political Institutions.** (5) Pr., 52. Ray

186, 187, 188. **Physical Anthropology.** (3, 3, 3) Anthropometry and somatology of man. For advanced undergraduates. Pr., 51, Zool. 1, 2, 127-128. Hulse

Courses for Graduates Only

203. Native American Culture History. (4) A historical interpretation of the geographical distribution of critical aspects of North and South American Indian cultures. Pr., graduate standing. Kirchhoff

204, 205. Seminar in Methods and Theories. (3, 3) Ray, Gunther

206. Seminar in Indian Administration. (2) Gunther

207. Seminar in Culture Processes. (2) Davidson

208. Personality Patterns in Japanese Culture. (2) Hulse

224J. Seminar on Asia. (3) The continent will be taken in large cultural regions, the offering for 1949-50 being Inner Mongolia. Social structure, history, and relation to China and Russia. Wilhelm, Kirchhoff, Staff

241. Analysis of Oral Literature. (2) Garfield

250. Field Methods in Ethnography. (3) Ray

251. Field Methods in Archaeology. (3) Burroughs

252. Field Methods in Linguistics. (3) Jacobs

260. Seminar in the History of Anthropology. (3) Jacobs

300. Graduate Research. (†) Staff

‡ Courses 51, 52, 53 may be taken in any order.
§ Not offered 1949-50.

ARCHITECTURE

Professors Herrman, Gowen, Hill, Pries; Assistant Professor Dietz; Instructors Hugus, Lovett, Mithun, Sproule, Steinbrueck, Wilson; Acting Instructors Olsen, Reichert, Robrer, Waldron, Wherrette

1, 2. Architectural Appreciation. (2, 2) General survey of architectural design from a historical viewpoint. Herrman

3. The House. (2) An analysis of domestic architecture. Herrman

24, 25, 26. Basic Design. (6, 6, 6) Design and drawing fundamentals, to provide a working knowledge, language, and tools for the architect. Hugus, Wilson

40, 41, 42. Water Color. (3, 3, 3) Still life and outdoor sketching. Pr., major in architecture. Hill

51, 52. History of Architecture. (2, 2) Byzantine, Romanesque, and Gothic periods. Pr., 2. Pries

54, 55, 56. Architectural Design, Grade I. (7, 7, 7) Pr., 26. Pries

61, 62, 63. Materials and Their Uses. (2, 2, 2) Pr., Physics 13. Waldron

101, 102, 103. History of Architecture. (2, 2, 2) Comparative study of the Renaissance in Europe. Pr., 52. Herrman

104, 105, 106. Architectural Design, Grade II. (7, 7, 7) Pr., Arch. Design, Gr. I. Herrman, Gowen, Steinbrueck, Mithun

110, 111, 112. Architectural Drawing. (4, 4, 4) Orthographic projection, shades and shadows, perspective, drafting and rendering techniques. Mithun

120, 121, 122. Contract Drawings. (2, 4, 4) Lectures and drafting-room practice. Pr., Arch. Design, Gr. II, C.E. 118. Dietz

135. Introduction to City Planning. (2) Circulation, recreation, open areas, public buildings, private development, new towns, and garden cities. Pr., major in Regional Planning or junior in architecture.

151. History of Architecture. (2) From the middle of the eighteenth century to the present. Pr., 103. Gowen

152, 153. Theory of Architecture. (2, 2) Design theory, composition, scale, planning. Pr., Arch. Design, Gr. I. Gowen

154, 155, 156. Architectural Design, Grade III. (7, 7, 7) Pr., Arch. Design, Grade II. Gowen, Pries

160, 161, 162. Architectural Problems. (3 to 7 each quarter) Pr., 156. Pries

169. Specifications and Contracts. (3) Contract forms, office organization and methods, ethics. Pr., senior in architecture. Waldron

180, 181, 182, 183. Principles of City Planning. (1 or 2 each quarter) History, theory, objects and scope; planning technique, development of comprehensive plan, zoning, subdivision control, site planning, administration, legislation. Pr., major in City Planning.

190, 191, 192, 193, 194. City Planning Design. (5, 5, 5, 5, 7) Towns, cities, community pattern, housing groups, shopping centers, recreation areas. Last quarter includes thesis. Pr., major in City Planning.

ART

Professors Isaacs, Foote, Hill; Associate Professors Benson, Bonifas, Johnson, Penington; Lecturers Lee, Del Giudice; Assistant Professors Curtis, DuPen, Rossbach; Instructors Alps, Anderson, Brazeau, Collins, Fuller, Hensley, Lowry, Mason, Patterson, Westphal; Acting Instructors Anderson, Davis, Heiberg; Associates Smith, Tsutakawa

The School of Art reserves the right to retain student work for temporary or permanent exhibition.

1. Elementary Drawing and Design. (5) Introductory studio course for the general student rather than the major in art. Hensley

5, 6, 7. Drawing. (3, 3, 3) Perspective, light and shade, composition, pencil and charcoal.

9, 10, 11. Design. (3, 3, 3) Art structure as the basis for creative work in advanced courses. Problems in organization of line, space, and color. Lectures, discussion, and supplementary reading.

12. History of Art Through the Renaissance. (5) Not open to freshmen. Survey of the main developments in painting and sculpture from prehistoric times through the Renaissance; illustrated with slides and colored reproductions. Johnson

15, 16. Laboratory Drawing. (3, 3) Exact representation of objects such as bones, shells, and plants. Three-dimensional form is stressed with pencil, pen and ink, carbon pencil, and colored crayon techniques used in science or other work requiring accuracy and detail. Curtis

32, 33. Drawing for Architects. (2, 2) Accurate representation in pencil and charcoal from architectural forms and still-life, creative compositions. Hill

34. Sculpture for Architects. (2) Modeling from casts and composition. DuPen

51. Figure Sketching. (1) Sketching from the posed model. Pr., three credits in drawing.

53, 54, 55. Two and Three-dimensional Design. (3, 3, 3) Study of materials as a factor in design. Class experimentation and research. Penington

56, 57, 58. Painting. (3, 3, 3) Oil and watercolor painting from still-life and casts, introduction to life and outdoor sketching, lectures and reading. Pr., 5, 6, 7. Hill, Brazeau

62. Essentials of Interior Design. (2) Illustrated lectures. Foote

65, 66, 67. Drawing and Painting. (3, 3, 3) Continuation of 56, 57, 58, for majors in painting; outdoor sketching in oil and watercolor. Hill

72, 73, 74. Sculpture. (3, 3, 3) Fundamentals of composition in the round and in relief, creative work stressed. Pr., sophomore standing or permission. DuPen

80, 81, 82. Furniture Design. (3, 3, 3) Design as it applies to furniture. Study of materials and construction. Working drawings, color-plates, and models executed. Art 83 to be taken with 80. Pr., 5, 6, 7, 9, 10, 11. Foote

83. History of Furniture and Interior Styles. (2) Lectures illustrated with slides on appreciation and historical development of furniture and its architectural backgrounds from the Renaissance to the present time. Foote

100. Elementary Crafts. (2) Problems in various media and processes adapted to secondary schools, service and recreation groups. Papier-mâché, leather, weaving, etc. Open to nonmajors with sophomore standing. Required for those majoring in public school art. Johnson

101. Elementary Interior Design. (2) Fundamental problems in interior design including floor and wall plans at scale, furnishings and color schemes. For the general student and those wishing to teach art in the public schools. No prerequisite. Foote

102. Bookmaking and Book-Binding. (2) Pr., junior standing in art or permission. Johnson

103. Ceramic Art. (3) Processes of pottery-making, coil and slab. Studies of profile and dimensions. Pr., junior standing in art or permission. Bonifas

104. Ceramic Art. (3) Glazing and decoration. Contact with clay; glaze composition; packing and firing the kiln. Pr., 103. Bonifas

105. Lettering. (3) Design in letters and the composition of letters. Pr., 7, 11, or permission. Benson

107, 108, 109. Portrait Painting. (3, 3, 3) Pr., 56, 57, 58. Isaacs

110, 111, 112. Interior Design. (5, 5, 5) Fundamentals of interior design. Includes scaled drawings of floor and wall plans, perspective, study of color and texture. For the special student; general students by permission. Art 62 to be taken with 112. Pr., 5, 6, 7, 9, 10, 11. Foote

116, 117, 118. Design for Industry. (3, 3, 3) Pr., senior standing in Ind. Design or permission. Penington

120. History of Modern Sculpture. (2) Sculpture since the Renaissance; lecture and slides. Pr., sophomore standing. Not open to those who have had Art 20. DuPen

122, 123, 124. Sculpture. (3, 3, 3) Pr., 72, 73, 74, or permissiin. DuPen

126. History of Painting Since the Renaissance. (2) Lectures illustrated with slides and colored reproductions. Pr., sophomore standing. Isaacs

129. Appreciation of Design. (2) Lectures on the fundamentals of design, illustrated by slides and by actual objects including paintings, pottery, textiles, etc. Reading and reference work. Benson

130. Advanced Ceramic Art. (3) Design, glazing, decoration, throwing, and plaster mold. Pr., 104. Bonifas

132, 133, 134. Advanced Sculpture. (3, 3, 3) Continuation of prerequisite courses. Pr., 122, 123, 124. DuPen

136, 137, 138. Sculpture Composition. (5, 5, 5) Imaginative design; problems met in professional practice. Pr., 132, 133, 134. DuPen

140. Design for Printed Fabrics. (3) Hand-block and silk-screen printing. Study of mass production design. Pr., 53, 54, 55. Penington

150. Illustration. (5) Pr., senior standing in art, including life drawing.

151, 152. Printmaking. (5, 5) Lithography, etching, serigraph, linoleum block, wood-cut, wood-engraving. Pr., senior standing in art or permission. Alps

153, 154, 155. Advanced Ceramic Art. (3, 3, 3) Plaster work, and throwing, firing, decoration, and glazing. Pr., 130. Bonifas

157, 158, 159. Design in Metal. (3, 3, 3) Design and construction of objects in copper, pewter, brass, silver, and gold. Various processes including etching, enameling, stone setting. Pr., junior standing in art or permission. Penington

160, 161, 162. Life. (3, 3, 3) Drawing and painting from the model, anatomy. Pr., 56, 57, 58. Isaacs, Staff

163, 164, 165. Composition. (3, 3, 3) Development of individuality in painting through creative exercises. Pr., life, 3 credits. Isaacs

166, 167. Commercial Design. (5, 5) Composition in advertising art. Brief review of styles of advertising art; the idea and its expression in terms of design. Practice in using a variety of mediums, with special consideration for methods by which the work is to be reproduced. Pr., 105, 55. Benson

169, 170, 171. Costume Design and Illustration. (2, 2, 2) Pr., 6, 11. Benson

172, 173, 174. Advanced Interior Design. (5, 5, 5) Advanced problems related to contemporary needs. Research in period styles. For the special student. Pr., 112. Foote

175, 176, 177. Advanced Painting. (3, 3, 3) Pr., 56, 57, 58. Hill, Staff

179, 180, 181. Advanced Costume Design and Illustration. (2, 2, 2) Pr., 169, 170, 171. Benson

182, 183, 184. Eastern Art. (3, 3, 3) Survey of Eastern Art from the beginning to the present day. Illustrated. Not open to those who have had Asiatic Art. Lee

185, 186, 187. Advanced Ceramic Art. (5, 5, 5) Continued use of the processes with emphasis on design for industry. Pr., 153, 154, 155. Bonifas

195, 196, 197. Senior Seminar. (1, 1, 1) Pr., senior standing in art. Required of all seniors.

Courses for Graduates Only

207, 208, 209. Portrait Painting. (3, 3, 3)

222, 223, 224. Advanced Sculpture. (3 or 5 each quarter)

250. Advanced Illustration. (3 or 5)

251, 252. Advanced Printmaking. (3 or 5 each quarter)

253, 254, 255. Advanced Ceramic Art. (3 or 5 each quarter)

260, 261, 262. Advanced Life Painting. (3 or 5 each quarter)

263, 264, 265. Composition. (3 or 5 each quarter)

ASTRONOMY

Associate Professor Jacobsen

1. Astronomy. (5) Star finding, solar system, sidereal universe. Jacobsen

101. Astrophysics and Stellar Astronomy. (3) Interpretation of stellar spectra; motions, types of stars. Pr., physics, calculus; pr. or concurrent, 1. Jacobsen

103. Spherical Astronomy. (3) Spherical triangles, celestial sphere, planetary motions. Pr., calculus; pr. or concurrent, 1. Jacobsen

104. Advanced Spherical Astronomy. (3) Aberration, parallax, precession, nutation, special subjects. Pr., 103, or permission. Jacobsen

105. Practical Astronomy. (4) Determination of latitude, longitude, time, azimuth. Sextant work. Pr., trigonometry; pr. or concurrent, 1; permission. Jacobsen

199. Astronomical Research. (†) Research on current or special astronomical problems. Jacobsen

BACTERIOLOGY

(See Microbiology, page 253.)

BOTANY

Professor Hitchcock; Associate Professors Blaser, Roman; Assistant Professor Stuntz; Instructors Dyar, Hardy, Muhlick, Walker

For those who expect to take no more than 5 credits of botany, courses 1, 3, or 16 are recommended. For those who expect to take 10 credits of botany, courses 1 and 2; 1 and 3; 2 and 3; 1 and 16; 1 and 24 or 25; or 1, 24 (2 credits) and 101 are suggested.

Courses 1, 13, and 17 are beginning courses partially covering the same material, therefore only one of these courses may be taken for full credit.

Introductory Courses

1-2. General Biology. (5-5) Principles of biology applying to all living forms, illustrated by representatives of major plant and animal groups and introducing man's place in nature. Recommended for teaching majors and for nonmajors in the biological sciences. Three lectures, one quiz, and three hours laboratory. Blaser and Martin

† To be arranged.

1, 2. **Elementary Botany.** (5, 5) 1: Structure, physiology, and reproduction of seed plants. No pr. 2: Structure and relationships of the major plant groups. Pr., 1, 1 yr. high school botany, or Biol. 1-2 (see above). Dyar, Walker, Blaser

3. **Elementary Botany.** (5) Local flora. Training in the identification anl recognition of our ferns and seed plants. No pr. Hitchcock

16. **Economic Botany.** (5) Uses of plants by man. No pr.

17, 18, 19. **Forestry Botany.** (3, 3, 3) 17: Structure of seed plants; 18: Morphology of fungi and reproduction of seed plants; 19: Physiology of seed plants. Stuntz, Hitchcock, Dyar, Walker

24. **Plant Propagation.** (3) Must be taken in conjunction with 24L. Methods of propagation by seed, cuttings, grafts, etc. Pr., 1 or equivalent. Hardy

24L. **Plant Propagation Laboratory.** (2) Propagation by seed, cuttings, grafts, etc.

25. **Garden Ornamentals.** (3) Must be taken in conjunction with 25L. Identification and culture of garden plants and their use in landscape development. Pr., 1 or equivalent. Hardy

25L. **Garden Ornamentals Laboratory.** (2) Identification and culture of garden plants.

Upper-Division Courses

101. **Ornamental Plants.** (3) Identification and use of trees and shrubs. Pr., 3 or equivalent. Hardy

105, 106, 107. **Morphology.** (5, 5, 5) Pr., 2 or equivalent. 105 and 106: Vascular plants; 107: Algae and Bryophytes. Blaser

108. **Introduction to Genetics.** (3, lecture only, or 5) Pr., 10 credits in biological sciences. Roman

109. **Cytogenetics.** (3, lecture only, or 5) Chromosomal behavior in relation to genetics. Pr., 108, permission. Roman

110. **Topics in Genetics.** (2) Current problems and research methods in genetics. Pr., 108, organic chemistry, and permission. May be repeated for a maximum of 6 credits. Roman

111. **Forest Pathology.** (5) Common wood-destroying fungi and diseases of forest trees. Pr., 18, 40, or 105.

115. **Yeasts and Molds.** (5) Their classification, recognition, cultivation, and relation to the industries and to man. Pr., 15 credits in botany, microbiology, or zoology. Stuntz

119. **Microtechnique.** (5) Pr., 10 credits in biological sciences.

124. **Ornamental Horticulture.** (5) The control of plant growth conditions. Pr., 24, 150. Hardy

125. **Ornamental Horticulture.** (5) Principles and problems of greenhouse crop production. Pr., 124. Hardy

126a, b. **Taxonomy Field Trip.** (*, max. 27) Field study of flora of the Pacific Northwest. Offered summers only.

129. **Plant Anatomy.** (5) Tissues; origin and development of the stele. Pr., 1. Blaser

132. **Algology.** (6) Pr., 2 and 107. Offered at Friday Harbor only.

134, 135. **Taxonomy.** (5, 5) The flowering plants. Pr., 3 or equivalent. Hitchcock

140, 141. **Mycology.** (5, 5) 140: Structure and classification of basidiomycetes and ascomycetes. Pr., 1 an 2, or equivalent as determined by instructor. 141: Structure and classification of phycomycetes and fungi imperfecti. Pr., 1 and 2, or 140, or equivalent as determined by instructor.

143. **Elementary Plant Physiology.** (5) Designed for the general student. Pr., 1 and Chem. 2 or 22 or equivalent. Open for only 3 credits for those who have had Botany 19. Dyar, Walker

144. **Plant Physiology.** (5) Pr., 1, 13, or 19, and Organic Chem. Recommended for biology majors. Not open to those who have had 143. Dyar, Walker

145, 146. **Advanced Plant Physiology.** (5, 5) 145: Metabolism of organic compounds. 146: Permeability, mineral nutrition, water relations, and growth. Pr., 144, or 143 and Chem. 132, and permission.

150. **Mineral Nutrition.** (5) The soil and culture solution as nutrient media for the growth of plants. Pr., 1 or 19, 10 credits in Chem. Walker

151. **Range Plants.** (3) Their recognition and economic importance. Pr., 3. Hitchcock

180, 181, 182. **Plant Pathology.** (5, 5, 5) Pr., 140. Stuntz

199. **Special Problems in Botany.** (1 to 15) Permission of instructor concerned. Staff

Courses for Graduates Only

200. **Seminar.** (1) Staff

242. **Advanced Fungus Morphology.** (5) Comparative morphology and reproduction of all the groups of fungi; phylogeny. Pr., 140, 141.

247. **Physiology of the Fungi.** (3, lecture only, or 5) Nutrition and metabolism of fungi. Pr., 141, 144, or 143 and Chem. 132, and permission. Dyar and Stuntz

248. **Physiology of the Algae.** (6, at Friday Harbor; 3, lectures only, or 5 at University). Pr., 144 or 143 and Chem. 132, and permission. Dyar, Walker

300. **Research.** (*) Original investigations of special problems in genetics, morphology, mycology, taxonomy, horticulture, or plant physiology. Staff

COLLEGE OF BUSINESS ADMINISTRATION

Courses Required of All Students

Professors Cox, Mackenzie; Associate Professors S. D. Brown, Butterbaugh, Cannon, Wheeler; Acting Associate Professor E. G. Brown; Assistant Professors Barnowe, Goldberg, Hanson, Roller, Walker; Lecturers Botzer, Burrus, Espedol, Fordon, Hamack, Purdue; Instructor Kolb

1. **Business Organization.** (5) The nature of business problems; various types of ownership; physical factors involved in location of business; personnel aspects; marketing problems, devices and institutions; devices for long and short term financing; managerial controls such as accounting, statistics, and budgets; and the relation of business to government. Cox

54. **Business Law.** (5) Introduction to the study of law, its origin and development; formation and performance of contracts; fraud, mistake, duress and undue influence; rights of third parties and remedies available at law and equity; the law of agency as affecting the rights and duties of the principal, the agent, and third parties in their interrelationship. Pr., sophomore standing. Brown, Goldberg, Botzer, Purdue

60. **Statistical Analysis.** (5) Statistical methods and their application to practical economic and business problems. Pr., 1. Butterbaugh, Hanson

62. **Principles of Accounting.** (5) The fundamental theory of accounts. Three lectures, four hours a week in laboratory. Pr., sophomore standing. Staff

63. **Principles of Accounting.** (5) Covering partnerships, corporations, and manufacturing. Three lectures, four hours a week in laboratory. Pr., 62. Staff

101. **Industrial Management.** (5) The internal organization of the business enterprise and topics related thereto; standards, incentives, labor-management cooperation, planning, etc. Pr., 1. Schrieber

102. **Business Finance.** (5) A course dealing with the short term and long term financial problems of business enterprise. Pr., 1, 63. Kolb

106. **Principles of Marketing.** (5) Principles, processes, systems; middlemen and their functions; legislation. Pr., 1. Burd, Miller, and Staff

165. **Human Relations in Industry and Business.** (5) Through class discussion of actual cases, this course develops a useful way of thinking about and securing understanding of human situations in industry and business. Useful concepts and methods used in dealing with human situations are developed as aids in diagnosing as well as in taking action. Pr., junior or senior standing. Barnowe

175. **Business Fluctuations.** (5) Survey of business fluctuations-trends, seasonal variations, irregular fluctuations, and business cycles; proposals for controlling them; analysis of current economic conditions; business forecasting. Pr., senior standing. B.A. 175 or Econ. 122 are interchangeable and may be offered to meet business administration or economics requirements. No credit to students who have had E.B. 175. Demmery, Wheeler

Courses Available to All Students—Arranged in Major Fields

ACCOUNTING, MANAGEMENT, AND STATISTICS

Accounting

Professors Cox, Gregory, Mackenzie; Professor Emeritus McConahey; Associate Professors Cannon, Lorig; Assistant Professors Roller, Walker; Lecturers Draper, Fordon

110. **Accounting Analysis and Control.** (5) Analysis and interpretation of accounting statements, with principles of valuation. Pr., 63. Lorig, Walker, Fordon

111. **Advanced Theory of Accounts I.** (5) Application of accounting theory to business problems. Pr., 110. Draper

112. **Advanced Theory of Accounts II.** (5) Insolvency and receiverships; branch offices; parent and subsidiary accounting: mergers, consolidations, consolidated statements; estates and trusts. Pr., 111. Cannon

152. **Government Accounting.** (5) A study of accounting and financial reporting for municipal, county, state, and federal governments. Pr., 112 or permission. Lorig

153. **Accounting Systems.** (5) A thorough study of accounting and personnel problems to be considered in developing and installing accounting systems. Pr., 112 or permission. Lorig

154. **Cost Accounting I.** (5) Economics of cost accounting; industrial analysis; production control through costs; types of cost systems, burden application. Pr., 110. Gregory

155. **Cost Accounting II.** (5) (Not offered in 1949-1950.)

156. **Income Tax Accounting.** (5) A study of Federal Revenue Acts and their application to individuals and different types of business organization. Pr., 112. Roller

157. **Auditing.** (5) A study of the theory, principles, procedures, and practices of auditing. Pr., 112. Cox

158. **C. P. A. Problems.** (5) Selected problems taken from American Institute of Accountants and state C. P. A. examinations. Pr., 154, 157. Mackenzie

159. **Field Work in Accounting.** (2) Full-time employment in the field of accounting for one quarter. Reports required. Pr., 157.

195A, B, C. **Research in Management and Accounting.** (3, 3, 3) Open to qualified undergraduates and graduate students. Pr., permission. Gregory

Management

Assistant Professors Barnowe, Schrieber, Woodward; Lecturer Hamack

119. **Office Management.** (5) Office organization; supervision of office functions; office personnel problems. Pr., junior standing. Hamack

150. **Advanced Industrial Management.** (5) Case studies of companies from the viewpoint of the chief executive. Pr., 101. Seniors in management only or permission. Schrieber

151. **Production Control.** (5) The organization of the production planning and control department, standards for planning and control, control of inventories of raw materials, goods in process and finished goods. Pr., 101. Schrieber

166. **Industrial Relations for Engineers.** (3) This is a summary course dealing with the principles and practices of the management of personnel in industry. Pr., B.A. 1 or equivalent, and junior standing. Should be taken with or preceded by Psych. 4. Barnowe

167. **Personnel Management.** (5) Surveying the practices and techniques of personnel activities of business and industrial concerns with emphasis on employment, training, employee relations, counseling, employee services, safety, wages and salary administration, and personnel research. Pr., 165. Barnowe

Statistics

Associate Professor Butterbaugh

170. **Advanced Statistical Analysis.** (5) Analysis of problems and cases to develop ability in applying statistical techniques to practical problems in economics and business. Pr., 60. Butterbaugh

171. **Sampling.** (3) The theory and practice of sampling as applied to commercial and industrial problems. Tests of reliability of measures and the significance of differences in results obtained in sampling. Introduction to the use of statistics in control of quality of incoming materials and manufactured products. Pr., 60. Butterbaugh

172. **Correlation.** (3) The theory and practice of simple and multiple correlation techniques as applied to business problems. The use of graphic multiple correlation in commercial outlook forecasting; application of correlation techniques in managerial problems. Validity tests of correlation results. Pr., 60. Butterbaugh

191. **Statistical Problems.** (3) An advanced course dealing with sampling theory; statistical quality control; techniques of forecasting through use of multiple correlation, time series analysis, and business index-numbers; and analysis of variations in statistical results. Pr., 170. Butterbaugh

BANKING, FINANCE, AND INSURANCE

Banking and Finance

Professors Dakan, Preston; Assistant Professor Henning

120. **Money and Banking.** (5) Nature and functions of money; the banking system, other credit granting institutions, and the relationship of money and bank deposits to the economy. Pr., 1 or Econ. 10. B.A. 120 and Econ. 120 are interchangeable and either may be offered to meet Business Administration or Economics requirements. No credit to students who have had E.&B. 103 or Econ. 120. Preston

121. **Corporation Finance.** (5) General and specific principles and practices in the administration of capital of corporate enterprises. Pr., 63, 102 or 120. Dakan

122. **Principles of Investment.** (5) General principles of selection and protection of security holdings. Pr., 121 or permission. Dakan

123. **Investment Analysis.** (5) Analytical study of typical industrial, public utility, and railroad securities; current corporation reports and prospectuses as a basis of determining investment values. Pr., 122. Dakan

124. **Credit Administration.** (3) Current capital management. Current capital needs, sources of current capital, credit as a factor in the production and distribution of commodities. Commercial credit as a basis for bank credit. Installment credit as a selling device. Sources of credit information. Work of the credit department. Pr., 120. Dakan

125. **Banking Policy and Administration.** (5) An analysis of the functions and administration of commercial banks in serving the credit needs of business. Emphasis is given to the relation of the Federal Reserve System to commercial bank policy. Pr., 120. Preston

126. **Bank Credit Administration.** (3) Based upon selected cases of loans to Pacific Northwest industries and agriculture. Pr., 63, 120, and permission.

127. **Foreign Exchange.** (5) Principles of international exchange; financing imports and exports; foreign exchange markets; foreign banking by American institutions; current status of foreign exchange. Pr., 120. Preston

Insurance

Acting Assistant Professor Bickley

108. Risk and Insurance. (5) Nature of risk and uncertainty; evaluation of existing methods of dealing with business risks, with emphasis on the structure of the insurance mechanism and the important types of insurance coverage and ways of programming them to meet individual and business needs. Pr., B.A. 1. Bickley

128. Insurance Coverage for Business. (5) A study of life, fire, marine, and casualty insurance contracts; insurance companies and their organization. Course designed primarily for majors in accounting, real estate, and insurance. Pr., B.A. 1. Bickley

129. Insurance Rate-making and Programming. (5) Theory of probability, rate-making, and reserves; underwriting; service functions; inter-company cooperation; regulation and taxation; social insurance; programming. Pr., B.A. 108, 128. Bickley

187. Estate Planning for Insurance. (3) Wills, trusts, and estates in connection with life insurance. Pr., B.A. 55, 128. Brown

188. Loss Prevention and Adjustment. (5) Problems involved and methods employed in ascertaining and controlling risk and loss; fundamentals of the adjustment, investigation, and administration of insurance claims. Pr., B.A. 108. Bickley

198A. Advanced Problems in Life. (3) Study of current problems in life insurance with outside topics assigned for analysis. Pr., permission. Bickley

198B. Advanced Problems in Fire. (3) Study of current problems in fire, marine, inland marine, and automobile insurance and surety bonding, with outside topics assigned for analysis. Pr., permission. Bickley

198C. Advanced Problems in Casualty. (3) Study of current problems in casualty insurance with outside topics assigned for analysis. Pr., permission. Bickley

MARKETING, FOREIGN TRADE, AND TRANSPORTATION

Marketing

Professors Burd, Miller; Associate Professor Wagner; Acting Associate Professor Brown; Assistant Professor Stanton; Instructor Klima

130. Sales Management. (5) Analysis of sales methods, policies, and costs from the point of view of management. Sales organization; management of the sales force—selection, training, compensation, and supervision; sales planning; sales and distribution policies. Sales problems of representative companies are analyzed. Pr., 106, and senior standing. Wagner, Stanton

131. Cooperative Marketing. (5) History, organization and methods of operation of both producer and consumer cooperatives. Pr., 106. Stanton

133. Retailing. (5) Profit planning; markup; turnover; inventories; expense, stock, markup, and buying control; operating activities. Pr., 106. Miller, Klima

134. Advertising. (5) Relation to demand, cost, price, consumer choice, marketing; who pays; research; organizations; techniques; social controls. Pr., 106. Wagner

135. Retailing Problems. (2) Analysis of retail problems from the point of view of management. Pr., 133 and marketing major. Brown

136. Advertising Problems. (2) Analysis of advertising problems from the point of view of management. Pr., 134 and marketing major. Wagner

137A, B, C. Retailing Field Work. (1, 1, 1) Pr., permission. Open to retail scholarship students only. Miller

138. Marketing Analysis. (5) Its uses, methods, and techniques. A class research project will provide practical application of methods studied. Pr., 60, 133, 134, and marketing major. Wagner

139. Marketing Problems. (5) Analysis of marketing problems from the viewpoint of management. Pr., 138, senior in marketing and permission. Miller

180A, B, C. Professional Practice in the Apparel Industry. (2, 2, 2) A practical in-training course in manufacturing of apparel. The student will work in industry as in a laboratory gaining experience in applying the techniques learned in the University. Reports must be made regularly to the major professor. Pr., permission. Klima

193A, B. Research in Marketing. (3, 3) Individual and group study. Required business contacts. Compiling, organizing, and interpreting data from original and library sources. Each student will specialize in one of the three fields. Pr., 138, senior in marketing, and permission. Burd, Stanton, Brown

Foreign Trade

Assistant Professor Henning

181. Foreign Trade Practices. (5) Foreign trade marketing; export and import fundamentals, practices, procedures, and instruments; foreign market analysis; world trade in its geographic, business, and political setting. Pr., Econ. 170. Henning

182. Problems in Foreign Trade. (5) Analysis of foreign trade problems from the point of view of management. Pr., 127, 181. Henning

197B, C. Research in Foreign Trade. (3, 3) Individual and group study. Required business contacts. Compiling, organizing, and interpreting data from original and library sources. Pr., 127, 181, and senior in foreign trade. Henning

Transportation

Professor Farwell; Acting Professor Brewer

104. **Principles of Transportation.** (5) A general survey of the elements of rail, water, highway, and air transportation. Communications. Pr., 1. Farwell, Brewer

140. **Airport Management.** (3) Aspects of airport planning, financing, operation, and management. Pr., 146. Brewer

143. **Railway Transportation.** (5) A study of railway history, routes, rates, freight, passenger, and express services, and regulation. Pr., 104. Brewer

144. **Water Transportation.** (5) Problems of ocean and inland water carriage relating to routes, rates, services, traffic, operation, and regulation. Pr., 104. Farwell

145. **Highway Transportation.** (5) Business methods and practices of common, contract, and private motor carriers in intra- and interstate operation; state and federal regulation of these carriers; highway freight rates. Pr., 104. Brewer

146. **Air Transportation.** (5) The problems of commercial air lines, with particular reference to costs, operating methods, traffic promotion, safety requirements, and regulation. Pr., 104. Brewer

148. **Traffic Management.** (5) A study of transportation buying. Problems in keeping tariff files, obtaining and quoting rates, routing, expediting, and tracing shipments, making claims, and auditing freight bills. For transportation majors only. Pr., 10 hours of transportation. Brewer

149. **Marine Insurance and Carriers' Risks.** (5) A study of contracts of affreightment, marine insurance, general and particular average, salvage, limited liability, and marine collision law. Pr., 144. Farwell

194A, B. **Research in Transportation.** (3, 3) Open only to qualified majors, who will be placed in part-time contact with transportation organizations. Pr., permission. Farwell

GENERAL BUSINESS

Real Estate

Professor Demmery

109. **Principles of Urban Real Estate.** (5) 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. Demmery

169. **Real Estate Appraisals, Brokerage and Management.** (5) Types of real estate uses and their characteristics; appraisals of farm and urban land and improvements; property rights, real estate finance; management of property; leases. Pr., 109. Demmery

199B, C. **Research in Real Estate and Business Fluctuations.** (3, 3) Open to qualified undergraduates and graduate students. Pr., permission. Demmery

Secretarial Administration

Associate Professor Tidwell; Lecturers Happ, Murphy; Associate Works

12, 13, 14. **Typewriting.** (1, 1, 1) Students who present one or more units of typewriting as entrance credit may not receive credit for B.A. 12. Works

16-17, 18. **Shorthand.** (3-3, 3) Students who present one or more units of shorthand as entrance credit may not receive credit for B.A. 16. Happ, Murphy

19. **Office Machines.** (3) Laboratory instruction and practice in the operation of selected office machines, calculators, duplicating machines, filing equipment, and devices. Works

115. **Business Correspondence.** (5) Analysis of principles, including psychological factors; study of actual business letters in terms of their fundamentals. Pr., 1; Engl. 1, 2, 3. Murphy

116, 117. **Secretarial Training.** (5, 5) Advanced shorthand and typewriting. Speed studies in taking dictation, and in transcription. General office practice and procedures. Tidwell

118. **Secretarial Practice.** (5) Application of skills acquired in shorthand, typewriting, office machines, business letter writing, etc., to an integrated model office. One 1-hour recitation, one 1-hour laboratory daily. Pr., 117. Happ

Business Law

Professor Brown; Assistant Professor Goldberg; Lecturers Botzer, Burrus, Espedol, Purdue; Associate Juhl

55. **Business Law.** (5) Real and personal property, security transactions, sales, and negotiable instruments. Pr., 54. Brown, Goldberg, Purdue

57. **Business Law.** (3) For engineering students or others unable to devote more than three credits to study of business law. May not be substituted for 54. Does not carry credit for students in business administration. Pr., sophomore standing and English requirement of respective college. Burrus, Espedol, Juhl

161. **Labor Legislation.** (5) 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., junior standing. Goldberg

178. **Law in Accounting Practice.** (3) Business associations and bankruptcy. Pr., 54, 55. Brown

Courses for Graduates Only

Professors Burd, Engle, Farwell, Gregory, Mackenzie, Preston; Associate Professors Butterbaugh, Cannon, Lorig; Assistant Professor Henning; Acting Assistant Professor Bickley

201. Seminar in Business Research. (5) Methodology and technique in business research with emphasis on planning and budgeting. Pr., permission. Engle

202B. Seminar in Finance. (5) Pr., permission. Preston

204. Seminar in Transportation. (5) Research in and discussion of current transportation problems. Pr., permission. Farwell

208. Seminar in Risk and Insurance. (5) Discussion and research on insurance and other methods of dealing with the problem of risk. Pr., permission. Bickley

214. Seminar in Foreign Trade. (5) Social and business implications of current problems in foreign trade. Pr., permission. Henning

215. Current Problems in Business. (5) Study of current business developments and problems of wide importance. Pr., permission. Engle

235. Seminar in Marketing. (5) Social, economic, and business implications of current problems in marketing. Pr., one marketing course and permission. Burd, Engle

251. Seminar in Administration. (5) A study of the administrative functions with emphasis upon organization, leadership, and control within the business unit. Pr., one advanced course in management and permission. Mackenzie

258. Seminar in Accounting. (5) Discussion and research in controversial topics in accounting theory. Pr., permission. Lorig

270. Seminar in Statistics. (5) Discussions and research in the application of statistical technique to the management function. Pr., Math. 5, B.A. 191. Butterbaugh

CHEMISTRY

(For Chemical Engineering see page 220.)

Professors Cross, Cady, Norris, Powell, Robinson, Tartar, Thompson; Associate Professors Lingafelter, Ritter; Assistant Professors Anderson, Dauben, Gregory, Krebs, Kuether, Rabinovitch, Sivertz; Instructors Crittenden, Hanahan, Schubert, Simpson.

1-2. General Chemistry. (5-5) Open only to students without high school chemistry. For engineers, premedics, and other science majors who will continue with Chemistry 23 or 26.

3-4. General Chemistry. (5-5) Open only to students without high school chemistry. For students in home economics, nursing, forestry, and for others desiring only 10 credits in general chemistry.

5-6. General Chemistry. (5-5) For students in home economics, nursing, forestry, and for others desiring only 10 credits in general chemistry. Pr., one year high school chemistry.

8-9-10. General Chemistry in Qualitative Analysis. (5-5-5) Three lectures, one quiz, two laboratories. General inorganic chemistry and qualitative analysis. Offered by College of Pharmacy for pharmacy students only.

21-22. General Chemistry. (5-5) For students who will continue with Chemistry 23. Pr., one year high school chemistry.

23. Elementary Qualitative Analysis. (5) Pr., 2 or 22.

24-25-26. General Chemistry. (3-3-3) Engineers only (except chemical engineers). Pr., high school chemistry.

37-38-39. Organic Pharmaceutical Chemistry. (5-5-5) 3 lectures, 1 quiz, 1 laboratory. The chemistry of the carbon compounds and their application to pharmacy. Pr., Chemistry 10. Offered by College of Pharmacy for pharmacy students only. Arrigoni

101. Advanced Qualitative Analysis. (5) Pr., 23. Robinson, Thompson

102. Advanced Qualitative Analysis. (4) For chemical engineers. Pr., 23. Crittenden

104. Food Chemistry. (4) Pr., 111 and 132. Norris

107. Quantitative Analysis. (4) Gravimetric, for chemical engineers. Pr., 23. Crittenden

108. Quantitative Analysis. (4) Volumetric, for chemical engineers. Pr., 107. Crittenden

109. Quantitative Analysis. (5) Gravimetric. Pr., 23. Thompson, Robinson

110. Quantitative Analysis. (5) Volumetric. Pr., 109. Thompson, Robinson

111. Quantitative Analysis. (5) Volumetric and gravimetric, for non-chemistry majors and chemistry majors in the elective curriculum. Pr., 23. Thompson, Robinson

128. Organic Chemistry Laboratory. (2) Preparation of representative compounds. Pr., 131 or concurrently.

129. Organic Chemistry Laboratory. (2) Preparation of representative organic compounds and qualitative organic analysis. For all except those planning to take 134. Pr., 128 and 132 (or 132 concurrently).

130. Organic Chemistry Laboratory. (2) Preparation of representative compounds. For those planning to take 134. Pr., 128 and 132 (or 132 concurrently).

131, 132. Organic Chemistry. (3, 3) For majors in chemistry, chemical engineering, biological sciences, premedicine, and predentistry. Structure, nomenclature, reactions, and methods of synthesis of the main types of aliphatic and aromatic carbon compounds. Pr., 22.

133. Intermediate Organic Chemistry. (3) For chemistry majors and chemical engineers who intend to do graduate work. Elaboration of fundamentals of organic chemistry with emphasis on general principles, reaction mechanisms, and practical synthetic methods. Pr., 132.

134. Qualitative Organic Analysis. (3) Identification and characterization of simple organic compounds according to standard procedures. Pr., 130.

137. Organic Chemistry. (5) For majors in home economics and nursing. A brief course covering the fundamental reactions of the carbon compounds, with emphasis on carbohydrates, fats, proteins, drugs, and other compounds of biological importance. Pr., 2, 4, or 6.

140-141. Elementary Physical Chemistry. (3-3) For premedical and science students and chemistry majors in the elective curriculum. Pr., 111, college physics. Sivertz

144. Biological Chemistry. (5) For home economics students. Pr., 137. Hanahan

155-156. Oceanographic Chemistry. (3-3) Methods of analysis and the general physical and chemical properties of sea water and sea products. Pr., 111, 132. Thompson, Robinson

161-162, 163. Biological Chemistry. (5-5, 3) Pr., 111, 132. Hanahan

166. Biochemical Preparations. (2 to 3) Pr., 162. Norris, Krebs, Kuether, Hanahan

181, 182, 183. Physical and Theoretical Chemistry. (5, 5, 5) Pr., 111, 15 credits college physics, and differential and integral calculus. Tartar

190. History of Chemistry. (3) Pr., 132, 140.

195. Undergraduate Thesis. (2 to 5) Pr., senior standing in chemistry.

Teachers' Course in Chemistry. (See Education 75C.)

Courses for Graduates Only

200. Departmental Seminar. (No credit)

201. Chemical Thermodynamics. (3) Development of the laws of thermodynamics, and their application to gases and simple chemical systems. Statistical thermodynamics. Pr., 182. Gregory

202. Chemical Thermodynamics. (3) Fugacity and activity. Applications of thermodynamic concepts to the study of chemical reactions. Thermodynamic treatment of solutions of nonelectrolytes and of electrolytes. Pr., 201. Gregory

203. Theoretical Electrochemistry. (3) Methods of measurement and interpretation of properties of electrolytic solutions. Conductance, transference numbers, activities. The Debye-Huckel-Onsager theory of solutions of electrolytes. Pr. 202. Gregory

204. Chemistry of Colloids and Surface Phenomena. (3) Types and properties of colloidal systems. Measurement and interpretation of surface tension, surface potential, and area-pressure relationships of liquid surfaces. Wetting and spreading of liquids. Nature of solid surfaces electrokinetic phenomena. Catalytic surfaces. Pr., 182. Ritter

205, 206, 207. Advanced Inorganic Preparations. (2, 2, 2) Cady

208, 209, 210. Advanced Quantitative Analysis: Theory. (2, 2, 2) Theoretical principles of analytical chemistry. Pr., 111, 182. Thompson

211. Advanced Organic Preparations. (3) For seniors or graduate students in chemistry. Preparation, isolation, and purification of organic compounds requiring more advanced techniques and specialized apparatus, and critical consideration of alternative synthetic methods. Pr., 133 or permission. Dauben, Anderson, Schubert

213. Chemical Thermodynamics. (4) Not open to those having 201. Pr., 182. Lingafelter, Gregory

214. Phase Rule. (4) Development of the phase rule in connection with one-component and multicomponent systems. Study of phase reactions. Applications to alloys, melts, salt crystallization, and related fields. Pr., 182. Sivertz

215. Chemical Kinetics. (3) Methods of measurement and interpretation of rates of chemical reactions. Transition-state theories of chemical reactions as applied to reactions in gaseous and in liquid system. Pr., 202. Rabinovitch

216. Atomic Structure. (3) Theories of nuclear structure and nuclear reactions. Introduction to the quantum mechanics of atomic structure and atomic spectra. Pr., 183. Lingafelter

217. Molecular Structure. (3) Measurement and interpretation of molecular spectra (ultra-violet, visible, infra-red, Raman), X-ray and electron diffraction, dipole moments, magnetic susceptibility, etc. Pr., 183 (216 advisable). Lingafelter

218. Quantum Chemistry. (3) Quantum theory of valence, unsaturation, molecular vibrations, and related topics. Pr., 216, 217. Simpson

221, 222, 223. Advanced Inorganic Chemistry. (3, 3, 3) Systematic study based upon periodic system. Nature of the chemical bond. Cady

224. Chemistry of Nutrition. (3) Pr., 162. Norris

225. Advanced Analytical Laboratory. (2-6) Theory and practice of optical, electronic, and other special methods useful in analysis. Pr., 183. Crittenden

226. Microquantitative Analysis. (3) Principles and technique. Pr., 141 or 182. Robinson

227. General Chemical Microscopy. (3) Theory of the polarizing microscope and its application to chemistry. Pr., 141 or 182. Robinson

228. Microqualitative Analysis. (3) Identification of ions by means of optical properties of their crystals. Pr., 101, 227. Robinson

231, 232, 233. Advanced Organic Chemistry. (3, 3, 3) Consideration of synthetic methods, structure determination, and reaction mechanism of acyclic, alicyclic, and aromatic compounds with emphasis on modern theory and practice. Courses to be taken in sequence. Pr., 133 or equivalent, including Qualitative Organic Analysis. Dauben

234. Chemistry of Natural Organic Compounds. (3) Structure determination and synthesis of carbohydrates, fats, and oils, terpenoid compounds, vitamins, and accessory dietary factors of natural origin and biological importance. Pr., permission. Anderson

235. Chemistry of Natural Organic Compounds. (3) Structure determination and synthesis of steroids, aminoacids, alkaloids, and heterocyclic compounds of natural origin and biological importance. Synthetic and natural chemotherapeutic compounds. Pr., permission. Anderson

236. Advanced Physical Chemical Laboratory. (2 or 3) Pr., 182. Sivertz

237. Physical Organic Chemistry. (3) Interpretation and application of data obtained by combined methods of organic and physical chemistry to the problems of structure of organic compounds and mechanism of organic reactions. Pr., 202, 233 (215, 217 advisable). Daubes

249. Graduate Seminars. (1-3) Offered as desired by various members of the staff.

264, 265. Biochemistry of the Hormones. (3, 3) Biochemistry of the hormones of the mammalian endocrine system. Pr., 162. Hanahan

300. Research. Maximum total credit: for master's degree, 9 cr.; for doctor's degree, 45 cr.

CLASSICAL LANGUAGES AND LITERATURE

Professors Densmore, Read; Instructor Rabinowitz

I. Greek

1-2, 3. Elementary Greek. (5-5, 5) Densmore

4,5. Socrates. (3, 3) A study based on Plato, *Apology and Crito;* Xenophon, *Memorabilia;* Aristophanes, *Clouds.*

6. The World of Homer. (3) Readings from the *Iliad.* Pr., 5. Densmore

7. New Testament Greek. (3) Read

8, 9. Grammar and Composition. (2, 2) Pr., 3. Staff

51. Sight Reading. (No credit) Pr., 5 or permission. Staff

100. Supervised Reading. (*) Staff

101. Herodotus and the Persian Wars. (3) Rabinowitz

102. Thucydides and the Peloponnesian War. (3) Rabinowitz

103. Introduction to Greek Drama. (3) One play of Euripides. Particular consideration will be given to typical aspects of the tragic form. Rabinowitz

104. Aeschylus. (3) *Prometheus Bound.* Densmore

105. Sophocles. (3) *Antigone.* Densmore

106. Lyric Poetry. (3) Densmore

140. Advanced Grammar. (3) Pr., 102.

151. Plato: Phaedo. (3-5)

152, 153. Plato: Republic. (3 to 5 ea.)

161, 162, 163. Aristotle: Politics, Poetics. (5, 5, 5)

191, 192, 193. Literary Criticism: Aeschylus. (3 to 5 ea.) Textual criticism. Aristotle and other ancient critics. Independent critical study of one play. Densmore

Courses for Graduates Only

201, 202, 203. Greek Philosophers: The Pre-Socratics. (3 to 5 ea.) Rabinowitz

211. Hellenistic Greek: Theocritus and the Pastoral. (3 to 5) Rabinowitz

300. Research. (3 to 5) Staff

II. Latin

1-2, 3. Elementary Latin and Caesar. (5-5, 5)

4, 5, 6. Cicero and Ovid. (5, 5, 5) Pr., two years high school Latin or Latin 1-2, 3 in University.

8, 9. Grammar and Composition. (2, 2) Pr., three years high school Latin.

100. Supervised Reading. (*) Staff

101. Cicero: De Senectute. (3) Pr., 6, or three years high school Latin. Rabinowitz

102. Catullus. (3) Pr., as for 101. Rabinowitz

103. Vergil: Georgics and Bucolics. (3) Rabinowitz

104. Sallust. (3) Rabinowitz

105. Ovid. (3) Rabinowitz

130. Livy. (3) Pr., 101, 102, 103, or permission.

131. Horace. (3)

132. Tacitus. (3)

133. Plautus and Terence. (3)

140. Syntax and Prose Composition. (3)

150. Juvenal. (3) Pr., 130.

151. Cicero: Tusculan Disputations. (3)

153. Augustine: Confessions. (3) Read

154. Lucretius. (3) Read

160, 161, 162. Major Conference. (1, 1, 1) 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. Staff

Courses for Graduates Only

204. Tacitus: Histories. (3)
207. Seneca: Moral Essays. (3)
211. Latin Novel. (3) Read
214. Suetonius: Augustus. (3)
218. Cicero: De Natura Deorum. (3)
287. Medieval Latin. (3) Pr., permission.
300. Research. (*) Staff

III. Courses in Classical Antiquities, Given in English

Greek

12, 13, 14. Greek Literature. (2, 2, 2) 12: Homer; 13: Lyric Poetry and Drama; 14: History and Philosophy. Rabinowitz
17. Greek and Roman Art. (5)
18. Greek and Roman Mythology. (3) Rabinowitz
115. Readings in Ancient Science. (3)
116. Greek Humanism. (3)

Not offered in 1949-1950: *Greek* 161, 162, 163, Aristotle; *Latin* 105, Ovid; 132, Tacitus; 133, Plautus and Terence; 150, Juvenal; 204, Tacitus; 218, Cicero.

DENTISTRY

Dental Histo-Pathology and Periodontology

Professor Thomas; Assistant Professor Ingle; Instructor Ogilvie; Clinical Instructor Starks

101. Comparative Dental Anatomy. (1)
102. Dental Histology and Embryology. (4)
125. Introduction to Periodontology. (1)
126. Pulp Canal Therapy Technic. (2)
153-154. Periodontology. (1-1)
156-157-158. Clinical Periodontology. (1-1-1)
159. Endodontia. (1)
175-176. Advanced Periodontology. (1-1)
178-179-180. Advanced Clinical Periodontology. (1-1-1)

Courses for Graduates Only

200, 201. Advanced Oral Histology and Embryology. (2, 2)

Dental Materials

Assistant Professor Nelsen; Instructors Morrison and Sproule; Clinical Instructor Plummer

101. Dental Materials. (5)

Dental Science and Literature

Professor Jones; Assistant Professor Anderson

101. Orientation. (1)
125. Dental History. (1)
150-151. Dental Medicine. (1-2)
153. Technical Composition. (2)
175-176-177. Applied Dental Science. (2-1-1)
178-179-180. Dental Ethics and Office Management. (2-1-1)
181. Jurisprudence. (1)

Fixed Partial Dentures

Associate Professor Baker; Clinical Professors Anderson, Hagen; Clinical Associate Professor Schultz; Clinical Instructors German, Smith, Miska, and Beebe

125-126-127. Fixed Partial Denture Technic. (4-4-4)
128. Ceramics. (2)
150-151-152. Fixed Partial Dentures. (1-1-1)
153-154-155. Clinical Crown and Fixed Partial Dentures. (2-2-2)
175-176. Advanced Fixed Partial Dentures. (1-1)
178-179-180. Advanced Clinical Crowns and Fixed Partial Dentures. (2-2-2)

Operative Dentistry

Professors Stibbs, Jones; Associate Professor Pratt; Assistant Professor Nelsen; Instructors Morrison, Sproule; Clinical Professor Hampson; Clinical Assistant Professor Vandewall; Clinical Instructors Smith, Strizek

101. Elementary Operative Dentistry Technic. (6)
103-104-105. Oral Anatomy. (4-4-2)
125-126-127. Operative Dentistry Technic. (2-4-2)
128. Clinical Orientation. (2)
150-151-152. Operative Dentistry. (1-1-1)
153-154-155. Clinical Operative Dentistry. (2-2-2)
175-176-177. Advanced Operative Dentistry. (1-1-1)
178-179-180. Clinical Operative Dentistry. (2-2-2)

Oral Diagnosis and Treatment Planning

Professor Virgil D. Cheyne

126. Dental Radiography. (1)
153-154-155. Clinical Oral Diagnosis and Treatment Planning. (1-1-1)
156. Oral Diagnosis and Treatment Planning. (1)
175-176-177. Advanced Oral Diagnosis and Treatment Planning. (1-1-1)
178-179-180. Advanced Clinical Oral Diagnosis and Treatment Planning. (1-1-1)

Oral Surgery

Professor Wanamaker; Clinical Professor Molt; Clinical Instructors Dore and Francis

150-151. Exodontia. (1-1)
153-154-155. Clinical Exodontia. (1-1-1)
156-157. Anesthesia. (1-1)
175-176-177. Oral Surgery. (1-1-1)
178-179-180. Oral Surgery. (1-1-1)

Orthodontics

Associate Professor Moore; Instructor Riedel

150. Orthodontics. (1)
153. Orthodontic Technic. (2)
175-176. Advanced Orthodontics. (1-1)

Courses for Graduates Only

200. Applied Osteology and Myology of the Head and Neck. (2)
201. Roentgenographic Cephalometry. (2)
202, 203. Growth and Development. (2, 2)
204, 205, 206, 207, 208. Orthodontic Seminar. (2, 2, 2, 2, 2)
209, 210, 211, 212, 213. Clinical Orthodontics. (4, 5, 5, 5, 5)

Pedodontics

Professor Brauer; Associate Professor Law; Clinical Instructors Bowler, Coleman, Faulkner, Fleege, Meyer, Phair

101. Public Health Dentistry. (1)
125. Pedodontic Technic. (2)
126, 127, 128. Preventive Dentistry. (1, 1, 1)
150-151. Pedodontics. (1-1)
153-154-155. Clinical Pedodontics. (1-1-1)
175. Pedodontics and Public Health Dentistry. (1)
178-179-180. Advanced Clinical Pedodontics. (1-1-1)

Courses for Graduates Only

200. Public Health Dentistry. (1)
201. Physical Growth of the Well Child. (2)
202. Applied Dental Nutrition. (1)
203, 204, 205, 206, 207. Pedodontics Seminar. (2, 2, 2, 2, 2)
208, 209, 210, 211, 212. Clinical Pedodontics. (2, 5, 5, 5, 5)
213. Dental Caries Control. (1)
214. Psychological Development of the Child. (2)

Prosthodontics

Professor Young; Instructor Hall; Senior Consultant Stansbery; Clinical Instructors Anderson, Riley

101-102. Elementary Prosthetic Dentistry Technic. (4-2)

128. Partial Denture Technic. (4)

150-151-152. Complete Denture Prosthesis. (1-1-1)

153-154. Partial Denture Prosthesis. (1-1)

156-157-158. Clinical Denture Prosthesis. (2-2-2)

175-176. Advanced Complete Denture Prosthesis. (1-1)

178. Advanced Partial Denture Prosthesis. (1)

181-182-183. Advanced Clinical Denture Prosthesis. (2-2-2)

DRAMA

Professor Hughes; Associate Professors Conway, Harrington; Instructors Gray, Carr, Davis, Haaga, Lounsbury; Associates Johnson, Prins, White; Theatre Assistants Bell, Rotter, Valentinetti, Smith

1, 2, 3. Introduction to the Theatre. (2, 2, 2) Significant aspects of the modern theatre. Hughes

46, 47, 48. Theatre Speech. (3, 3, 3) Pr., 46 for 47; 47 for 48. Gray, Carr, White

51, 52, 53. Acting. (3, 3, 3) Theory and practice. Includes pantomime, improvisation, and characterization. Pr., 46, 47, 48 for 51; 51 for 52; 52 for 53. Harrington in charge

103. Scene Construction. (3) Principles and actual construction of stage scenery and properties. Lounsbury, Johnson

104. Scene Design. (3) Pr., 103. Conway

105. Theatrical Costume Design and Construction. (3) Rotter, Smith

106. Make-up. (3) Conway

107, 108, 109. Puppetry. (2, 2, 2) Design, construction, costuming, stringing, and manipulation of puppets. With permission of department, this course may be repeated for credit. Valentinetti

111, 112, 113. Playwriting. (3, 3, 3) Professional course. Pr., one quarter of English 74, 75, 76, and permission. Hughes

114. Stage Lighting. (3) Survey course, nontechnical in character. Conway, Johnson

115. Advanced Stage Lighting. (3)

117, 118, 119. Advanced Theatre Workshop. (2, 2, 2) Pr., one of: 103, 104, 105, or 114 or permission.

121, 122, 123. Advanced Acting. (3, 3, 3) Group acting. Styles in acting: tragedy, comedy; period, modern. Pr., 51, 52, 53. Harrington

126. High School Play Production. (3) A methods course. Play selection, casting, rehearsal technique, problems of staging. Lectures, reading, and demonstrations. Not open to drama majors. Gray, Harrington

127, 128, 129. History of the Theatre. (2, 2, 2) The Orient, Europe, and America. The physical playhouse, methods of production, great actors, stage machinery, scenery, lighting, costumes, and masks. Conway

134, 135, 136. Children's Theatre. (3, 3, 3) Theory and methods. Participation in productions. Emphasis on directing. Pr., 53. Prins

137, 138, 139. Creative Dramatics With Children. (3, 3, 3) Practical training for those who work with children's groups. Emphasizes development of the whole child, intellectually, emotionally, physically and socially, through story and impromptu dramatizations. Lectures, reading, and laboratory. Field observation. Haaga

141, 142, 143. Radio Acting and Production. (2, 2, 2) Pr., two quarters of acting. Bell

144, 145, 146. Radio Writing. (3, 3, 3) Pr., two quarters of advanced English composition or one quarter of playwriting. Bell

151, 152, 153. Representative Plays. (3, 3, 3) Great playwrights of all important periods. Theories of the drama. Hughes

181, 182, 183. Directing. (3, 3, 3) Pr., 51, 52, 53, 121, 122. Harrington

197. Theatre Organization and Management. (2) Theatre personnel, box-office methods, advertising, production costs, royalties, executive policies. Pr., senior or graduate standing. Hughes

199. Projects in Drama. (1 to 5) Pr., permission. Staff

Courses for Graduates Only

301, 302, 303. Research. (5, 5, 5) Pr., permission. Hughes

For other courses in Drama, see English 154, 170, 171, 172, 217, 218, 219.

ECONOMICS

Professors Hall, Hopkins, Mund; Professor Emeritus Skinner; Associate Professors Hald, Huber; Assistant Professors Buechel, Cartwright, Crutchfield, Gillingham, Glickfeld, Matby, McCaffree, Pettibone, Sheldon, Williams, Worcester, Visiting Lecturer Danks*

*On sabbatical 1949-1950.

Lower-Division Courses

10. **Introduction to Economics.** (5) A study of the organization of the American economy and the way it operates. Economic principles of prices, costs, output, income and its distribution. Contemporary economic problems of money, banking, labor, and international trade. Proposals for promoting social welfare. Open to freshmen. Prerequisite to all upper-division economics courses. No credit to students who have had E.B. 1 or 4.
Buechel, Crutchfield, Glickfeld, Worcester

16. **Development of Economic Institutions.** (5) The European background and American development of the principal institutions of modern society. No credit to students who have had E.B. 6.
Williams

66. **General Economics.** (3) Condensation of Econ. 10; primarily for students in Colleges of Engineering and Forestry. Open to other students by permission. Pr., sophomore standing.
Staff

70. **Current Economic Problems.** (5) An application of Economic Principles. Analysis of the nature, significance, and solutions of major economic problems, including employment, prosperity-depression cycles, pressure groups, international economic policies, etc. Pr., Econ. 10.
Buechel, Glickfeld

Upper-Division Courses

I. Economic Theory

100. **Intermediate Economics.** (5) A study of the fundamental concepts and principles of economics. Markets, market price, and the determination of price under monopolistic conditions. The relations of prices and cost, income and its functional distribution in capitalistic society. Pr., Econ. 10, or E.B. 1 or 4. No credit to students who have had E.B. 185.
Danks, Mund, Worcester

102. **National Income Analysis.** (5) Analysis of the determinants of the aggregate level of employment, output, and income of an economy. Pr., Econ. 100, or E.B. 2. Cartwright

103. **Economics of the Individual Firm.** (5) Analysis of the price and output behavior of the individual business firm, the allocation of resources under conditions of pure competition, imperfect competition, monopoly, and oligopoly. Pr., Econ. 100, or E.B. 2. Worcester

104. **Institutional Economics.** (5) The economy theory of the "institutionalists." Special attention to the points of contrast between institutional theory and marginal theory. Pr., Econ. 100, or E.B. 2.
Williams

105. **Economics of Consumption.** (5) The effect of consumer action on production, distribution, and size of the national income in the American economy. National and state legislation affecting consumers. Consumer aids with some emphasis on cooperatives. Pr., Econ 100, or E.B. 2. Not open to students who have had E.B. 163.
Worcester

106. **History of Economic Thought Through the Classicists.** (5) Consideration is given to Medieval economic thought, the Mercantilists, the Physiocrats, Adam Smith, and Ricardo. No credit to students who have had E.B. 187. Pr., Econ. 100, or E.B. 2.
Williams

107. **History of Economic Thought Since the Classicists.** (5) A survey of the critics of the classical schools, including the Marxian, Austrian, neo-classical, and American Schools. No credit to students who have had E.B. 187. Pr., Econ 100, or E.B. 2.
Williams

II. Money, Banking, and Cycles

120. **Money and Banking.** (5) Nature and functions of money; the banking system, other credit granting institutions, and the relationship of money and bank deposits to the economy. Pr., Econ. 10, or E.B. 1 or 4. Econ 120 and B.A. 120 are interchangeable and either may be offered to meet Econ. or B.A. requirements. No credit to students who have had E.B. 103 or B.A. 120.
Crutchfield, Hald, Pettibone

121. **Money, Credit, and the Economy.** (5) Supply and use of money, bank deposits, and bank reserves. Relationship of Treasury, Federal Reserve, and commercial bank policies, and the value of money. Factors relating to the generation of money income flows. Pr., Econ. 100 (or E.B. 2) and Econ. 120. No credit to students who have had E.B. 125. Crutchfield

122. **Economic Cycles.** (5) A study of the characteristics of prosperity-depression cycles. Analysis of leading cycle explanations and proposed cycle remedies; discussion of current problems. Pr., Econ. 120. No credit to students who have had E.B. 175. Econ. 122 and B.A. 175 are interchangeable and either may be offered to meet economics or business administration requirements.
Hald

123. **Monetary, Banking, and Cycles Policies.** (5) A critical review of past and current proposals to stabilize the value of the dollar and mitigate economic fluctuations. Pr., Econ. 100 (or E.B. 2) and 121 or 122.
Hald

III. Government Regulation, Public Utilities, and Transportation

130. **Government Control of Competitive Enterprise.** (5) The development of public policy in the United States on the regulation of business activity. Federal anti-trust legislation and its judicial interpretation. Basing point and zone delivered pricing systems. The policy of preserving competition as a means of regulating private business. Pr., Econ. 10, or E.B. 1 or 4.
Mund

132. **Economics of Public Utilities I.** (5) Economic, legislative, and administrative problems in

the regulation of public utility rates and service standards. The holding company and its control. Pr., Econ. 10, or E.B. 1 or 4. No credit to students who have had E.B. 141.
Hall, Pettibone

133. Economics of Public Utilities II. (5) Study of public utility costs, pricing policies, rates, plant utilization, and competition. Pr., Econ. 132. No credit to students who have had E.B. 142. Hall

134. Economics of Transportation I. (5) Domestic and international transport: economic principles and development; public policy and special problems. Pr., Econ. 10, or E.B. 1 or 4. No credit to students who have had E.B. 104. Pettibone, Sheldon

135. Economics of Transportation II. (5) Advanced treatment of economic problems and trends in domestic and international transport, including effects on regional development. Pr., Econ. 134. Pettibone, Sheldon

IV. Labor Economics

140. Labor in the Economy. (5) Employment, unemployment, wages, working conditions, trade unionism, collective bargaining, labor-management relations, and public policy. Pr., Econ. 10, or E.B. 1 or 4. No credit to students who have had E.B. 105.
Buechel, Glickfeld, McCaffree, Lampman

141. Union-Management Relations. (5) Negotiation and administration of the collective bargaining agreement; industrial jurisprudence, union and management attitudes. Pr., Econ. 140. No credit to students who have had E.B. 164. Gillingham, Hopkins

143. American Labor History. (5) Analysis in historical perspective of American labor movement; its organizational structure, ideology, policies, and practices. Pr., Econ. 140. No credit to students who have had E.B. 162. Gillingham

144. Advanced Labor Economics. (5) Economic analysis of the factors determining wage rates and employment levels. Will examine ability-to-pay, cost-of-living, productivity, and the labor market. Pr., Econ. 100 (or E.B. 2) and Econ. 140. No credit to students who have had E.B. 164. McCaffree

145. Social Security. (5) Unemployment compensation, old age benefits, public insurance, relief. Pr., Econ. 140. Lampman

146. Labor Problems Abroad. (5) History and analysis of labor problems in foreign countries. Pr., Econ 140. Glickfeld

V. Public Finance and Taxation

150. Public Finance and Taxation I. (5) Principles of taxation, tax forms and practices, public expenditures, public credit, and public budgetary policy. Pr., Econ. 10 (or E.B. 1 or 4). No credit to students who have had E.B. 171. Hall, Lampman

151. Public Finance and Taxation II. (5) Study of the elements of fiscal policy; tax systems; incidence and effects of taxation; and management of the public credit. Pr., Econ. 100 (or E.B. 2) and 150. No credit to students who have had E.B. 172. Hall, Lampman

153. Introduction to Public Finance. (3) A survey of public finance and taxation designed especially for journalism majors. Pr., Econ. 10, or E.B. 1 or 4. Hall, Lampman

VI. Economic History

160. American Economic History to 1860. (5) Analysis of the origins and significance of the American economic structure before the Civil War. Pr., Econ. 10, or E.B. 1 or 4. No credit to students who have had E.B. 181. Williams

161. American Economic History Since 1860. (5) Structural changes and trends in the American economy since the Civil War. Pr., Econ 10, or E.B. 1 or 4. No credit to students who have had E.B. 181. Williams

162. Economic History of Europe. (5) Origins of contemporary European economic institutions; emergence of capitalistic system; problems of 19th century European economic organization; international conflict and the growth of new systems and patterns of European economic organization. Pr., Econ. 10. Glickfeld

VII. International Trade

170. Economic Principles of Foreign Trade. (5) Role of trade in world economic development, incomes, and employment. Relationship between production and trade; problems of foreign exchange. Commercial policies of nations; organizations for international cooperation. Pr., Econ. 10, or E. B. 1 or 4. No credit to students who have had E.B. 107. Mathy

171. International Economic Policies. (5) Foreign trade controls, including tariffs, exchange controls, state trading, commodity agreements, cartels. Foreign investment policies; international organizations. Pr., Econ. 100, or E.B. 2, and 170. No credit to students who have had E.B. 131. Huber

172. International Monetary Standards. (5) Exchange rates and international payments; monetary standards and international monetary cooperation. International Monetary Fund, and the World Bank. Pr., Econ. 120 and 170. No credit to students who have had E.B. 127. Huber

173. Foreign Trade of Latin America. (5) Problems of foreign trade, foreign exchange, and investments; programs for industrial development; role in the world economy. Pr., Econ. 170. No credit to students who have had E.B. 130. Mathy

VIII. Economic Statistics and Mathematical Economics

(No courses at present.)

IX. National Economies

190. Comparative Economic Systems. (5) The American, British, Scandinavian, and Russian economies in practice. How these economic systems deal with the basic economic problems facing all societies. Pr., Econ. 10, or E.B. 1 or 4, and 15 additional credits in social sciences. No credit to students who have had E.B. 188. Worcester

192, 193. Economic Problems of the Far East. (5, 5) Reconstruction problems, industrialization, commercial policies, exchange and finance, transportation, agriculture, and labor. National incomes and distribution; government and economic planning. Pr., Econ. 10, or E.B. 1 or 4, or permission; 15 additional credits in social sciences or Far Eastern. Econ. 192 deals with Far Eastern countries exclusive of China. No credit to students who have had E.B. 182. Econ. 193 deals with China. No credit to students who have had E.B. 183. Either course may be taken independently. Sheldon, Wu

Independent Study

199. Independent Study. (3; may be repeated once for credit) This work is available to seniors in the various specialized fields of economics. Pr., permission of the faculty adviser in the specialized field. Staff

Graduate Courses

I. Economic Theory

200. Survey of Economic Theory. (5) Systematic review of the theories of value, price, costs, and supply. The capital concept. Income and its functional distribution. Pr., Econ. 102. No credit to students who have had E.B. 208A. Mund

201. Theory of Income and Employment. (5) Analysis of the theory of employment, output, and income of the Keynesian and Neo-Keynesian groups. Pr., Econ. 102. Cartwright

202. Value Theory. (5) A critical analysis of contemporary theory of demand, of cost, and of pricing under pure competition. Pr., Econ. 100, 102. Worcester

203. Value Theory. (5) A critical analysis of contemporary theory of pricing under imperfect competition, oligopoly, monopoly and price discrimination. Pr., Econ. 100, 102. Worcester

204. Distribution Theory. (5) A review of current developments in the theories of wages, rent, profits, and capital and interest. Pr., permission. Cartwright

206. History of Economic Doctrine. (5) A critical analysis of the thought of selected economists from early times to the present. Pr., permission. Mund, Williams

II. Money, Banking, and Cycles

220. Monetary Theory. (5) A critical analysis of recent developments in money theory. Pr., permission. Crutchfield

221. Cycle Theory. (5) A review of leading theories of economic cycles, with emphasis upon recent developments. Pr., permission. Hald

III. Government Regulation, Public Utilities, and Transportation

230. Public Control of Industry. (5) Public policy in the United States on industrial combinations, pricing practices, and monopoly control. Recent issues in the public control of business. Pr., Econ. 130, and 100 or E.B. 2. Mund

232. Public Utilities. (5) A critical consideration of recent developments in the study of public utilities. Special emphasis on electrical utilities and public power projects of the federal and local governments. Pr., permission. Hall

IV. Labor Economics

241. Labor Relations. (5) Pr., permission. Gillingham

242. Labor Economics. (5) Pr., permission. Hopkins

V. Public Finance and Taxation

250. Public Finance. (5) Study of the implemental aspects of fiscal policy as to income and employment; limitations of fiscal policy; review of current literature. Pr., permission. Hall

VI. Economic History

(No courses at present.)

VII. International Trade

270. International Trade Theory. (5) Theories of international trade, prices, and payments. Modern developments in theory of national income and international trade. Theory of international capital movements. Pr., permission. Huber

271. International Economic Policies. (5) Problems of foreign trade and exchange controls, and international monetary policies. Pr., permission. Mathy

VIII. Economic Statistics

(No courses at present.)

IX. Mathematical Economics

(No courses at present.)

300. Research. (*) Directed research in any of the fields of Economics. Pr., permission. Staff

EDUCATION

Professors Powers, Bolton, Cole, Corbally, Draper, Dvorak, Osburn, Stevens, Strayer, Williams; Associate Professors Jessup, Hayden; Assistant Professor Barr; Instructors Batie, Boroughs

An all-University grade-point average of at least 2.2 is prerequisite to and required in all Education courses leading to the Three-Year Certificate granted by the University of Washington.

Orientation Course: Lower-Division Credit

1. Education Orientation. (2) Required of all undergraduates planning to secure the Three-Year Certificate and the Three-Year Elementary Certificate. A survey of teaching as a profession, the opportunities for service in the teaching field, and the control, support, administration, and nature of the American School System.

Beginning Courses: Upper-Division Credit

9. Psychology of Education. (3) Psychological basis of education. Review of recent experimentation with applications. For students who wish to review educational psychology for advanced degree examinations as well as for beginners. Pr., 1, Psych. 1. Powers, Batie

30. Washington State Manual. (2) For out-of-state applicants for teaching certificates from the State Department of Education and applicants for the University Three-Year Certificate. Corbally

60. Principles of Education. (3) Students will work as individuals and as groups in studying and analyzing problems in the areas of: professionalization of teachers, foreign education programs, guidance and counseling, vocational education, extra-curricular activities, and curriculum improvement. Pr., 1, 9, 70, 71-72, 75, 90. Draper

70. Introduction to School Procedures. (5) Pr., 1, 9. The principles and techniques of methods of teaching including problem-project, unit, socialized recitation, supervised study, the lesson plan, assignment, questioning, appreciation, audio-visual aids, the observation of teaching. Williams, Boroughs

71-72. Cadet Teaching. (5-3) Pr., 1, 9, 70, 75, 90, or approved equivalent, and all-University grade point of at least 2.2. Work is done in the public schools. A student must leave sufficient time free in either the morning or early afternoon so he can be assigned to two consecutive classes in the school. This means he may take an 8 or 11 o'clock class on campus in the morning if he does cadet teaching in the morning, or any morning class on campus if he does cadet teaching in the afternoon. Assignments are made in the office of the Director of Cadet Teaching the first day of each quarter. A fee of one dollar per credit is charged for the course. Corbally, Powers

71N-72N. Cadet Teaching for Vocational Home Economics Majors Only. (5-3) Pr., as for 71-72. Education 30 must be taken the quarter immediately preceding or following 71N-72N. Work is done in selected vocational home economics departments near Seattle. The student's entire time for a period of five weeks is devoted to cadet teaching. Home Economics 148 and 195 are arranged in a block with 71N-72N to give a full schedule for the quarter. A fee of one dollar per credit is charged for the course. Corbally

71P-72P. Cadet Teaching for Women Physical and Health Education Majors. (5-3) Pr., as for 71-72. Education 30 must be taken prior to 71P-72P. A fee of one dollar per credit is charged for the course. Corbally

71U-72U. Cadet Teaching for Men Physical and Health Education Majors. (5-3) Pr., as for 71-72. Education 30 must be taken prior to 71U-72U. A fee of one dollar per credit is charged for the course. Corbally

90. Measurement in Education. (2) Pr., 1, 9, 70. A study of measurement in today's schools; the construction of achievement tests; the principles and applications of tests and standardized tests and scales in classroom management, educational diagnosis and remedial education. Dvorak

Intermediate Courses: Upper-Division and Graduate Credit

101. Educational Psychology. (3) Theoretical principles and experimental backgrounds. Powers, Barr

103. Psychology of Elementary School Subjects. (5) A practical general course on the psychological principles involved in teaching the several elementary school subjects. Special attention will be given to reading and arithmetic. Osburn

104. Psychology and Training of Exceptional Children. (5) Atypical children studied from the point of view of the classroom teacher.

105G. Mental Hygiene for Teachers and Administrators. (3) A study of the mental hygiene of school children, teachers, and administrators, including genetic factors and the influence of various school situations upon the formation of adjustment patterns. Special problems of teachers and administrators will be emphasized.

106. Character Education. (3) Experimental background of the modern effort toward character development. Powers, Barr

110. Educational Sociology. (3) A systematic view of the larger social factors and relationships underlying the school as an institution. Pivotal topics are: individual-group interaction; agencies of person-group interaction; and outcomes of individual-group interaction. Special emphasis is given to the relationship of the school to the community. Jessup

115B. Principles of Safety Education. (3) Consideration of the development, principles and practical methods of implementing a school program of safety education.

117. **Adult Education.** (3) The purpose of this course is to present principles and methods and to offer suggestions for directing the continued educational growth for those whose intellectual curiosity, ambition, and desire for greater social service prompts them to seek ways and means for self-improvement. Jessup

121. **Remedial Teaching.** (5) Theoretical principles and practical classroom applications. Osburn

130. **Public School Administration.** (3) Selection, organization, and functions of school boards; relation of the superintendent to the board, principals, supervisors, and teachers; selection of personnel; interpretation of school programs; fomation of policies; administration of the instructional program; finance and business management; appraisal of the school system; leadership in community life. Strayer

131. **School Finance.** (3) Basic course. Strayer

134. **High School Organization and Administration.** (3) General Plans for secondary school organization and administration; types of junior and senior high schools; advantages and disadvantages of 8-4, 6-3-3, 6-6, 7-5, 6-4-4 plans; program making; pupil adjustment; principal and department heads; extension of the programs to include the 13th and 14th years. Cole

137. **School Supervision.** (5) Analysis of the problems and techniques of the improvement of schoolwork. Special emphasis is given to facilitating pupil growth, facilitating teacher growth, improving curriculum and the use of teaching aids to greatest advantage. Jessup

138. **Supervision of Elementary School Subjects.** (5) Deals with the improvement of instruction in the elementary field. Planning the program, determining the objectives, appraising the product, studying the pupil and the teacher, improving the use of materials of instruction, creating a better teaching environment, and facilitating growth of pupils through better teaching in all subjects. Jessup

145V. **Principles and Objectives of Vocational Education.** (3) Aims and objectives of vocational education; materials of instruction; standards of work; judging measurement of work.

147. **Principles of Guidance.** (3) An introduction to guidance. Role of guidance in present-day education, tools and techniques, organization and evaluation. For teachers and administrators.

148. **Improvement of Guidance Techniques.** (3) Designed for teachers, administrators, and counselors, with special emphasis on the improvement of existing methods and techniques. Purposes and program of guidance; its organization and administration. Techniques of counseling, including interviewing, case study, clinical analysis, and measurement.

161. **Elementary School Curriculum.** (5) A study of the child as a growing organism, developing personality, and as a learner. Describes the curriculum as the guiding life of the school. Discusses the developments of units, utilization of materials of instruction, social experiences, creative experiences, and evaluation of curriculum material. Jessup

162. **Junior High School.** (3) Historical development as a basis for the discussion of its important features, functions, and problems. Guidance, methods, curricula, supervision, and extraclass activities.

164. **Principles of Curriculum Improvement.** (3) An intensive study of the basic principles and procedures utilized in the development of curriculum materials. Current practices in the development of objectives and learning experiences in the public schools will be studied and evaluated. Individual projects. Draper

167. **Techniques of Curriculum Improvement.** (3) Draper

168. **Extra-Curricular Activities.** (3) Students will work on individual problems in the area of extra-curricular activities. Emphasis will be given to the problem of evaluating pupil growth through participation in the extra-curricular activities. Draper

170. **Historical Backgrounds of Educational Methods.** (3) Readings from the educational classics from the Greeks to the present for the purpose of tracing their influence upon the development of educational theory and practice. Principal sources are Plato, Aristotle, Quintilian, Plutarch, Comenius, Vives, Montaigne, Locke, Milton, Rousseau, Pestalozzi, Herbart, Froebel, and Spencer. Williams

175A. **Auditory and Visual Aids in Teaching.** (3) A study of the utilization of audio-visual equipment and materials for the improvement of instruction. Hayden

177. **Teaching of Reading.** (3) Deals with the teaching of reading, stressing readiness, phonics, comprehension, speed, and reading in the content fields; motivation of leisure time reading including evaluation and selection of materials; study in areas of individual interest will be encouraged.

180. **History of Education.** (5) A social interpretation of the historic beginnings of education. Preliterate education, beginnings in Orient, Greece, Rome, Medieval period, Renaissance and modern times. Shows the relationship of education to democracy, fascism, communism, and the newer concepts involving the world-wide spread of democracy and education. Jessup

184. **Comparative Education.** (5) Deals with the school systems of England, Germany, France, Italy, and Russia. An interpretation in terms of the political philosophy of each country. Emerges with an indication of world trends in education. Jessup

190. **Educational Statistics.** (5) Statistical methods applicable in educational administration and research; central tendency; variability; probability; sampling and reliability; experimental hypotheses; linear, curvilinear, bi-serial, partial anl multiple correlation; regression; reliability; application of various statistical procedures to specific problems. Pr., 90. Dvorak

191. **Advanced Educational Measurements.** (3) Pr., 90 and 190, or Psych. 108, or equivalent. The construction, scaling, evaluation and limitations of educational tests and scales; the application of test and scale results in educational diagnosis, guidance, and administration. Dvorak

199. **Individual Undergraduate Research.** (2 to 5 ea. qtr.) Pr., consent of instructor. Indicate instructor and field. See 300. Staff

Advanced Courses: Open to Graduates Only

201. **Advanced Educational Psychology.** (3) Pr., courses in general and educational psychology. Psychological principles of education. Summary of research results in application to school problems. **Powers, Barr**

210. **Seminar in Educational Sociology.** (3) Application of sociological principles to school problems. Individual problems and investigations. For teachers, administrators, and those using educational sociology as a field for advanced degrees. **Jessup**

222. **Seminar in Diagnostic and Remedial Work in Education.** (5) **Osburn**

235, 236, 237. **Organization of Supervisory and Administrative Programs.** (5, 5, 5) General problems of school administration; types of school organizations; opportunities for the extension of the secondary school offerings beyond the twelfth year; supervision of instruction and plans for professional improvement of the staff; pupil adjustment and suggestive subject programs. **Cole**

241, 242, 243. **Individual Guidance and Counseling.** (3, 3, 3) Emphasis will be placed on the counseling aspects of guidance, particularly from the point of view of the classroom teacher. Pr., 147 or equivalent. **Barr**

252. **Improvement of College Teaching.** (3) An analysis of types of teaching applicable to the college level with special reference to the lecture, assignment, use of the textbook, student's reports, quiz techniques, panel discussion, the use of visual aids, syllabi, and bibliographies. **Williams, Wilson**

260, 261. **Seminar in Secondary Education and Curriculum.** (3, 3) Students will do research in the areas of guidance, extra-curricular activities, and curriculum. The core curriculum and general education will receive emphasis. **Draper**

270, 271. **Problems in Modern Methods.** (3, 3) A consideration of the nature of teaching and the problems involved in the underlying principles and practices of types of modern methodology with special reference to the experimental studies in the project, unit, socialized recitation, audio-visual aids, supervised study, lesson plans, the lecture, assignment, and the activity movement. **Williams**

287, 288, 289. **Seminar in Philosophy of Education.** (3, 3, 3) The nature and meaning of philosophy as it bears upon education in respect to educational objectives, methodology, curriculum, administration, from the points of view represented in idealism, realism, naturalism, and pragmatism. **Williams**

291. **Methods of Educational Research.** (3) Required of advanced degree candidates. A study of practices and methods in conducting research. Designed to assist students in planning, organizing, and writing theses. **Hayden**

300. **Graduate Research.** (*) Pr., 291 and consent. Indicate field by letter and instructor when registering. **Staff**

A. Educational psychology
B. Educational sociology
C. Educational administration and supervision
D. Elementary education
E. Secondary education
F. Classroom techniques
G. History and philosophy of education and comparative education
H. College problems
I. Curriculum
J. Guidance and extracurricular activities
K. Remedial and special education
L. Measurements

THESIS. (*) Advanced degree candidates in Education working on theses must be registered for "thesis" unless specially exempted by the Dean of the College of Education. This registration should be for the period during which the thesis is being prepared under the direction of major professor. The normal allowance for a master's thesis is 6 credits, and for a doctor's thesis, 30 credits. When registration is for "thesis only," an incidental fee of $12.50 is charged and the work, if desired, may be done *in absentia*. **Staff**

Special Methods Courses in Secondary Subjects

75A. **Art.** (2) Pr., 1, 9, 70, senior standing; permission. Methods of teaching art in the secondary school. **Johnson**

75B. **Botany.** (2) Pr., 1, 9, 70, and 25 hours of Botany. **Blaser**

75C. **Chemistry.** (2) Pr., 1, 9, 70, and at least 20 credits of college chemistry of average "B" grade. **Cady**

75D. **Civics.** (2) Pr., 1, 9, 70. **von Brevern**

75E. **Business Education: Bookkeeping and General Business.** (5) Two credits count as education, three credits as business administration. Pr., 1, 9, 70, and 30 credits for a major in business education, including 10 credits in accounting. **Staff**

75F. **Business Education: Typewriting, Shorthand, Transcription, and Business Communications.** (5) Two credits count as education, three credits as business administration. Pr., 1, 9, 70, and B.A. 16, 17, 18, and permission. **Tidwell**

75G. **Journalism.** (3) Pr. 1, 9, 70; Journ. 51, 84. For teachers in high schools and junior colleges; editorial, advertising, circulation, and mechanical production of school publications. (No credit to those taking Journ. 125) **Brier**

75H. **English.** (5) Two credits count as education and three as English. Pr., 1, 9, 70. **Emery**

75K. **French.** (2) Pr., 1, 9, 70; French 103 and 158, or concurrently. Examination and critical consideration of aims, problems, methods, and modern techniques and devices for teaching French. **Simpson**

75L. **German.** (2) Pr., 1, 9, 70; German 119 or permission.

75M. **History.** (5) Pr., 1, 9, 70. Special reference to work of high school; 2 credits count as education and 3 as history.

75NA. Home Economics. (3) Two credits count as education and one as home economics. Vocational homemaking in Washington high schools, objectives, curricula, and teaching methods. Pr., 1, 9, 70; 25 credits in home economics. McAdams

75NB. Methods of Teaching for Institution Administration Students. (5) Planning and organizing courses and procedures for teaching foods and nutrition; for nurses, interns, patients and employees of hospitals or other institutions. Pr., junior standing, 25 credits in home economics. McAdams

75O. Geography. (2) Pr., 1, 9, 70; permission. Tennant

75P. Latin. (2) Pr., 1, 9, 70; Latin 100 or equivalent.

75Q. Mathematics. (3) Pr., 1, 9, 70; Math. 109 or equivalent. Two credits count as education, one as mathematics. Emphasis upon a more critical understanding of subject-matter relationship of 9th-grade algebra with 7th-grade arithmetic. Jerbert

75R. Senior High School Music. (2) Pr., 1, 9, 70; Music 126, 136. Music in the high school, with particular attention to instructional materials. Techniques for the small high school. *

75T. Far East. (2) Consideration of instruction about the Far East needed in the preparation of responsible American citizens; its place in the school curriculum; useful publications, audio-visual aids, other materials and special methods. Ewing

75U. Physical Education for Men. (2) Pr., 1, 9, 70; P.E. 158, 161, 163. Reeves

75V. Health and Physical Education for Women. (2) Pr., 1, 9, 70; P.E. 153, 156, 162, 163, 164; current registration in Educ. 71P-72P. Fox

75X. Speech. (3) Two credits count as education, one as speech. Pr., 1, 9, 70 and at least 20 hours of speech including Speech 50, or equivalent. Nelson

75Y. Spanish. (2) Pr., 1, 9, 70; Spanish 103 and 158, or concurrently. Examination and critical consideration of aims, problems, methods and modern techniques and devices for teaching Spanish. Simpson

75Z. Zoology. (2) Pr., 1, 9, 70; 20 credits in zoology. Hatch

Regular courses offered in summer school—
Not offered during regular year 1949-50

133. Elementary School Organization and Administration. (2½)

166. Workshop in Curriculum Improvement. (5)

Business Education

176A. Principles and Problems of Business Education. (3) Aims and objectives, history, trends, and issues of business education. Federal participation in vocational education; economic, occupational, and population trends and their implications; leaders in the field; research and problems.

176B. Materials and Methods of Teaching Bookkeeping and General Business Subjects. (3) A study of techniques involved in teaching bookkeeping and general business subjects, the relationship to the curriculum, the standards to be achieved, the content and organization of the subject matter, tests and teaching materials, the trends now apparent in the field, motivational devices, and visual aids.

176C. Field Work in Business Education: Research and Practice in Business and Industry. (4) Internship in business and industry for experienced Business Education teachers. A course which combines work experience, job analysis, and research with specific curriculum building programs. Limited enrollment. Pr., consent of instructor.

176D. Materials and Methods of Teaching Typewriting. (3) A study of the psychological and physiological factors in the methodology of typewriting; objectives and evaluations; and procedures for developing advanced and applied skills.

176E. Materials and Methods of Teaching Office and Clerical Practice. (3) Objectives and content of office practice and general clerical practice courses. Various plans of organizing classes and methods of teaching specific machines and subject matter. The laboratory hours provide opportunity to become acquainted with new inventions in office machines.

176F. Materials and Methods of Teaching Thomas Shorthand. (3) An accelerated course for experienced teachers. Complete theory of Thomas shorthand; teaching objectives, materials, standards, methods; and the psychology of skill learning.

176G. Materials and Methods of Teaching Gregg Shorthand and Transcription. (3) An advanced course for experienced teachers with emphasis on recent research and experimentation in teaching shorthand and trasncription; the psychology of skill development; comparison of the various methods of teaching shorthand; evaluation of teaching materials; consideration of standards, objectives, and teaching techniques.

176H. Workshop in Current Problems of Distributive Education. (2½ to 5) Immediate problems in the field of distributive education; student employment, local, state, and national retailers' clubs, trends in adult training, and special problems of the new coordinator. Recommended for present and prospective coordinators.

176I Problems of Distributive Education. (2½) For distributive education supervisors and teachers.

176K. Coordination of Distributive Education and Diversified Occupational Programs. (2½) For distributive education supervisors and teachers.

247. Seminar in Guidance. (5)

ENGINEERING

1. AERONAUTICAL ENGINEERING

Professors F. S. Eastman, Kirsten; Associate Professors, H. C. Martin, R. M. Rosenberg, R. E. Street; Assistant Professors R. C. Weikel, Dwinnell, Ganzer; Instructor R. G. Joppa

Permission must be obtained from the executive officer before registering for courses in aeronautical engineering.

81. Introduction to Aeronautics. (2) History, opportunities, specialization, sources of information, nomenclature. Pr., sophomore standing.

100. Aircraft Engines. (3) Operating characteristics of conventional engines at altitude. Different types are considered, including jet engines. Pr., Phys. 99, M.E. 183.

101. Aerodynamics. (3) Fundamental fluid relations and their application to aerodynamics. Pr., C.E. 142, Math. 43, Physics 97, 98, 99.

102. Aerodynamics. (3) Wing section and planform characteristics; parasitic drag. Pr., 101.

103. Airplane Performance. (3) Basic performance computations; rapid methods of estimation. Pr., 102.

104. Laboratory Methods. (3) Verification of fluid relations and study of properties of wind tunnels. Two lect.; one 3-hr. lab. Pr., 101.

105. Airfoil Test Laboratory. (2) Determination of airfoil characteristics by force and pressure measurement in two and three dimensional flow; boundary layer phenomena. One lect.; one 3-hr. lab. Pr., 102, 104.

106. Model Testing. (3) Typical model testing in the 12-foot tunnel. Reduction, correction, analysis, and application of data; scale effect. Lecture and computation period; one 3-hr. lab. Pr., 105.

107.* Advanced Wind Tunnel Testing. (2) One lecture; one combined laboratory and computation period. Pr., 105; special permission.

111. Airplane Design. (4) Aerodynamic design and layout; weight and balance; stability and control. Pr., 103.

112. Design Loads. (2) Determination of flight and landing loads; compressibility effects; military and commercial requirements. Pr., 103.

141. Aircraft Propulsion. (3) Screw-propeller theory, design, and performance calculation. Pr., 102, 171.

142. Advanced Aircraft Propulsion. (3) Pr., 141.

151. Selected Subjects in Aeronautical Design. (2) Lectures and typical problems will be presented by men with engineering experience in the aeronautical industry. Pr., permission.

161. Analytical Problems in Aeronautics. (3) An analytical approach to the solution of various engineering problems. Ordinary differential equations applied to aerodynamics, structures, dynamics. Pr., permission.

171, 172. Aircraft Structural Analysis. (4, 4) Design and allowable stresses for common aircraft parts subjected to simple and combined loadings. Pr., C.E. 93, M.E. 111, 167; 171 for 172.

174. Aircraft Monocoque Structures. (3) Stress analysis; shear center; stiffened sheet in compression; partially buckled shear webs; fitting design. Pr., 172.

175. Structure Test. (2) Experimental verification of theoretical work done in 174. To be taken with 174. One lect.; one 3-hr. lab.

185. Aeronautical Engineering Measurements (2) The use of standard and special measuring apparatus in aeronautical laboratories and in flight. Pr., senior standing.

188, 189, 190. Seminar. (0, 0, 1) Pr., senior standing.

199. Special Projects. (2 to 5 ea. qtr.) Pr., senior standing.

Courses for Graduates Only

201. Theoretical Aerodynamics I. (3) Theory of perfect fluids, potential theory, circulation and vorticity, conformal transformation, the airfoil in three dimensions.

202. Aerodynamics of Compressible Fluids I. (3) Basic thermodynamics, equations of motion of a compressible fluid, shock wave phenomena, subsonic compressible flows.

203. Stability and Control. (3) The general problem of dynamic stability. The influence of aerodynamic characteristics and of the change of aerodynamic parameters on longitudinal and lateral stability, and on stalling and spinning.

204. Aircraft Vibrations. (3) Short survey of elementary vibration theory. The vibrations of elastic bodies and of systems with many degrees of freedom with special applications to the airplane. The application of variational calculus to vibration theory.

205. Theoretical Aerodynamics II. (3) Theory of viscous fluids, Navier-Stokes equation, Conette and Poinsenille flows, laminar and turbulent boundary layers. Jets, wakes, flow in channels.

206*. Advanced Airplane Design. (3) Advanced application of theoretical and experimental results to the aerodynamic design of the aircraft.

207. Aerodynamics of Compressible Fluids II. (3) Hodographs and characteristics, supersonic flows, viscous effects.

208.* Internal Aerodynamics. (3) Flow of incompressible and compressible fluids confined by boundaries exterior to the fluids, cascades. Application to cowlings, centrifugal and axial compressors, and turbines.

* These courses may not be offered every year.

221.* **Elasticity in Aircraft.** (3) Application of the classical methods of elasticity to aeronautical structural problems. Original papers will be studied and will serve as reference material. Some of the important unsolved problems will be considered and their essential difficulties discussed. Pr., AE 224 or CE 221.

222.* **Elastic Stability.** (3) Investigation of instability occurring in airplane structural design. Particular emphasis on the calculation of critical loads for unstiffened and stiffened thin skin structures. Effects of combined loads will be considered. Pr., AE 224 or CE 221.

223.* **Aircraft Structural Design.** (3) Design of composite aircraft structures with particular reference to the optimum selection of stiffening sections, skin thickness, arrangement of parts, etc. Influence of yielding, stress concentrations, dynamic loading effects, and fatigue, will be taken into account. Pr., AE 224 or CE 221.

224, 225, 226. **Aircraft Structures.** (3, 3, 3) Development and discussion of the basic methods of analysis for solving structural problems. Application of the various methods of analysis to the major structural units of the airplane.

227.* **Experimental Stress Analysis.** (3) The application of experimental methods in investigating and testing structures. Emphasis will be placed on those techniques particularly useful for aircraft testing.

228.* **Theory of Plasticity.** (3) Fundamentals of loading structures beyond the Hooke's Law regime. Topics will include the conditions for yielding, deformations beyond the elastic limit, and the ultimate strength of aircraft structural components. Pr., 224 or CE 221.

241.* **Rotary Wing Aircraft.** (3) Flying characteristics; theoretical approach to lift and thrust obtainable; performance estimation.

242.* **Reaction Propulsion.** (3) Thermodynamic and aerodynamic principles of various jet and rocket configurations; application to design; duct design and installation.

244, 245. **Dynamics of the Airplane.** (3, 3) The dynamics of the rigid airplane. The general theory of particle motion in space and its application to problems of airplane flight paths and airplane stability. The dynamics of the airplane considered as a system of particles. Dynamics of airplane components, dynamic loads on airplane structural components, gyrostatic propeller vibrations, special problems.

246*. **Aero-Elasticity.** (3) The aerodynamics of the elastic airplane. Theory of flutter and divergence phenomena. The influence of elasticity on airplane performance.

247*. **Theory of Rocket Flight.** (3) The equations of motion of a rocket; motion after burning, boundary conditions; the rocket functions and their properties.

248*. **Servo-Mechanisms and Automatic Control in Aeronautics.** (3) The principles, theory, stability and application of servo-mechanisms in aircraft. The design of servo-mechanisms.

261, 262, 263. **Analysis in Aeronautics.** (3, 3, 3) Analytical processes for solving problems in the various fields of aeronautical engineering.

294-295-296. **Graduate Seminar.** (0-0-1)

299. **Special Projects.** (2 to 5 each quarter; maximum total 15)

300. **Graduate Research.** (2 to 5)

* These courses may not be offered every year.

II. CHEMICAL ENGINEERING

Professor Emeritus Benson; Associate Professors Moulton, McCarthy; Assistant Professors Gerald, West; Instructor Buck; Acting Instructor Fetterly; Associate Mulvany

51. **Industrial Chemical Calculations.** (2) Application of the laws of chemistry to the solution of problems dealing with gases and gas-vapor mixtures, from the viewpoint of the chemical engineer, technics of representation of chemical data. Two lectures. Pr., Chem. 23 or 26, Math. 33, or equivalents. Gerald

52. **Industrial Chemical Calculations.** (2) Material and energy balances of industrial processes for preparation and combustion of gaseous, liquid, and solid fuels. Two lectures. Pr., 51. Gerald

53. **Industrial Chemical Calculations.** (2) Material and energy balances of typical important chemical processes, crystallization, lime and cement manufacture, production of sulphuric acid and sulfur compounds. Two lectures. Pr., 52. Gerald

74. **Elementary Electochemisty.** (2) Two lectures. Not open to chemists and chemical engineers. Pr., Chem. 26, Physics 98. Moulton

121. **Chemistry of Engineering Materials.** (5) Materials of construction, water conditioning and treatment, solid and gaseous fuels, destructive distillation of coal, industrial carbon, ceramics, cements, glasses, iron and steel. Three lectures and two lab. periods. Pr., Chem. 111 or equivalent. Moulton

122. **Inorganic Chemical Industries.** (5) Development and control of inorganic unit processes, instrumentation, fertilizers, electrolytic industries, electrothermal industries, phosphorus industries, sulfur, sulfuric acid and nitrogen industries. Three lectures and two lab. periods. Pr., Chem. 111 or equivalent. Moulton

123. **Organic Chemical Industries.** (5) Development and control of organic unit processes, paint industries, oils, fats, waxes, soaps and detergents, sugar and starch, fermentation industries, wood chemicals, pulp and paper, synthetic fibers, plastics, natural and synthetic rubbers, petroleum, and dye industries. Three lectures and two lab. periods. Pr., Chem. 111 or equivalent. Moulton

152. **Advanced Chemical Calculations.** (3) Mathematical study of chemical operations, use of calculus in typical engineering problems. Three lectures. Pr., Math. 41 or equivalent. Gerald

170. **Unit Operations.** (3) A study of the fundamental unit operations of chemical engineering beginning with the film theory, fluid flow, flow meters, heat transfer, humidification and drying. Three lectures. Pr., 53. West

171. **Unit Operations.** (4) A continuation of Ch. E. 170 in which absorption and distillation are studied from the standpoints of equilibria, operating lines, rates, and size of equipment required. The laboratory covers the subject matter of Ch. E. 170. Two lectures and two lab. periods. Pr., 170. West

172. **Unit Operations.** (4) A continuation of Ch. E. 171 with a study of adsorption, extraction, crushing and grinding, screening, and laws of settling. The laboratory covers primarily the subject matter of Ch. E. 171. Two lectures and two lab. periods. Pr., 171. West

173. **Unit Operations.** (4) A continuation of Ch. E. 172 with a study of evaporation and crystallization and with a comprehensive design problem. The laboratory covers the subject matter of Ch. E. 172 and 173. Two lectures and two lab. periods. Pr., 172. West

174. **Chemical Engineering Thermodynamics.** (3) Pressure-volume-temperature relationships, equations of a state, and thermodynamic laws and properties are discussed with reference to unit operations. Three lectures. Pr., Chem. 181 and 182 or equivalent. Buck

176, 177, 178. **Chemical Engineering Thesis.** (1 to 5 ea. qtr. Maximum total for all 3 courses is 5 credits.) An assigned problem in unit operations or applied chemistry is investigated first in the literature and then in the laboratory and the results are incorporated into a thesis. Staff

179. **Research in Electrochemistry.** (2 to 5) Pr., permission. Staff

Courses for Graduates Only

218, 219, 220. **Advanced Unit Processes.** (2, 2, 2) Study of selected chemical process industries. Two lectures. Pr., 123. Staff

237. **Chemistry of High Polymers.** (2) Fundamentals of substances with high molecular weight, including study of valence consideration, molecular weight determination, polymerization and condensation reactions, cracking, fiber and film formation, glasses, and mechanical properties as related to chemical structure. One lecture and one lab. period. Pr., Chem. 132, 182. McCarthy

238. **Chemistry of High Polymers.** (2) Chemistry and technology of substances with high molecular weight, including natural and synthetic hydrocarbons, vinyls, rubbers, phenol-aldehyde resins, lignin, cellulose, starch, glycogen, nylons, proteins, and silicons. Two lectures. Pr., Chem. 132, 182. McCarthy

240. **Advanced Chemical Engineering Thermodynamics.** (3) General equations for phase equilibrium are studied. Applications of thermodynamics to unit operations and to prediction of chemical equilibria are developed in some detail. Three lectures. Pr., Chem. 201 or equivalent. McCarthy

241. **Advanced Unit Operations.** (3) Heat transfer and fluid flow, measurement of temperature and heat capacity, dimensional analysis, Fourier's law, steady and unsteady state heat conduction, radiant energy, energy transfer, fluid flow mechanisms, energy balances, Bernoulli's theorem, viscosity concepts, Poiseuille's and Fanning's equations, friction factors, convection heat transfer. Reynold's analogy, film coefficient correlations by use of Nusselt, Prandtl, Graetz and Reynold's numbers, overall heat transfer coefficients, introductory design calculations. Three lectures. Pr., 171. McCarthy

242. **Advanced Unit Operations.** (3) Diffusion theory, transfer of material between phases, design of absorption equipment, Kremser method, multicomponent systems, performance of absorption equipment, simultaneous absorption and chemical reaction, solvent extraction. Three lectures. Pr., 172. Moulton

243. **Advanced Unit Operation.** (3) Advanced work in binary and multicomponent distillation, use of activity coefficients, enthalpy-concentration diagrams, plate-to-plate calculations, minimum reflux, estimation of theoretical plates, capacity, prediction of plate efficiencies, H.T.U. concept, azeotropic and extractive distillation, problems in batch distillation. Three lectures. Pr., Chem. 173. West

244, 245, 246. **Advanced Unit Operations.** (2, 2, 2) Special problems in advanced unit operations. Three lectures. Pr., 241. Staff

247. **Industrial Electrochemistry.** (3) Theoretical and applied electrochemistry, units and laws, overvoltage and polarization, analysis, oxidation and reduction, deposition, refining, metallurgy, and electrothermics. Three lectures. Pr., Chem. 182 or permission. Moulton

249. **Graduate Seminar.** (1 to 5) Offered as desired by various members of the staff. Staff

300. **Research.** (+) Maximum: total of 9 credits for master's degree; total of 45 credits for doctor's degree. Staff

III. CIVIL ENGINEERING

Professors Van Horn, Farquharson, Harris, Hennes, Miller, Sergev, Smith, Tyler, Wessman; Professor Emeritus More; Associate Professors Hechtman, Moritz, Rhodes; Assistant Professors Campbell, Chittenden, Claxton, Collier, Ekse, Jarvi, Sylvester; Instructors Chenoweth, Glick, Horwood, Martin, Mason, Meese, Mittet; Lecturer Hauan.

56. **Forest Surveying.** (8) The use of steel tape, compass, clinometer, level transit and plane table. Pack Forest.

90. **Mechanics.** (4) Introduction to dynamics and statics. A condensed course for transfer students satisfying the requirements of G.E. 11 and 12. Pr., 1 yr, of college math.; not a substitute for either 91 or 92.

91. **Mechanics.** (3) Kinetics, kinematics, and applied dynamics. Pr., 90 or G.E. 12, Math. 33; preceded by or concurrent with Physics 97. Staff

92. **Mechanics.** (3) Mechanics of materials. Theory, analysis, and design of machine and structural members. Pr., 91 or permission. Staff

93. **Mechanics.** (3) Dynamics and mechanics of materials, continued. Pr., 91, 92. Staff

112. **Route Surveying.** (3) Alignment survey problems associated with the location of highways and railways including preliminary and final location, staking of curves, compensation for curvature and sight distance, preparation of location map for highway. Pr., G.E. 21 or C.E. 56. Chittenden

113. **Location and Earthwork.** (3) Highway and railway grades, profiles, cross sections, earthwork quantities including shrinkage and swell, and application of the mass diagram to the problems of haul; legal description; estimates. Pr., G.E. 21 or C.E. 56. Chittenden

114. **Intermediate Surveying.** (3) Adjustment of instruments, calibration of tapes, horizontal and vertical control of intermediate precision, determination of azimuth, state plane coordinates, mapping. Pr., G.E. 21. Chittenden

115. **Geodesy and Photogrammetry.** (3) Baseline measurement, triangulation, engineering astronomy, photogrammetry, and photo-interpretation. Pr., C.E. 56 or 114. Chittenden

Transportation Engineering

121. **Roads and Pavements.** (3) Road-building methods and materials. Pr., junior standing in engineering. Ekse, Meese

122. **Railway Engineering.** (3) Locomotive performance and train resistances, permanent way, economics of railway location, sidings and terminals. Pr., C.E. 113.

123. **River and Harbor Engineering.** (3) Breakwaters, shore protection, channel protection, and channel regulation. Theory of water waves. Pr., C.E. 113, 142. Meese

124. **Highway Design.** (3) Theories of rigid and flexible pavements; design of bituminous mixtures; intersections and roadway design; culverts. Two lectures and one lab. period. Pr., 121. Hennes, Ekse

125. **Principles of Transportation Engineering.** (3) Planning of highway, railway, air, and water transportation. Development of the master plan. Pr., senior or graduate standing; not open to civil engineering students.

126. **Airfield Design.** (3) Runway layout, paving, lighting, and drainage of airfields. Pr., senior or graduate standing. Ekse

Hydraulic and Sanitary Engineering

142. **Hydraulics.** (5) Flow of water through pipes and orifices, over weirs, and in open channels; energy of jets with application to impulse wheels. Three lect., six hrs. lab. Pr., 91. Harris, Moritz, Campbell

143. **Hydraulic Engineering.** (5) Complete projects, hydrometric methods; design of gravity spillway, flume intakes, surge, economic design of pipe line. Pr., 142. Van Horn, Moritz, Campbell

145. **Hydraulic Machinery.** (3) Development and theory of water wheels and turbine pumps; design of a reaction turbine; hydrostatic machinery and dredging equipment. Pr., 142. Harris, Moritz

147. **Hydraulic Power.** (3) Investigation of power development; generation of power; penstocks and turbines; types of installation. Pr., 143 and/or 142; senior standing. Harris

150. **Sanitary Science and Public Health.** (3) Sources of infection and modes of transmission of diseases. Bacteriological and chemical analyses of water and sewage. Pr., Chem. 2, 22, or equivalent. Two lect., four hrs. lab. Sylvester

152. **Municipal Engineering.** (3) For students in city planning. City streets, traffic, and transportation. Municipal sanitation. Pr., junior standing. Not open to civil engineering students. Tyler

153. **Principles of Regional Planning.** (3) Land use, development of natural resources, and land settlement. Pr., senior or graduate standing. Tyler

154. **Sanitary Designs.** (3) Sewers, sewage disposal, and water-purification plants. Pr., 155, 158. Tyler

155. **Water Supply Problems.** (3) Design, cost estimation, construction, operation, and maintenance of water supplies, distribution systems, and purification plants. Pr., 142, 150. Tyler, Sylvester

157. **Reclamation.** (3) Drainage and irrigation engineering. Soil conservation. Pr., 143 and senior standing. Van Horn

158. **Sewerage and Sewage Treatment.** (3) Design, operation, and maintenance. Refuse collection and disposal. Pr., 142, 150. Tyler, Sylvester

Engineering Materials

162. **Materials of Construction.** (3) Portland cement and concrete, concrete mixtures. Three hrs. lab. Pr., 92. Collier, Mason

163. **Materials of Construction.** (3) Strength and physical characteristics of timber, steel, and structural aluminum alloys. Three hrs. lab. Pr., 92. Smith, Mittet

166. **Soil Mechanics.** (3) Engineering properties of soils; bearing capacity and settlement of foundations. Two hrs. lab. Pr., senior standing in engineering. Meese

167. Earthwork Engineering. (3) Design, construction, and analysis of earthwork. Two hrs. lab. Pr., 166. Hennes

168. Engineering Properties of Soils. (3) Theory and procedures in soil testing and experimentation. Four hrs. lab. Pr., C.E. 166, senior or graduate standing. Hennes, Meese

Structural Analysis and Design

171. Structural Theory. (3) Introduction to continuous structures. Reinforced concrete members and connections. Elastic-line methods. Pr., 93. Mittet, Clanton

172. Structural Theory. (3) Stresses and deflections of beam and girder spans. Wood and steel members and connections. Combined stress members. Pr., 93. Jarvi, Mittet

173. Structural Theory. (3) Stresses and deflections of trusses and simple frames. Influence lines. Moving loads. Strain-energy methods. Pr., 172. Jarvi, Mittet

175. Structural Design. (3) Reinforced concrete retaining walls and buildings. Rigid frames. Pr., 171. Rhodes, Jarvi

176. Structural Design. (3) Reinforced concrete, steel, and wood bridges. Girder and truss spans. Pr., 173, 175. Miller, Rhodes

177. Structural Design. (3) Wood and steel frame buildings. Roof trusses. Pr., 176. Rhodes, Sergev

Special Senior and Graduate Courses

191. Advanced Professional Design. (2 to 5 ea. qtr.)

192. Port Development. (4) Engineering design of port facilities, river and protective works. Study of tides, currents, wave action, layout of channels and anchorage basins, wharf and other water-front constructions. Pr., 142, senior or graduate standing. Hennes

209. Engineering Relations. (2) Methods of setting up engineering problems and investigations, written and oral presentation of professional ideas and analyses of current research and investigations, both professional and economic, in the student's major field. Pr., graduate standing. Staff

220. Seminar. (2)

221. Theory of Elasticity. (3) The application of more refined methods to beams, disks, curved bars, thick cylinders, and torsion prismatic solids. Study of stress concentration, strain energy, and virtual work. Sergev

223. Advanced Strength of Materials. (3) The solution of more complicated problems in strength of materials, with particular emphasis on the technique of breaking down the problems to fundamentals and solving the resultant mathematical expressions. Sergev

225. Elastic Stability. (3) The study of buckling phenomenon in columns, beams, plates, and tubes, with practical applications. Sergev

228. Highway Administration. (3) Financing, planning, and operation of highways. Pr., graduate standing or permission. Hennes, Ekse

247. Advanced Hydraulic Power. (4) Investigation of power development, generation of power, penstocks and turbines, types of installation and special problems in the hydraulic power field. Pr., 143, 145, and graduate standing. Harris

260. Photoelasticity. (3) Use of photoelectric apparatus with applications in the analyses of common engineering problems in two dimensions, modern photoelastic theory, materials and methods. Pr., graduate standing or permission. Sergev

267. Advanced Soil Mechanics and Foundations. (4) Design, construction and analysis of earthwork. Stress in earth masses; dam foundations; landslide control. Pr., 166 and graduate standing. Hennes

268. Applied Soil Mechanics. (3) Soil mechanics in engineering practice; the application of theory to the analysis of footings, piling, retaining walls, tunnels and other substructures. Pr., C.E. 167, senior or graduate standing. Hennes

281. Advanced Structures. (3) Hinged arches and continuous trusses. Graduates in civil engineering or permission. Miller

282. Advanced Structures. (3) Hingeless arches and members of nonuniform section. Graduates in civil engineering or permission. Miller

283. Advanced Structures. (3) Multi-story and non-rectangular rigid frames. Graduates in civil engineering or permission. Miller

295. Advanced Professional Design. (2 to 5) H, M, S, W, or T.* Special studies by graduates under direction of members of staff. Maximum credits in any one field, 15.

300. Research. (†) H, M, S, W, or T.* Special investigations by graduate students under the direction of members of the staff.

Thesis. (9 max.)

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*Hydraulics (H), Materials (M), Structural (S), Sanitary (W), and Transportation (T).

† To be arranged.

IV. ELECTRICAL ENGINEERING

Professors A. V. Eastman, Hoard, Lindblom, Loew, Shuck, G. S. Smith; Associate Professors Cochran, A. E. Harrison, W. R. Hill, L. J. Lewis; Assistant Professors Bergseth, V. L. Palmer, Instructors Clay, A. B. Jacobsen, Robbins, W. E. Rogers, Rustebakke, E. H. Smith, Stout, Swarm, Tanner; Associates Blatt, Lee, G. J. Loomis

71. Direct-current Circuits. (5) Three hours lecture and recitation, four hours problems and laboratory demonstration. Beginning course for E.E. majors on direct-current circuit theory, including Ohm's Law, Kirchoff's Laws, Thevenin's Theorem, Superposition Theorem, effects of temperature, inductance, capacitance. Pr., Math. 33, G.E. 11 or C.E. 90.

72. Direct-current Measurements. (2) Four hours lab and class instruction. Methods of measuring potential, current, resistance, flux, inductance and capacitance. Pr., E.E. 71.

75. Direct-current Machinery. (6) Two hours lecture and recitation, eight hours lab and quiz. Construction, operation and characteristics of direct-current machinery, including shunt, series and compound motors and generators. Pr., E.E. 72.

101. Direct Currents. (5) Three hours lecture and recitation, two hours problems, and three hours lab on alternate weeks. Short course in direct-current circuits and machinery for those who are not electrical engineering students. Pr., Physics 98, Math. 33, G.E. 11 or C.E. 90.

105. Electric Wiring. (2) Two hours lecture and recitation. Special course for architects.

121. Alternating Currents. (5) Three hours lecture and recitation, two hours problems, and three hours lab. Short course in alternating-current circuits and machinery for those who are not electrical engineering students. Pr., 101.

125. Vacuum Tubes and Electronics. (5) Three hours lecture and recitation, two hours problems, and four hours lab. Short course for those who are not electrical engineering students, covering vacuum-tube construction, rectifiers, amplifiers, oscillators, and other electronic phenomena. Pr., 121.

159. Alternating-current Circuits. (5) Three hours lecture and recitation, two hours problems, four hours lab. on alternate weeks. Theory of single-phase and three-phase circuits including vector notation. Pr., 72.

161. Alternating-current Machinery. (4) Two hours lecture and recitation, four hours problems. Theory of transformers, induction motors, alternators, synchronous motors, single-phase motors. To be taken with 162. Pr., 75 and 159.

162. Alternating-current Machinery Laboratory. (4) Eight hours lab. Experimental work with alternating-current machinery. To be taken with 161.

163. Advanced Alternating Currents. (6) Three hours lecture and recitation, two hours problems, four hours lab. Theory of rotary converters, dielectric phenomena, corona, transmission lines. Pr., 161.

165. Electrical Measurements. (3) Two hours lecture and recitation, three hours lab. Theory and operation of practical and precision measuring apparatus, including bridges, potentiometers, watthour meters, demand meters, etc. Pr., 161. Shuck

169. Alternating-current Machinery. (4) Three hours lecture and recitation, two hours problems. A condensation of E.E. 161 and 163 for communication majors covering the theory of transformers, induction motors, alternators, synchronous motors, dielectric phenomena and other power problems. To be taken with E.E. 170. Pr., E.E. 75 and 159.

170. Alternating-current Machinery Laboratory. (4) Experimental work with alternating-current machinery. To be taken with E.E. 169.

171. Illuminating Engineering. (3) Two hours lecture and recitation, three hours lab. Fundamental principles of illuminating engineering, including the design of practical lighting installations and a study of characteristics of illuminaires. Pr., 159. Shuck

172, 174. Individual Projects. (2 to 5 ea. qtr.) Students registering for these courses are assigned a construction or design project to be carried out under the supervision of the instructor.

173. Electric Power Systems. (3) Two hours lecture and three hours lab. A general study of the elements and economics of power generation, transmission, and distribution. Pr., 161. Robbins

176. Electrical Machine Design. (3) One hour lecture, six hours lab. Design of a direct-current generator or motor, and of a transformer. Pr., 161. Lindblom

181. Vacuum Tubes and Electronics (6) Three hours lecture and recitation, two hours problems, four hours lab. Fundamentals of vacuum tubes; theory of rectifiers and amplifiers; photoelectric cells; thyratrons; applications to power and communication fields. Pr., 159.

183. Vacuum Tube Circuits. (6) Three hours lecture and recitation, two hours problems, four hours lab. Theory of vacuum-tube oscillators, modulators, detectors, and amplifiers; applications in radio and other high-frequency fields. Pr., 181.

184. Vacuum-tube Circuits. (4) Three hours lecture and recitation, four hours laboratory on alternate weeks. A condensation of E.E. 183 especially designed for power majors, with applications in power and related fields. Pr., 181.

185. Communications Networks. (6) Three hours lecture and recitation, two hours problems, four hours lab. Network theorems; series and parallel resonance; theory of transmission lines; theory and design of filters; equalizers; impedance matching. Pr., 159.

187. High-frequency Circuits and Tubes. (5) Three hours lecture and recitation, four hours lab. A study of special tubes and circuits for use at very high frequencies. Trigger circuits, sweep circuits, and other auxiliary control circuits. Preliminary study of antennas and wave propagation. Pr., 183. Cochran

189. Radio Design. (2) One hour lecture, three hours lab. Problems of designing radio receivers and transmitters, and of audio and video amplifiers; selection of suitable components; proper layouts. Pr., 183. Jacobsen

195. **Electric Transients.** (4) Two hours lecture and recitation, two hours problems, four hours lab. on alternate weeks. Single and double energy transients in R, L, and C circuits; with either direct or alternating applied emf's; magnetically coupled circuits and circuits with variable parameters. Pr., 159.

197. **Industrial Control.** (3) Two hours lecture and recitation, three hours lab. Theory, operation, and use of vacuum tubes, selsyns, autosyns, magnesyns, amplidynes, etc., in various types of control circuits. Pr., 161 and 181. Hoard

199. **Field Theory.** (3) Three hours lecture and recitation. A study of dielectric and magnetic fields under both static and dynamic conditions. Development of such basic field equations as Maxwell's and Poisson's. Pr., 159.

Courses for Graduates Only

203. **Advanced Circuit Theory I.** (3) Three hours lecture and recitation. Mathematical concepts applied in circuit analysis, including Fourier integrals, matrices, and complex variable. Pr., 161. Lewis

204. **Network Analysis.** (3) Three hours lecture and recitation. Advanced filter theory and applications including the analysis of feedback amplifiers. Pr., 181, 185, 203. Lewis

205. **Advanced Circuit Theory II.** (3) Three hours lecture and recitation. Application of operational calculus and the Laplace transformation to studies of the transient behavior of networks. Pr., 203. Lewis

220-222-224. **Graduate Seminar.** (0-0-2) Required of all candidates for the M.S. degree.

221. **Advanced Transients.** (5) Three hours lecture and recitation, four hours lab. Transient phenomena in rotating machinery, transmission lines, corona, lightning; theory and use of impulse generator; precision use of oscillograph. Pr., 195. Smith

223. **Symmetrical Components.** (3) Three hours lecture and recitation. A study of unbalanced three-phase systems, transmission lines, and protection of alternating-current equipment, by means of symmetrical components. Pr., 163. Shuck

225. **Power Transmission.** (5) Three hours lecture, four hours lab. Theory, design, and operation of electric-power transmission lines. Pr., 163. Loew

227. **Advanced Studies in Power Systems.** (5) Three hours lecture and recitation, four hours lab. Power flow in systems with two voltage sources. General network equations; synchronous machine-power angle characteristics; composite systems. Equivalent reactance of synchronous machines; stability criteria, stability characteristics of turbo-generators; transmission-line electrical loadings and comparative economic study. System design; torque-angle characteristics, two-machine stability. Multi-machine problems. Pr., 225. Loew

241. **Electro-acoustics.** (5) Three hours lecture and recitation, four hours lab. and problems. Properties of sound, physiology of hearing; acoustics and properties of acoustical materials, electrical transducers, and sound reproduction. Pr., 181. Hill

251. **High-frequency Techniques.** (5) Three hours lecture and recitation, four hours lab. Cathode-ray tubes and circuits; trigger circuits; sweep circuits; ultra-high-frequency generators, including velocity-modulation tubes and magnetrons. Pr., 187. Harrison

261. **Wave Propagation.** (6) Four hours lecture and recitation, four hours lab. Vector analysis; Maxwell's equations; r-f transmission lines; antennas; arrays; wave guides; wave propagation through space. Pr., 185. Tanner

263. **Microwave Vacuum Tubes.** (5) Four hours lecture and recitation, three hours lab. Theory of ultra-high frequency vacuum tubes, klystrons, traveling wave tubes and magnetrons, and their modulation characteristics. Pr., 183. Harrison

300. **Research.** (2 to 5 ea. qtr.)

V. GENERAL ENGINEERING

Professors Wilcox, Brown, Warner; Associate Professors Rowlands, Jensen; Assistant Professors Boehmer, Brightbill, Douglass, Engel, Gullikson, Radcliffe; Instructors Avery, D. R. Douglass, Glenn, Hammer, Hoag, Macartney, McNeese, Melder, Messer, Rollins; Lecturer Bliven

1. **Engineering Drawing.** (3) Orthographic projection including three-view drawing and all related views; use of instruments, sections, sketching, isometric and scale practice; stressing readings of drawings and techniques of letter and line-work. Must be preceded or accompanied by solid geometry. Boehmer and Staff

2. **Engineering Drawing.** (3) Training in making acceptable shop drawings; ink and pencil tracings; standards and conventions; practice in reading commercial drawings. Pr., GE 1. Douglass and Staff

3. **Drafting Problems.** (3) Applied descriptive geometry. Practical application of descriptive geometry principles to the solution of problems in the different fields of engineering by drafting room methods. Pr., G.E. 1 and 2. Warner and Staff

7. **Engineering Drawing.** (3) Short course for forestry students. Warner and Hoag

11. **Engineering Problems.** (3) Training in methods of analyzing and solving engineering problems. Coaching in proper methods of work and study, including training in systematic arrangement and clear workmanship. Deals principally with dynamic problems. Student is assisted in orienting himself in his engineering work. Pr., high school physics and advanced algebra. Brown and Staff

12. **Engineering Problems.** (3) Elementary mechanics, statics, and graphics. Continuation of the work in 11. Pr., 1, 11, and Math. 31. Gullikson and Staff

21. **Plane Surveying.** (3) Surveying methods, use of instruments, computations, mapping, U.S. public land surveys. Pr., 1, 2, and trigonometry. Engel and McNeese

151. **Inventions and Patents.** (1) Law and procedure for patenting inventions, employer-employee relationship, trademarks. Pr., junior standing. Bliven

VI. HUMANISTIC-SOCIAL STUDIES FOR ENGINEERS

Associate Professors A. V. Hall, Chapman; Assistant Professors Homenway, Naiden; Instructors Rupp, Tucker, Souther; Associates White, Bechtel, Cowles, Rustad

B.A. 3. Economics for Engineers. (3)

B.A. 57. Business Law. (3)

B.A. 166. Industrial Relations. (3)

B. Rudiments of Writing. (0) A 3-hour course taken without credit by students who fail in the entrance test in spelling, punctuation, grammar.

40. Engineering Report Writing. (1) Background of communication; practice in accurate and concise presentation of data through the various forms of technical reports. Pr., passing of admission test or Rudiments of Writing.

61. Techniques of Communication I. (1) Studies in subordination and coordination; analysis of lucidly written expository articles; techniques of reading and use of a reference library. Pr., H-S. S. 40.

62. Techniques of Communication II. (1) Studies in adaptation of material to readers of unlike levels, with emphasis on analysis of argument and propaganda; the newspaper and public address as media of social control; letter of application, recommendation report. Pr., H-S. S. 61.

63. Techniques of Communication III. (1) Studies in successful communication: the novel, poetry, drama; newspaper, radio, cinema; analysis of unlike media as employed by individual artists; an attempt to develop the student's individual style. Pr., H-S. S. 62.

65. Techniques of Communication. (3) A substitute for 61, 62, 63, when student schedules are irregular. Pr., H-S. S. 40.

101. Modern Reading. (3-5) Weekly analysis and critical comment upon informative writings, fiction or drama, and current articles, acquainting the student with the main types of literature and art. Taken either in class or by conference alone. Pr., H-S. S. 63 or equivalent.

102. Technical Writing. (3) Practice in writing; brief readings with analysis and critical comment. Taken either in class or by individual conference alone. Pr., H-S. S. 63 or equivalent.

131. Humanities I. (3) Broad survey of the fields of knowledge, with stress on basic human outlooks evidenced in science, the great religions, and developing democracy. Pr., H-S. S. 63 or 65.

132. Humanities II. (3) Influence of technology on society; studies in great thinkers, artists, and men of action. Pr., H-S. S. 131.

133. Humanities III. (3) Relationship of technology to contemporary social, intellectual, and artistic trends. Pr., H-S. S. 132.

191. Nontechnical Reading I. (1) Literary and informational material, planned to meet the most obvious needs of the individual student; weekly conference. Pr., H-S. S. 63 or equivalent.

192. Nontechnical Reading II. (1) Great works in literature, and their interpreters and critics; weekly conference. Pr., H-S. S. 191.

193. Nontechnical Reading III. (1) Current views, new outlooks, contemporary world developments. Pr., H-S. S. 192.

Psychology 122. Industrial Psychology for Engineers. (3)

VII. MECHANICAL ENGINEERING

Professors McMinn, McIntyre, Mills, Schaller, Winslow; Professor Emeritus Eastwood; Assistant Professors Cooper, Crain, Day, Philbrick; Instructors Campbell, Foote, Guidon, Krause, Moltrecht, Morrison, Newman, Nordquist, Owens, Snyder, Watson.

53. Metal Castings. (1) Theory and application of the science of producing metal castings. Three-hour period. Snyder

54. Welding. (1) Fundamentals of electric arc, gas and resistance welding, brazing. Flame cutting, heat bending, and weldment design. Three-hour period. Schaller

55. Metal Machining. (1) Theory of metal-cutting machine-tool operation. Three-hour period. Moltrecht

81. Mechanism. (3) Velocity analysis of linkages and other mechanisms; geometry of gearing; transmission of motion by links, gears, cams, and flexible couplings. Three lectures. Pr., G.E. 3, Math. 32. Day, Foote, Watson

82. Heat Engines. (3) Various apparatus used in modern power plants; construction, use and reason for installation. Not open to freshmen. Three lectures. Pr., G.E. 2. Campbell, Cooper, Foote, Krause, Newman

83. Mechanical Engineering Laboratory. (3) Calibration of instruments; tests of heat engines and mechanical equipment. Two lectures, three-hour lab. Preceded or accompanied by M.E. 82. Campbell, Krause, Newman, Owens

102. Engineering Materials. (3) Properties of the various materials used in engineering construction. Two lectures, three-hour lab. Pr., C.E. 92. Mills, Cooper, Day

104. Aircraft Materials. (2) Fabrication, processing and heat treatment of non-ferrous, ferrous and non-metalics in aircraft construction. Three-hour period. Pr., M.E. 53, 54, 55. Schaller

105. Tooling for Production. (1) Applied tooling and production of a mechanical project. Three-hour period. Pr., M.E. 55. Moltrecht

106. Production Techniques. (1) Machining, heat treatment, forging, metal-stamping, techniques. One-hour lecture. Pr., M.E. 105. Schaller, Moltrecht

107. Production Planning. (1) Design and equipment of a representative manufacturing plant. Three-hour lab. Pr., M.E. 105. Schaller, Moltrecht

108. Production Management. (3) Surveying of the organizational, operating, and management problems of industrial enterprises. Three lectures. Pr., junior standing. Schaller

109. Production Cost Analysis. (3) Economy studies, estimating and cost analysis. Three lectures. Pr., junior standing. Philbrick

110. Air Conditioning. (2) Abridged for architecture students. Two lectures. Pr., junior standing in architecture. Crain

111, 112. Machine Design. (3, 3) Six hours lab. Pr., C.E. 92, preceded or accompanied by M.E. 102. Cooper, Day, Foote, Watson

118. Thermodynamics. (5) Fundamental principles underlying the transformation of heat into work. Special application to engineering. Five lectures. Pr., M.E. 82, junior standing in engineering. McMinn, Nordquist

123, 124. Dynamics of Engines. (2, 2) Investigation of governors, fly wheels, and balancing. Two lectures. Pr., C.E. 91, M.E. 118. Winslow, Cooper

131. Industrial Materials and Processes. (3) Studies of the properties and uses of wood, metals, glass, and plastics in the manufacture of products of interest to industrial designers. Pr., junior standing in industrial design, or permission. Not open to engineering students. Mills

141, 142. Experimental Engineering. (3, 3) Continuation of M.E. 83 involving more extended and complete investigations. Six hours lab. Pr., preceded or accompanied by M.E. 118. McIntyre, Campbell, Cooper, Crain

161. Quality Control. (3) Control of manufacturing processes to make quality of the end product a function of production. Application of statistical methods to sampling control, charts, and analysis of variance. Three lectures. Pr., senior standing. Philbrick, Schaller

162. Methods Analysis. (3) Survey and measurement of factors concerning the human element in its relationship to standards of performance and production. Three lectures. Pr., senior standing. Philbrick, Schaller

165, 166. Machine Design. (2, 2) Advanced problems. Six hours lab. Pr., 112. Winslow, Morrison

170. Internal Combustion Engines. (3) Analysis and practice; stationary, marine, automotive, and airplane engines. Three lectures. Pr., 118. Cooper, Guidon

171. Internal Combustion Engine Design. (3) Six hours lab. Pr., 170. Cooper, Guidon

172. Internal Combustion Engine Laboratory. (3) Tests and investigations of various internal combustion units. Six hours lab. Pr., 170. McIntyre, Guidon

182. Air Conditioning. (3) Theory and practice of temperature and humidity control for industrial and comfort purposes. Three lectures. Pr., M.E. 82. Crain

184. Power Plants. (5) Selection of prime movers and auxiliaries for steam power plants. Theory of turbine operation. Five lectures. Pr., 124, senior standing. Winslow, Cooper

185. Naval Architecture. (3) Theory of naval architecture. Displacement, stability, strength, construction. Two lectures, three hours lab. Pr., junior standing. Rowlands

186. Naval Architecture. (3) Theory of naval architecture. Displacement, stability, strength, performance. Six hours lab. Pr., 185. Rowlands

187. Naval Architecture. (3) Applications of principles of naval architecture. Calculations and design. Six hours lab. Pr., 112, 186. Rowlands

188. Marine Engineering. (3) Application of mechanical engineering to ships, including propulsion. Three lectures. Pr., 186. McMinn

189. Refrigeration. (3) Two lectures, three hours lab., field trips. Pr., 118. McMinn

195. Undergraduate Thesis. (2 to 5) Investigation, design or experiment. To be taken in the senior year. McMinn

199. Research. (2 to 5 each quarter)

Courses for Graduates Only

200. Vibrations of Machinery. (3) Mathematical investigation of vibration phenomena, with emphasis on applications to operating conditions of machines. Three lectures. Pr., permission. Winslow, Mills

202. Advanced Engineering Materials. (3) Their properties, including physical, magnetic, and X-ray methods of inspecting and testing. Two lectures, three hours lab. Pr., 102. McMinn, Mills

204. Advanced Internal Combustion Engines. (2) Two lectures. Pr., 170. Guidon

300. Research. (2 to 5 each quarter)

VIII. MINERAL ENGINEERING

Professor Pifer (Director); Dean Emeritus Roberts; Professor Daniels; Associate Professors Poole, Rowe; Assistant Professor Johnson; Instructors Anderson, Finley

Prospector's Course: See page 160

Mining 10. Prospecting and Mining. (0) Three hours lecture, five hours laboratory; field trips. Anderson

Mining 11. Advanced Prospecting and Mining. (0) Anderson

Mining 20. Milling. (0) Two hours lecture, five hours laboratory. Poole, Anderson

Mining 21. Advanced Milling. (0) Poole, Anderson

Metallurgy 30. Metals. (0) Three hours lecture, two hours laboratory. Daniels

Mining Engineering

51. **Elements of Mining.** (3) Prospecting, boring, drilling, explosives, rock breaking, shaft sinking, hoisting, development, and fundamentals of mining methods. Pr., G.E. 2. Daniels

52. **Methods of Mining.** (3) Working of placer metal, coal and nonmetallic deposits; haulage, air compression, ventilation, sampling, and estimating, organization, safety. Pr., Min. 51. Daniels

101. **Milling.** (3) Elementary principles of mineral dressing. Technology, equipment, costs in unit operations of crushing, screening, grinding, hydraulic classification. Laws and theoretical principles. Two hours lecture, three hours lab. Poole

103. **Mine Rescue Training.** (1) Instruction and practice in use of oxygen rescue apparatus; first aid; safety; U.S. Bureau of Mines course. Physical examination required. Daniels

106. **Mine Excursion.** (1) Five-day trip in spring of junior year to a neighboring mining region.

107. **Mine Excursion.** (1) Five-day trip in spring of senior year, similar to 106.

108. **Mine Surveying.** (2) Practice in underground methods, use of special instruments, stope measurements, underground curves, shaft surveying, solar observations, carrying of meridian underground, mine mapping at Independence Mine, Silverton. Pr., C.E. 114. Anderson

122. **Coal-mining Methods.** (3) Prospecting, development, and operation of coal and stratified deposit mines. Principles of mechanized breaking, loading, and transportation. Daniels

151. **Elements of Mining.** (3) Same as 51. Pr., junior standing. Not open to those who have had 51. Daniels

152. **Methods of Mining.** (3) Same as 52. Pr., 151 and junior standing. Not open to those who have had 52. Daniels

161. **Mineral Dressing.** (4) Gravity and flotation concentration, mill principles and testing, auxiliary equipment. Two hours lecture, six hours lab. Pr., 101. Poole

163. **Mining Engineering.** (4) Principles and application; air compression and distribution; pumping plant and hydraulics; electrical equipment; plant design and construction. Studies at nearby mines and plants. Two hours lecture, six hours lab. Pr., Min.E. 53, E.E. 121. Pifer

164. **Mineral Concentration.** (3) Physico-chemical principles of flotation; electrostatic and magnetic separation. Pr., Min.E. 161, Chem. 111. Poole

171. **Mine Ventilation.** (3) Principles and practices. Physical and chemical aspects of mine atmospheres, gases, and dusts; physiological considerations, air flow and measurement; mechanical ventilation, equipment, and systems. Pr., Min.E. 52. Daniels

176. **Coal Preparation.** (3) Dry and wet cleaning processes; control by float-and-sink methods; characteristics of coal and associated impurities; economics of preparation; market requirements. Pr., Min.E. 101, Met. 103. Daniels

178. **Coal Preparation Machinery.** (2) Laboratory work in float-and-sink methods; screening, classification, tabling, jigging, and other cleaning methods. Pr., Min.E. 101, 176, Met. 103.

180. **Mineral Land Valuation.** (2) Mine examination methods, estimation of mineral deposits and reserves, financial calculations, reports, professional ethics, mineral land laws. Pr., senior standing. Pifer

181. **Mineral Industry Economics.** (3) Mineral resources, distribution, utilization, depletion; government policies, taxation, tariffs; industrial organization, cartels, international control; markets and prices; financial provisions; elements in cost of plant and production. Pr., Econ. 13, upper-division standing, or permission. Pifer

182. **Mineral Industry Management.** (3) Administrative methods; personnel selection; methods of payment; labor relations; social and economic aspects. Pr., senior engineering standing; Econ. 13. Daniels

191. **Undergraduate Thesis.** (†)

Courses for Graduates Only

201. **Seminar.** (1) Lectures and discussions. Required of fellowship holders in the School of Mineral Engineering. Staff

221. **Metal Mining.** (†) Pifer

231. **Mineral Dressing.** (†) Poole

251. **Coal Mining.** (†) Studies in coal mining, preparation or coking with particular reference to Pacific Northwest. Pr., graduate standing. Daniels

271. **Cooperative Research with U.S. Bureau of Mines.** (6)

Metallurgical Engineering

53. **Elements of Metallurgy.** (3) Chemistry and technology of unit processes. Refractories, fuels, fluxes. Properties of metals and alloys. Open to all sophomore engineers. Pr., Chem. 23.

101. **Fire Assaying.** (3) Testing of reagents, sampling and assaying of ores, furnace, and mill products. Pr., Chem. 111. Finley

102. **Metallurgical Laboratory.** (2) Experiments in extractive metallurgy, unit operations. Six hours lab. Pr., Met. 53, Chem. 111.

103. **Fuel Technology.** (3) Primary and manufactured fuels; source, composition, methods of utilization, and economy. Pr., junior standing. Daniels

104. **Non-ferrous Metallurgy.** (3) Principles and technology in extractive metallurgy of copper, lead, zinc, aluminum, and magnesium. Pr., Met. 53.

106. **Metallurgy Excursion.** (1) Five-day trip in spring of junior year.

107. **Metallurgy Excursion.** (1) Five-day trip in spring of senior year.

113. **Fuel Technology Laboratory.** (1) Proximate and thermal analysis of gaseous, liquid, and solid fuels. Pr., Met. 103 taken concurrently. Finley

141. **Engineering Physical Metallurgy.** (4) Elementary physical metallurgy and metallography, for nonmajors. Open to upper-division engineering students. Pr., physics 99. Rowe

153. **Elements of Metallurgy.** (3) Same as 53. Pr., junior standing. Not open to those who have had 53. Finley

154. **Wet Assaying.** (3) The commercial and industrial methods for determination of elements in ores and furnace products. Pr., Chem. 109, 110, or 111. Finley

155. **Iron and Steel.** (3) Their metallurgy and manufacture; raw materials; furnaces; irons, plain carbon and alloy steels; properties; and uses in engineering work. Pr., junior engineering standing. Daniels

160. **Metallurgical Analysis.** (2) Slags, industrial products, and (for ceramics and geology students) clays and rocks. Pr., 153. Finley

162. **Physical Metallurgy.** (3) The constitution of metals and alloys and their relations to the physical and mechanical properties of the metal. Open to all upperclass engineering students. Rowe

163. **Metallography.** (3) Preparation, photomicrography, study of metal sections. Pr., 162. Rowe, Finley

165. **Metallurgical Calculations.** (3) Physical chemistry of metallurgy, slag calculations, furnace problems. Pr., 104. Finley

166. **Advanced Non-ferrous Metallurgy.** (3) Electrolytic and electrothermic metallurgy; applications to extraction, refining, plating, forming, dust recovery. Pr., Met. 165, E.E. 101. Finley

191. **Undergraduate Thesis.** (†) Completed thesis due 3 weeks before graduation. Pr., senior standing. Maximum total of 5 credits required.

Courses for Graduates Only

221. **Advanced Metallurgy.** (†) Staff

231, 232. **Theory of Metals and Alloys.** (3, 3) Metal structures, alloy stability, metal plasticity and flow, diffusion in metals, iron-carbon alloy theory, electron theory of solids and its metallurgical applications. Pr., graduate standing. Rowe

261. **Fuels and Combustion.** (†) Advanced study in combustion technology, fuel utilization; physics and chemistry of combustion. Pr., Met. 103, graduate standing. Daniels

Ceramic Engineering

90. **Industrial Minerals.** (3) Nonmetallic minerals and their products. Pr., sophomore standing in engineering or science. Staff

95. **Ceramic Processes.** (3) Equipment, production methods, and products. Pr., sophomore standing. Johnson

100. **Clays, Plasticity, and Suspension.** (3) Pr., 90. Johnson

101. **Firing and Firing Problems.** (3) Vitrification of clay; melting, fusion, crystallization of silicates. Pr., 100. Johnson

102. **Ceramic Decoration.** (3 to 6) Its value; colors, surface textures, glazes. Pr., 101. Staff

104. **Calculations for Bodies and Glazes.** (3) Physics and chemistry of preparing, drying, firing, and testing ceramic materials and glazes. Pr., junior standing in engineering. Staff

105. **Drying and Drying Problems.** (3) The physics and chemistry of drying clay products. Pr., junior standing in engineering. Johnson

106. **Ceramic Engineering Excursion.** (1) Five-day field trip in junior year.

107. **Ceramic Engineering Excursion.** (1) Five-day field trip in senior year.

108. **Pyrometry.** (2) Principles, methods, and equipment in high temperature instrumentation. Pr., junior standing in engineering. Johnson

110. **Ceramic Physical-Chemical Measurements.** (2) Testing of clays and other ceramic materials. Pr., junior standing in engineering. Johnson

115. **Physical Ceramics.** (3) Phase and structure studies of nonmetallic materials. Pr., 90 to 110. Johnson

117. **Glass Technology.** (3) Materials, methods, and equipment used in glass manufacture; testing, properties, and structure of glass. Pr., permission. Staff

119. **Cements, Limes, and Plasters.** (3) Composition, reactions, plant control and manufacture, testing. Pr., senior in engineering. Staff

121. **Ceramic Bodies Laboratory.** (3) Pr., 90 to 110. Staff

122. **Ceramic Coatings Laboratory.** (2) Pr., 90 to 110. Staff

123. **Ceramics Products Laboratory.** (5) Pr., 90 to 110. Staff

124. **Dryer and Kiln Design.** (3) Ceramic kiln calculations and design problems laboratory. Pr., senior in ceramic engineering. Johnson

125. **Ceramic Plant Design.** (3) Project in design of plant; equipment selection and application. Pr., 124. Staff

131, 132, 133. **General Ceramics, Pottery Techniques.** (3 to 5 ea. qtr.) (For 3 hrs. credit, 6 hrs. lab.; 5 hrs. credit, 9 hrs. lab. and a special problem.) Industrial and craft methods of manufacturing ceramic products, mainly architectural terra cotta, pottery, and slip cast ware; decorative processes; glaze studies. No prerequisites. Staff

162. **Porcelain Enamels.** (3) Composition, application, firing, properties, and testing. Pr., permission. Staff

163. Refractories. (3) Physical and chemical composition, properties, utilization. Pr., senior in engineering. Johnson

164. Refractories and Heavy Clay Products Laboratory. (3) Practice in processing and testing. Pr., 163. Staff

191. Undergraduate Thesis. (†) Pr., senior standing. Completed thesis due 3 weeks before graduation. Total of 5 credits required. Staff

Courses for Graduates Only

221. Ceramic Research. (†) The ceramic resources of the Pacific Northwest; or new products or processes. Staff

231. Physical Measurements. (†) Johnson

241. Industrial Minerals Research. (†) Johnson

ENGLISH

Professors Heilman, Blankenship, Eby, Griffith, Harrison, Lawson, Perrin, Roethke, Taylor, Winther; Professors Emeriti Benham, Cox; Associate Professors Adams, Bostetter, H. Burns, Cornu, Savage, Stein, Stirling, Zillman; Assistant Professors S. Anderson, Beal, Brown, Burgess, W. Burns, Colton, Davis, Emery, Ethel, Gillette, M. Harris, Hilen, Kaufman, Kuhn, Nix, Pellegrini, Person, Redford, Roberts, Trueblood, Vickner, Walters, Willis; Instructors V. Anderson, Anshutz, Ault, Duckett, Gould, Guberlet, Huston, McKinlay, Mark, Morrison, St. Clair, Sylvester, Thorpe, Yaggy; Associates Binder, Burnam, Dusenbery, G. Harris, Mason, Miller, Nelson, Rivenburgh, Stahl, Stevens, Van Vactor; Librarians Gilchrist, Young, Valentine

English 1 *or equivalent is prerequisite to all literature courses except* 67, 69, 72, 73
(For English B, 40, 81, 82, 83, 85, 123, 124, 125, 194, 195, 196, see page 226.)

A. Elementary Composition. (No credit) For those who fail in entrance tests for 1. Lawson in Charge

AJ. Elementary Composition. (No credit) For foreign undergraduate students who fail in entrance tests for 1. Lawson in Charge

S. English for Foreign Graduate Students. (No credit) Lawson in Charge

1, 2, 3. Composition. (3, 3, 3) Fundamentals of effective exposition; collecting, organizing, and evaluating materials for writing; reading contemporary writings for meaning and form. Lawson in Charge

31, 32, 33. World Literature. (2, 2, 2) Readings from an anthology of classical (Greek and Roman), medieval, and modern literature.

51, 52, 53. Factual Writing. (3, 3, 3) Upper-division credit for upper-division students in 53. Pr., 1, 2, 3, or equivalent. Biographical and Informational Writing, 51; Opinion Writing, 52; Scholarly and Technical Writing, 53.

57. Introduction to Poetry. (5) Zillman

58. Introduction to Fiction. (5) Analysis of short stories and novels.

61, 62, 63. Verse Writing. (5, 5, 5) Pr., 1, 2, 3, and permission. Roethke

64, 65, 66. Literary Backgrounds. (5, 5, 5) The most important English classics, their content, literary forms, and historical relations.

67, 69. Survey of American Literature. (3, 3) Not open for credit to students who have taken or are taking 161, 162 or 163. Blankenship, Davis, Hilen

70. Advanced English. (3) For students in nursing at Harborview Hospital.

72, 73. Introduction to Modern Literature. (3, 3) Essays, poetry, novels, plays. Not open for credit to students who are taking or have taken 104, 106, or 166. Brown

77, 78, 79. Narrative Writing. (3, 3, 3) Pr., 1, 2, 3, or equivalent.

101. The Bible as Literature. (5) Trueblood

104. Modern European Literature. (5) Harrison

106. Modern English Literature. (5) Harrison

110, 111, 112. Advanced Verse Writing. (5, 5, 5) Pr., 61, 62, 63, and permission. Roethke

113, 114, 115. Advanced Study of Poetry. (5, 5, 5) Pr., permission. Roethke

117. History of the English Language. (5) Growth and development of the English language from Anglo-Saxon times to the present. Open to sophomores. Person

120. Modern Poetry. (5) Zillman

124, 125. Types of Dramatic Literature. (5, 5) Analysis of dramatic structure. Tragedy and comedy. Heilman

128, 129, 130. Dramatic Composition. (3, 3, 3) Experimental creative work. Pr., 1, 2, 3, or equivalent. Redford

131, 132, 133. Advanced Factual Writing. (5, 5, 5) 131: Biographical and historical writing; 132: Opinion writing in a variety of fields; 133: Criticism of literature and the arts. Pr., 51, 52, or permission. Harris

137, 138, 139. Advanced Short Story Writing. (5, 5, 5) Pr., 77, 78, 79, or permission. Harris, Redford, Thorpe

140, 141. Social Ideals in Literature. (5, 5) Model commonwealths. Literature and society. Adams

144, 145. Eighteenth-century Literature. (5, 5) 144: Swift, Pope, Defoe, Addison, and Steele; 145: Doctor Johnson and his circle; the preromantics. Cornu

147, 148, 149. The English Novel. (5, 5, 5) Heilman, Winther, W. Burns

150, 151, 152. Old and Middle English Literature. (5, 5, 5) 150: Old English literature in translation; 151: Chaucer and contemporaries; 152: Romances and folk literature.
Ethel, Griffith, Kaufman, Person

153, 154. English Literature: 1476-1642. (5, 5) 153: The Renaissance; 154: non-Shakespearean Elizabethan drama. Adams

156, 157, 158. Novel Writing. (5, 5, 5) Pr., 77, 78, 79, or permission. Savage

161, 162, 163. American Literature. (5, 5, 5) 161: To 1830; 162: Emerson, Thoreau, Hawthorne, Melville, Whitman; 163: Twain, Howells, James.
Blankenship, H. Burns, Davis, Harrison, Hilen

166. Modern American Literature. (5) The beginning of realism; tendencies from 1900 to 1915; contemporary fiction and poetry. Blankenship, Harrison

167, 168, 169. Seventeenth-century Literature. (5, 5, 5) 167: Bacon, Burton, Brown, the Spenserians, the cavalier poets, the metaphysical poets; 168: Milton; 169: Dryden, Bunyan, Locke, the dramatists, the lyric poets. Stein, Ethel

170, 171, 172. Shakespeare. (5, 5, 5) 170: Introduction; 171: Comedies and Histories; 172: Tragedies and Romances. Pr., 170 for 171 and/or 172.
Adams, Kaufman, Pellegrini, Stirling, Taylor

174, 175, 176. Late Nineteenth-century Literature. (5, 5, 5) Pr., 174 for 175. Brown, Winther

177, 178, 179. Early Nineteenth-century Literature. (5, 5, 5) Pr., 177 for 178.
Bostetter, Trueblood, Zillman

180, 181, 182. Old English Language. (5, 5, 5) Anglo-Saxon classics in the original.

184, 185, 186. Advanced Writing Conference. (3 to 5 ea. qtr.) Revision of manuscripts. Student entering this course should have the preliminary work on his writing project completed. Pr., permission. Savage, Redford, Harris

187. English Grammar. (3) Emery

188. Current English Usage. (3) Perrin

189. English Prose Style. (5) Perrin

190, 191, 192. Major Conference. (3, 3, 3)
Teachers' Course. (See Educ. 75H.)

For descriptions of courses in foreign literatures in translation, see departments of Classical, Far Eastern, Germanic, Scandinavian, and Romance Languages.

Courses for Graduates Only

200. Methods of Contemporary Criticism. (5)

201. Graduate English Studies. (5) Required of candidates for the M.A. and Ph.D. Griffith

202, 203. Literary Criticism. (5, 5) 202 required of candidates for the M.A. and Ph.D. 203 is required of candidates for the Ph.D. Winther, Burns

204, 205, 206. Chaucer. (5, 5, 5) Griffith

207, 208, 209. Fifteenth-century Literature. (5, 5, 5) The Post-Chaucerians; Malory's *Morte D'Arthur*, its sources and influence; the fifteenth century lyric; English liturgical drama and the morality play.

210, 211, 212. The Renaissance and Spenser. (5, 5, 5) Adams, Stirling

213. Shakespeare's Dramatic Contemporaries. (5) Adams

217, 218, 219. Shakespeare. (5, 5, 5) Taylor

221, 222, 223. Seventeenth-century Literature. (5, 5, 5) Stein

224, 225, 226. American Literature. (5, 5, 5) Eby

231, 232. Old English. (5, 5) Anglo-Saxon grammar; Old English prose and poetry; Beowulf. 231 and 232 required of candidates for the doctor's degree.

238, 239, 240. Early Nineteenth-century Literature. (5, 5, 5) Bostetter

241, 242. 243. Victorian Literature. (5, 5, 5) Brown, Winther

244, 245, 246. Eighteenth-century Literature. (5, 5, 5) Cornu

247. Rhetoric. (5) Perrin

253. Current Rhetorical Theory. (5) Perrin

300. Research. (†)

General Literature

Instructor Hilen

101. Introduction to Criticism and Literature. (5) May receive credit in English. Colton

151, 152, 153. Masterpieces of European Literature. (5, 5, 5) Pr., sophomore standing. No credit to students who take 191, 192, 193 or 194, 195, 196. Hilen

160. The Literature of the Renaissance. (5) The aim of this course is an appreciation of the place of the Renaissance in the formation of modern attitudes and values. The principal intellectual trends of the Renaissance will be studied through the literature, particularly the writings of Erasmus, Castiglione, Vives, Rabelais, Montaigne, and Bacon. A. C. Keller

191, 192, 193. General European Literature. (3, 3, 3) A synthetic view of the literatures of the world as they have affected English literature. To approximately 1650 A.D. Pr., junior standing.

194, 195, 196. General European Literature. (3, 3, 3) Pr., 193. From approximately 1650 A.D. to approximately 1900. Pr., junior standing.

For other courses that form a part of the general literature program, see English, and the foreign language departments.

FAR EASTERN AND SLAVIC LANGUAGES AND LITERATURE

Professors Taylor, Ballis, Michael; Visiting Professor Wittfogel; Associate Professors Reifler, Spector, Tatsumi, Williston; Assistant Professors Chu, Erlich, Ewing, Gershevsky, Maki, Shih; Lecturers Hsia, Wilhelm; Instructors Kastner, Lavaska, Novikow, Pahn, Suwoo; Research Associates Krader, Ho, Wu; Associates Lantos, Longwell, Matsushita, Namkung, Rochlitz, Shaw

The Far Eastern and Russian Institute

10. Survey, Problems of the Pacific. (5) Michael, Taylor, Williston, Maki
15. Introduction to the Soviet Union. (5) An introduction to the land, people, institutional development, economy, social organization, government and foreign relations of the Soviet Union. Ballis
40. Chinese Civilization. (5) Survey of China's material civilization, fine arts, literature, religion, and thought in relation to the general development of Chinese society. Shih
41. Japanese Civilization. (5) Survey of Japan's material civilization, fine arts, literature, religion, and thought in relation to the general development of Japanese society. Not offered 1949-1950.
42. Korean Civilization. (5) Survey of Korea's material civilization, fine arts, literature, religion, and thought in relation to the general development of Korean society. Williston
43. Russian Civilization. (5) Survey of Russia's material civilization, fine arts, literature, religion, and thought in relation to the general development of Russian society. Spector
90. History of China. (5) Survey of China's history from the earliest times to the present, with emphasis on the development of Japanese society. Williston
91. History of Japan. (5) Survey of Japan's history from the earliest times to the present, with emphasis on the development of Japanese society. Williston
92. History of Korea. (5) Survey of Korea's history from the earliest times to the present, with emphasis on the development of Korean society. Williston
93. History of Russia. (5) Survey of Russia's history from the earliest times to the present, with emphasis on the development of Russian society. Treadgold
110. Survey, Problems of the Pacific. (5) Michael, Taylor, Williston, Maki
113. Civilization of Southeastern Asia. (5) The impact of India, China, and the West upon native cultures. The evolution of social, political and economic institutions. Kastner
143. Chinese Social Institutions. (5) Staff
147. Modern Chinese History. (5) Survey of modern Chinese society from 1840 to the present. Pr., 90 or upper-division standing. Taylor
148. History of Republican China. (3) Michael
155. Literature of China in Translation. (5) Shih
157. Modern Japanese History. (5) Survey of the beginnings and development of modern Japan, and Japan's transformation under American rule. Maki
166. Russian Political and Social Institutions. (3) Survey of pre-Revolutionary political and social development from early times to 1917. Treadgold
167. Modern Russian History. (5) Survey of the development of the Soviet Union from the Russian Revolution to the present. Treadgold
168. Russia in Asia. (3) Survey of the relations of Tsarist Russia and the Soviet Union with Eastern Asia.
190. Undergraduate Seminar on China. (3) Survey of the principal literature of China in Western Languages, introduction to the methodology of Chinese studies and Chinese historiography. Pr., permission. Williston
199. Undergraduate Research. (3 to 5) For Far Eastern majors. May be repeated for credit. Pr., permission. Staff

Courses for Graduates Only

200. Methodology in Far Eastern Studies. (3) Required of all graduate students taking degrees or writing theses in Far Eastern subjects, other than languages. Staff
210, 211, 212. Seminar on China. (3, 3, 3) Chinese historiography. Pr., permission. Wilhelm
220, 221, 222. Seminar on Eastern Asia. (4, 4, 4) Taylor, Michael
224J. Seminar on Asia. (3) The continent will be taken in large cultural regions, the offering for 1949-50 being Inner Mongolia. Social structure, history, and relation to China and Russia. Staff
225, 226. Seminar on Far Eastern Diplomacy. (3, 3) Ballis, Williston
230. Seminar on Russia and the Soviet Union. (4) May be repeated for credit. Pr., permission of the instructor. Ballis
300. Research. (†) Pr., permission. Staff

Not offered in 1949-50: 144, Chinese History, Earliest Times to 221 B.C.; 145, Chinese History 221 B.C. to 906 A.D.; 146, Chinese History 906 A.D. to 1840 A.D.; 153, Japanese Social Institutions; 193, Contemporary China.

Courses offered in other departments: Philosophy 172, 173. Pol. Sci. 114, 129, 132, 147, 166, 169, 176, 178.

For other courses on the Far East, see Anthrop. 112, 114, 208, 224; Art 182, 183, 184; Econ. 192, 193; Geog. 103, 132, 133, 171, 203, 213, 215, 217.

†To be arranged.

Department of Far Eastern and Slavic Languages and Literature

Chinese

1.	Chinese Language. Intensive A. (10)	Shih, Staff
1B.	Elementary Chinese Language. (5) Pr., 1A.	Staff
3.	Chinese Language. Intensive B. (10) Pr., 1 or equivalent.	Hsia, Staff
101.	Chinese Language. Intensive C. (10) Pr., 3 or equivalent.	Hsu, Staff
102, 103, 104.	Advanced Colloquial Chinese. (5, 5, 5) Pr., 101 or equivalent.	Shih, Staff
105, 106, 107.	Introduction to Literary Chinese. (5, 5, 5) Syntactical analysis, translation from literary Chinese into English and vice versa. Pr., 101 or equivalent.	Reifler
108.	Chinese Reference Works and Bibliography. (3) Introduction to the methodology of Sinology. Pr., 101 or equivalent.	Chu
155.	Ancient Chinese Literature. (5)	Wilhelm
156.	Medieval Chinese Literature. (5)	Wilhelm
157.	Modern Chinese Literature. (5)	Wilhelm

Courses for Graduates Only

200.	The Morphology and Syntax of Literary Chinese. (5)	Reifler
202, 203, 204.	Readings in Literary Chinese. (5, 5, 5)	Shih
205.	Structure of Chinese Characters. (5)	Reifler
206.	Studies in Ancient Literary Chinese. (5)	Shih
208.	Studies in Modern Literary Chinese. (5)	Shih
209.	Chinese Phonology. (3)	Staff
210.	Studies in Chinese Prose. (5)	Williston
250.	Seminar on Chinese Literature. (4)	Shih

Not offered 1949-50: 201, Chinese Bibliography; 207, Studies in Medieval Literary Chinese; 211, Studies in Chinese Poetry; 212, Studies in Chinese Drama.

Hungarian

1-2, 3.	Elementary Hungarian. (5-5, 5) Oral analytic method will be used, modified so as to serve toward a reading knowledge.	Lantos
101.	Intermediate Hungarian Language. (5) Reading, vocabulary, and composition.	Lantos
102.	Advanced Hungarian Language. (5) Reading, vocabulary, and composition.	Lantos

Japanese

1.	Japanese Language. Intensive A. (10)	Tatsumi, Staff
1B.	Elementary Japanese Language. (5) Pr., 1A.	Staff
3.	Japanese Language. Intensive B. (10) Pr., 1 or equivalent.	Matsushita, Staff
101.	Japanese Language. Intensive C. (10) Pr., 3 or equivalent.	Tatsumi, Staff
102, 103, 104.	Advanced Japanese Language. (5, 5, 5) Pr., 101 or equivalent.	Staff
105, 106, 107.	Readings in Japanese Sources. (5, 5, 5) (May be repeated for credits.) Pr., 104 or equivalent.	Tatsumi
109.	Elementary Japanese Composition. (5) Pr., instructor's permission.	Staff
158.	Literature of Japan in Translation. (5) Not offered 1949-50.	

Courses for Graduates Only

200.	Morphology and Syntax of the Japanese Language. (5)	Tatsumi
202, 203, 204.	Readings in Documentary Japanese. (5, 5, 5) May be repeated for credit.	Tatsumi
205, 206.	Advanced Composition in Documentary Japanese. (5, 5)	Tatsumi

Korean

1A, 1B.	Elementary Spoken Korean Language. (5, 5)	Sunoo, Staff
1.	Korean Language. Intensive A. (10)	Sunoo
3.	Korean Language. Intensive B. (10) Pr., 1 or equivalent.	Sunoo
101.	Korean Language. Intensive C. (10) Pr., 3 or equivalent.	Staff
102, 103, 104.	Advanced Korean. (5, 5, 5) Pr., 101 or equivalent.	Sunoo
105.	Korean Grammar. (5)	Sunoo
106, 107, 108.	Advanced Korean Reading. (5, 5, 5) Korean composition, literature and advanced reading. Pr., 104, 105, or equivalent.	Staff

Russian

1A, 1B.	Elementary Russian Language. (5, 5)	Novikow, Lavaska
1.	Russian Language. Intensive A. (10)	Gershevsky
2.	First-year Elementary Russian. (5) Pr., 1B or equivalent.	Lavaska
3.	Russian Language. Intensive B. (10) Pr., 1 or equivalent.	Pahn

Not offered 1949-50: 108, Elements of Sosho; 201, Japanese Reference Works and Bibliography.
†To be arranged.

101. Russian Language. Intensive C. (10) Pr., 3 or equivalent. Novikow
102, 103. Russian Grammar and Composition. (5, 5) Pr., 101. Shaw
104. Advanced Russian Language. (5) Pr., 103. Can be repeated once for credit. Gershevsky
107, 108, 109. Advanced Russian Reading. (5, 5, 5) Covers progressively: (a) industrial Russia, (b) introduction to Russian classics, (c) modern Russian literature. Pr., 101 or equivalent. Erlich, Staff
110. Advanced Russian Grammar and Composition. (5) Pr., 103 or equivalent. Erlich
150. Russian Literature. (5) In translation. The great masters of the Golden Age. Spector
151. Contemporary Russian Literature. (5) In translation. Outstanding writers from Gorky to Sholokhov. Spector
152. Russian Drama. (5) In translation. A survey of representative Russian plays, 1782-1948. Spector
155. Modern Russian Poetry. (3) Erlich
175. Soviet Press Translations. (5) Pr., 110 or equivalent. Longwell
185. History of Russian Standard Language. (3) Historical outline of the Russian literary tongue from its inception to our time. Pr., 110. Erlich
191. Introduction to Slavic Philology. (3) Examination of the common origin of Slavic languages. Pr., 110. Erlich
194. Readings in Old Church Slavonic. (3) Reading and grammatical interpretation of old church Slavonic texts. Pr., 110. Lavaska

Courses for Graduates Only

201. Advanced Russian Syntax. (3) Pr., 110. Gershevsky
202. Phonetic Structure of Slavic Languages. (3) Pr., 110. Erlich
203. Morphological Features of Slavic Languages. (3) Pr., 110. Erlich
221. Old Church Slavonic. (3) Descriptive study of the phonology and grammar of old church Slavonic. Pr., 110. Erlich
257. Seminar in Russian Language. (3) Examination and discussion of Russian masterpieces. Pr., 110. Erlich, Gershevsky
259. Russian Oral Epic Tradition. (3) Introduction to Russian Folklore. Pr., 110. Erlich
260. Early Russian Literature. (3) Pr., 110 or equivalent. Staff
285. Seminar on Dostoyevsky. (3) A study of Dostoyevsky, his ideology and influence on Russian and European thought, based primarily upon his major novels. Spector

Serbo-Croatian

1, 2, 3. Elementary Serbo-Croatian Language. (5, 5, 5) Rochlitz

FISHERIES

101. Comparative Anatomy and Physiology of Fishes. (5) A general survey of the morphology, exclusive of the skeleton, and the bodily functions of fishes. Pr., Zool. 1, 2. Welander
102. Phylogeny of Fishes. (5) Skeletal morphology of fishes; survey of the system of fish classification; distribution of fishes. Pr., 101. Welander
103. Identification of Fishes. (5) An introduction to the research methods and techniques of ichthyological systematics with particular attention paid to the identification of food and game fishes. Pr., 102. Welander
105. Economically Important Mollusca. (5) The classification, life histories, distribution, methods of cultivation, and economic importance of oysters, clams, abalone, pearl shells, octopus, squid, and related molluscs. Pr., Zool. 1, 2. Lynch
106. Economically Important Crustacea. (5) The classification, life histories, distribution, methods of capture, and economic importance of crabs, shrimps, lobsters, crawfish, and the smaller Crustacea which are fished commercially or are important as food for fishes and other vertebrates. Pr., Zool. 1, 2. Lynch
107. Aquatic Invertebrates of Minor Economic Importance. (5) Classification, life histories, occurrence, and utilization of invertebrates of economic importance such as sponges, corals, annelid worms, starfish, sea cucumbers, sea urchins, and other aquatic invertebrates fished or cultivated on a commercial scale. Pr., Zool. 1, 2. Lynch
108, 109, 110. General Survey of Fisheries Work. (1, 1, 1) Lectures by eminent speakers from the game fish agencies, the commercial fisheries agencies, and the commercial fishing industry designed to provide the student with early vocational orientation. Required of all majors. Chapman
125. Migrations and Races of Fishes. (5) Marking and other methods of determining migrations of fishes and homogeneity of fish populations; implication of these factors to the management of both fresh water and marine fisheries. Pr., 101, 102. DeLacy
126. Early Life History of Marine Fishes. (5) Reproduction, larval and post-larval life of economically important marine fishes; dispersion and survival rates; implications of these factors to management of food fish fisheries; methods of investigation used in this field of research. Pr., 101, 102. DeLacy
127. Ecology of Marine Fishes. (5) Effect of variations in hydrographic conditions, availability of food, type of bottom, geographic location, and other environmental conditions on distribution of fishes, their segregation into homogeneous stocks, their variation in abundance and availability to the fisheries, and research techniques in this field. Pr., 101, 102. DeLacy

151. Propagation of Salmonoid Fishes. (5) Methods of hatching and rearing; collection and incubation of salmon eggs; design, structure, and maintenance of hatcheries, pond systems, and aquaria. Pr., 101, 102; Chem. 1-2 or 21-22. Donaldson

152. Nutrition of Fishes. (5) Feeding and efficiency of diets; food costs and supplies; basic nutritional requirements of fish; nutritional diseases of fish. Pr., 101, 102; Chem. 1-2 or 21-22. Donaldson

153. Freshwater Fisheries Management: Biological. (5) Creel census methods; stocking policies, lake poisoning;pond fish propagation; determination of the productive capacities of streams, lakes, and ponds and their suitability for particular kinds of fishes. Pr., 101, 102; Chem. 1-2 or 21-22. Donaldson

154. Communicable Diseases of Fishes. (5) Organisms causing diseases in fishes; prevention of fish diseases and treatments where known. Pr., 101, 102; Microbiology 101. Lynch

156. Age and Growth in Fishes. (3) Principles of growth; methods of determining age and rates of growth in fresh water and marine fishes. Pr., 101, 102. Van Cleve

157. Population Enumeration. (3) Methods of enumerating animal populations; availability; dominant age groups, gear selectivity. Pr., Math. 13; Zool. 1, 2; Fish. 156. Van Cleve

158. Population Dynamics. (3) Influence of natural and artificial factors on variation in abundance and yield from animal populations. Pr., Math. 13; Zool. 1, 2; Fish. 157. Van Cleve

180, 181. Introduction to the Fishing Industry. (3, 3) Lectures, demonstrations, and trips conducted by qualified persons from the industry on commercial fishing operations, marketing, processing, reduction, organization, and labor relations within the industry. Staff

182. World Fisheries. (3) Location, yield, methods of production, distribution, and marketing of the world's greatest fisheries. Pr., none. Chapman

183. Commercial Fisheries Management. (3) Conservation, regulation, and utilization of fish and shell fish populations. Pr., none. Chapman

184. Canning and Curing of Fish. (5) Application of physical, chemical, and biological sciences to fish and shellfish preservation; processing engineering, quality control, commercial methods. Pr., Chem. 132; Microbiology 101. Hastings

185. Refrigeration of Fish. (5) Application of refrigeration to processing and marketing of fishery products; refrigeration engineering. Pr., Chem. 132; Microbiology 101. Hastings

186. Preparation of Fish By-products. (5) Production of fish by-products, industrial oils, meals, and pharmaceutical products; utilization of fish wastes. Pr., Chem. 132; Microbiology 101. Hastings

190. Elementary Research. (3 per qtr.; maximum total, 9) Permission of staff. Individual research within the School of Fisheries or on-the-job training in governmental or industrial fisheries organization. Pr., permission. Staff

195. Introduction to Fisheries Literature. (2 per qtr.; maximum total, 6) Directed training in searching bibliographic sources. Six hours credit required of all fisheries majors. Pr., 15 credits in fisheries. Staff

Courses for Graduates Only

201. On-the-job Training. (3 per qtr.; maximum total, 9) Guided on-the-job training in governmental or industrial fisheries organizations. Permission. Staff

205. Graduate Seminar. (2 per qtr.; maximum total, 6) Six credits required of all graduates. Training in methods of searching fisheries literature. Staff

304. Research. Maximum total credit: for Master of Science degree, 3 credits; for Doctor of Philosophy degree, 10 credits. Staff

Not offered in 1949-1950: 160, Freshwater Fisheries Management: Hydraulic; 161, Freshwater Fisheries Management: Water Uses.

FORESTRY AND LUMBERING

Professors Marckworth, Grondal, Pearce; Associate Professors Erickson, Robertson, Schrader; Assistant Professors Brockman, Haddock, Orell; Instructors Covington, Gessell, Stenzel; Associate Baker

1a, 1b. Dendrology. (3, 3) Identification, classification, distribution of the trees of North America. Pr., Bot. 17. Brockman

3. Development of Forestry. (3) Orientation course required of all freshmen. Orell

4. Forest Fire Protection. (3) Factors influencing their spread, methods of presuppression, detection, and suppression. Orell

5. First Aid to the Injured. (2)

6. General Forestry. (3) For nonmajors. Brockman

8, 9. Forestry Problems. (2, 3) Methods of attack, emphasizing accuracy, analysis, and interpretation of forestry data. Pr., Math. 4. Orell

15. General Lumbering. (5) Comparative methods in different regions of the U. S. Prerequisite to all courses in logging and milling. Pr., 1a, 1b. Pearce

40. Silviculture. (2) Field studies and nursery practice. Given at Pack Forest. Pr., 16. Haddock, Gessel, Covington

60. Forest Mensuration. (5) Theory of scaling, volume and taper tables, sample-plot methods, determination of contents of stands, growth, yield. Pr., 3, 8, Math. 4. Robertson, Stenzel

62. Field Problems in Forest Mensuration. (6) Given at Pack Forest. Pr., 1b, 60, G.E. 7. Stenzel

104. Timber Physics. (5) General mechanics, stresses, tests, theory of flexure, moisture and strength; mechanical properties of wood. Pr., 8, Physics 1 or 4. Schrader, Baker

105. Wood Preservation. (3) Classification and control of wood-destroying agencies; mechanical properties of treated wood. Pr., 111, Bot. 18. Erickson

106. Wood-preservation Laboratory. (2) Evaluation of preservatives; methods of testing and inspection of treated material. Must be preceded or accompanied by 105. Erickson

108. Timber Design. (3) Beams, columns, trusses, timber connectors and fastenings; design, fabrication, and erection of timber structures. Pr., 104. Schrader

109. Wood Technology. (4) Identification, taxonomy, physical and chemical properties of wood. Pr., 1a, 1b, Physics 3 or 6, 10 credits in chemistry, Bot. 17. Erickson

111. Wood Structure. (3) Identification, xylotomy, and elementary microtechnique. Pr., 109. Erickson

115. Forest Protection. (3) Forestry practice in the control of insect attacks. Pr., 4. Brockman

119. Forest Policy and Administration. (3) Development of forest policies; forest laws. Pr., senior standing. Marckworth

121. Silvics. (3) Relation of trees and forests to soil, moisture, light, and temperature; forest ecology. Pr., 1b, 3, Bot. 19. Haddock

122. Silvicultural Methods. (3) Type and site classification; intermediate and final cuttings; natural and artificial regeneration. Pr., 40, 121. Haddock

123. Application of Silvicultural Methods. (3) The application of silvicultural methods in the forest regions of the United States. Haddock

124. Forest Fire Control. (3) Presuppression, suppression, training methods, analysis of protection facilities, proper methods of slash disposal and hazard removal, fire behavior, and organization for large fires. Orell

125. Elements of Silviculture. (3) The natural basis of silviculture; methods of controlling growth and reproduction of forests. For forest products majors only. Pr., Bot. 19, For. 1a, 1b, Geol. 115. Haddock

130. General Forest Soils. (3) The physical, chemical, biological, and profile characteristics of soils as related to soil formation. Soil classification and soils of the United States. Three field trips required. Pr., Bot. 19, Chem. 2 or 22, Geol. 115, Physics 1 or 4, Math. 4. Gessel

131. Advanced Forest Soils. (3) Relations of soils to plant growth. Laboratory study of those physical, chemical, and biological properties of soils affecting plants. Pr., 130. Gessel

140. Construction. (4) Roads, trails, wood bridges, telephone lines; land clearing; design of wood structures. Pr., 104, G.E. 7. Pearce

151. Forest Economics and Finance. (5) Position of forests in the economic structure; cost of growing timber; valuation of land for forest production. Pr., 60, E.B. 3 or 4. Robertson

152. Forest Management. (5) Sustained-yield management; forest working plans. Pr., 151. Robertson

154. Wild-life Management. (3) Interrelations between forests and wild life; life histories and habits of animals involved. Pr., 3. Brockman

155. Range Management. (3) Fundamentals of range management; the interrelations of plants, animals, and man. Methods and economics of proper management. Two Saturday field trips required. Enrollment by permission of the instructor. Pr., Bot. 17, 18, 19. Gessel

156. Forest Recreation. (3) Recreational needs, values, resources, and objectives; planning and development of outdoor recreational resources. Pr., 3 or 6. Brockman

157. Forest-products Industries. (3) Secondary forest industries; production and marketing of forest products other than lumber, plywood, and pulp. Pr., 15. Erickson

158. Forest Utilization. (5) Secondary and derived forest products. Pr., 15. Erickson

159. Plywood, Lamination, and Glues. (4) Manufacture of plywood and laminated wood; glues and their proper employment; utilization of glued wood products. Pr., 104, 157, 183. Schrader

160, 161, 162. Undergraduate Studies. (1 to 5 ea. qtr.) Enables students to prepare themselves for work in fields for which there is not sufficient demand to warrant the organization of regular classes. Instructor assigned according to nature of work.

164, 165, 166, 167. Senior Management Field Trip. 5, 5, 4, 2) 164: Surveys; 165: Inventory; 166: Studies; 167: Report. The courses lead to development of a working plan for a large operation. Robertson

170. Logging Safety. (2) Frequency and cost of accidents; methods of accident prevention. Pr., senior standing. Pearce

171. Forest Geography. (3) Economic geography of the forest regions of the world. Pr., senior standing. Grondal

182. Lumber Grading. (2) Study and practice of regional grading rule and American lumber standards of sizes and patterns. Pr., 15, 104, 109. Schrader

183. Milling. (5) Organization, planning, operation, and administration of timber conversion plants. Pr., 15, 104, 157 or 158, M.E. 82. Grondal

184. Manufacturing Problems. (5) Lumber-producing regions; economics and geography of utilization; selling and distribution of lumber; financing methods. Pr., 183, B.A. 62. Schrader

185. Forest Engineering. (5) Logging plans and costs; correlation of logging-engineering methods with condition of stand, topography, forest management, etc. Pr., senior standing. Pearce

186. Logging Engineering. (5) Machinery, equipment, and problems. Pr., 185. Pearce

188. Theory and Practice of Kiln Drying. (3) Wood-liquid relationships and hygrometry; application of gas laws. Problems in the design of dry kilns. Pr., 111, 157, or 158. Grondal

189. Wood Pulp. (5) Design of waste conversion plants; wood-pulp manufacture. Pr., 188. Grondal

190. Microtechnique. (3) Preparation, sectioning, staining, and mounting of woody tissues and fibers. Pr., 111. Grondal

191, 192, 193, 194. Senior Logging-engineering Field Trip. (3, 5, 5, 3) 191: Logging plans; 192: topographic and timber surveys; 193: road location surveys; 194: logging cost analysis. Development of a complete logging plan and cost analysis in a large operation. Pr., 186. Pearce

Courses for Graduates Only

203. Advanced Wood Preservation. (3) Theory of penetrance; design of treating plants. Fire proofing and fire-proofing compounds. Pr., 105, 106. Grondal

204. Forest-management Plans. (3 to 5 ea. qtr.) Pr., 167. Robertson

208. Graduate Seminar. (1, 1, 1) Required of graduate students. Staff

210, 211, 212. Graduate Studies. (2 to 5 ea. qtr.) In fields for which there is not sufficient demand to organize regular courses.

220. Advanced Forest Engineering. (5) Logging management, cost analyses, stumpage and logging appraisal, financial reports. Pr., 187. Pearce

221. Forest History and Policy. (3) Forestry policy of the U.S.; the rise of forestry abroad. Marckworth

300. Research. (+)

GENERAL LITERATURE

(See page 231.)

GENERAL STUDIES

Advisory Committee: H. B. Densmore (Greek), Chairman; D. E. Emerson (History); J. R. Huber (Economics); Pauline Johnson (Art); E. C. Lingafelter (Chemistry); Dixy L. Ray (Zoology); Frank Williston (Far Eastern)

151. Sources of the Modern Cultural Crisis. (2 to 6) Individual reading to be assigned by members of the interdepartmental staff. May be repeated in various fields in the same or successive quarters. Primarily for upper-division students. Pr., permission. Interdepartmental Staff

155-156. Analysis of the Modern Cultural Crisis. (3-3) Economic, psychological, scientific and technological, artistic, moral, religious aspects; essential conflicts; the problem of synthesis. For seniors; juniors by permission. Interdepartmental Staff

191. Supervised Study in Selected Fields. (†) May be repeated to maximum 6 credits. Pr., permission.

193. Thesis. (1-5) Pr., permission.

Not offered in 1949-1950: 21-22, American Social Trends.

GEOGRAPHY

Professor H. H. Martin; Associate Professors Earle, Williams; Assistant Professors Lawton, Sherman; Instructor Marts; Acting Instructors Rankin, Tennant; Acting Associates Arbingast, Chapman, Nishi.

1. Survey of World Geography. (5) World regions; man's relation to his habitat. Not open to students who have had 7 or 70. Lawton, Sherman

2. Physical Geography. (5) Land forms; soils; waters; mineral products; topographic maps. Chapman

7. Economic Geography. (5) Regions and resources; factors locating industries; commodities in international trade. Not open to students who have had 1 or 70. Martin, Staff

11. Weather and Climate. (5) World distribution of temperature, pressure, winds, precipitation. Weather maps. Not open to students who have had Meteorol. 1. Sherman

15. Mountain Geography. (2) Highland areas of the world, agriculture, pastoral, and industrial; mountain communities; recreational values; barrier and boundary theories. Marts

70. World Geography. (5) Economic-political; for journalism students. Not open to students who have had 1 or 7. Martin, Staff

101. World Regional Geography. (5) Same as 1, but with additional work. Not open to those who have had 1, 7, or 70. Pr., junior standing. Lawton, Tennant

102. Geography of the United States. (5) Regional and industrial. Pr., 1, 7, or junior standing. Marts, Rankin

103. Geography of Asia. (5) Countries and natural regions; resources; population; transportation; trade. Pr., 1, 7, or permission. Earle

104. Geography of Europe. (5) Countries and regions; manufacturing; commercial relationships. Pr., 1, 7, or permission. Martin, Williams

105. Geography of South America. (5) Regions; resources, economic activities, and relations. Pr., 1, 7, or permission.

106. Geography of Africa. (5) Colonization and development. Resources; plantation agriculture; tropical problems. Pr., 1, 7, or permission. Earle

107. Geography of Australia and New Zealand. (5) Colonization and development; land use; mining; industry. Pr., 1, 7, or permission. Lawton

108. Geography of Canada and Alaska. (3) Regions, resources, economic and social development; northern settlement. Pr., 1, 7, or permission. Marts
109. Geography of Caribbean America. (5) Economic and culture regions; peoples and politics. Pr., 1, 7, or permission.
110. Resources of the Pacific Northwest. (2) Rural and urban development; industry; regional problems. Marts, Rankin
121. Climates of the Continents. (5) Climatic types and their geographic distribution. Pr., 11 or permission. Lawton
125. Geographic Background of American History. (3) The role of geography in settlement and development. Martin
132. Islands of the Pacific. (5) Climate, resources, peoples, colonial problems. Pr., 1, 7, or permission. Earle
133. Geography of the U. S. S. R. (3) Agriculture, resources, industrial development; national planning. Pr., 1, 7, or permission. Williams
140. Geography in the Social Studies. (2) Pr., 10 credits in geography, or permission.
155. Influences of Geographic Environment. (5) Theory of occupance; urbanization; human adjustment. Pr., 20 credits of geography, or permission. Earle
160. Cartography. (5) Map projections, symbols, scales, sketch mapping, block diagrams. Williams, Sherman
161. Intermediate Cartography. (3) Williams, Sherman
162. Advanced Cartography. (3) Pr., 160. Williams, Sherman
170. Conservation of Natural Resources. (5) Public policy; land reclamation; resource utilization. Sherman
171. Geography of China. (3) Regional divisions; agriculture, home industry, the industrial pattern; village and city development. Pr., 103 or permission.
175. Political Geography. (3) Geographic basis of national and international problems. Pr., 10 credits of geography, or permission. Williams
177. Urban Geography. (3) Major cities of U.S. Pr., junior standing. Martin
179J. Australia: Its Peoples, Environment, and Institutions. (5) Joint course with Anthropology and History. Lawton
195. Readings in Geography. (†) Pr., permission. Staff
199. Preseminar in Geography. (3) Research methods; presentation of paper. Pr., permission. Martin

Teachers' Course in Geography. (See Educ. 75-O.)

Courses for Graduates Only

200. Geographic Theory. (5) Earle
201. Seminar in Source Materials. (3) Earle, Williams
202. Seminar: Writing and Critique. (3) Martin
203. Seminar in Asia. (3) Earle
204. Seminar in Europe. (3) Martin, Williams
205. Seminar in Latin America. (3)
207. World Resources and Industries. (†) Staff
213. Seminar on China. (3)
215. Seminar on Japan. (3) Martin, Earle
217. Seminar on Southeast Asia. (3) Earle
220. Land Utilization. (†) Sherman, Lawton
255. History and Theory of Geography. (†) Earle
295. Readings and Conferences. (†) Staff
300. Research. (†) Staff

GEOLOGY

Professors Goodspeed, Weaver, Fuller, Mackin; Associate Professors Barksdale, Coombs, Misch, Wheeler; Assistant Professor Vesanen; Acting Instructors Willis, Scott; Acting Associate Oles

1. Survey of Geology. (5) Coombs, Barksdale, Oles
2. Geology in World Affairs. (5) Geological occurrence, world distribution and production of coal, petroleum, and the important industrial materials. Pr., 1 or 5. Barksdale
3. Earth History. (5) Geology from a chronological standpoint including the elements of stratigraphy and paleontology. Pr., 1 or 5. Scott
5. Rocks and Minerals. (5) Pr., high school chemistry. Goodspeed
6. Elements of Physiography. (5) Processes and agencies affecting the earth's surface; relation of topography to structure, etc. Pr., 1 or 5. Mackin
7. Historical Geology. (5) Origin and evolution of the earth, with emphasis on the general history of North America. Pr., 5 and 6, or permission. Wheeler

†To be arranged.

8. Structural Geology. (5) Interpretation of rock structures and their genesis. Pr., 5, 6, 7; G.E. 1, 2, 3. Barksdale
10. Engineering Geology. (5) Elements of geology for civil engineers. Pr., Civil Engineering or permission. Mackin
100. History of Geology. (3) Required of all majors in geology. Pr., 15 credits in geology. Barksdale
105. Rocks and Minerals. (5) Same as 5, but with additional work. Pr., high school chemistry, junior standing. Goodspeed
106. Elements of Physiography. (5) Same as 6, but with additional work. Pr., 1 or 5, junior standing. Mackin
107. Historical Geology. (5) Same as 7, but with additional work. Pr., 5 credits in geology, junior standing. Wheeler
108. Structural Geology. (5) Same as 8, but with additional work. Pr., 5, 6, 7; G.E. 1, 2, 3. Barksdale
110. Engineering Geology. (5) Elements of geology for civil engineers. Same as 10, but with additional work. Pr., junior standing. Mackin
*112. Physiography of Eastern United States. (5) Pr., 5, 6, 7. Mackin
113. Physiography of Western United States. (5) Pr., as for 112. Mackin
114. Map Interpretation: Constructional Landforms. (5) Pr., 5, 6, 7. Mackin
115. Soils and Water Resources. (3) Basic physical geology in relation to soils and water resources. Primarily for Foresters and Sanitarians. Wheeler
116. Glacial Geology. (5) Pr., 5 and 6. Mackin
121. Mineralogy. (5) Determinative crystallography and blowpipe analysis. Pr., 5, and high school chemistry. Willis
123. Optical Mineralogy. (5) Petrographic microscope and recognition of common minerals in thin section. Pr., 5, 121 (except for upper-division chemistry students). Coombs
124. Petrography and Petrology. (5) Systematic study of rocks with the petrographic microscope. Pr., 123. Coombs
125. Petrography and Petrology. (5) Metamorphic rocks, petrogenesis. Pr., 124. Misch
126. Sedimentary Petrography. (3) Correlation of sedimentary rocks by their mineral constituents. Pr., 124. Willis
127. Ore Deposits. (5) Their form, structure, mineralogy, petrology, and mode of origin. Pr., 121, 124. Goodspeed
129. Advanced Ore Deposits. (3) Pr., 127. Goodspeed
130. General Paleontology. (5) Systematic study of fossils. Pr., 7, or permission. Weaver
131. Stratigraphy. (5) Sedimentation and facies; rock and time units; evaluation of boundaries; principles of correlation. Pr., 5, 6, 7; suggested 130/132. Wheeler
132. Invertebrate Paleontology. (5) Pr., 7. Weaver
*133. Mesozoic Geology. (5) From a world standpoint with special emphasis upon Europe. Pr., 130, 132. Weaver
134. Tertiary Geology. (5) With special emphasis upon Europe and correlation with North and South America. Pr., 130, 132. Weaver
137. Tertiary Faunas of Washington. (5) Pr., 130, 132. Weaver
143. Advanced Structural Geology. (5) Pr., 8 or 108. Misch
144. Field Methods. (5) Geologic and topographic surveying and recording. Pr., 8 or 108; G.E. 21. Barksdale
150. Elements of Seismology. (5) Pr., senior standing in geology. Vesanen
181. Preparation of Geologic Reports and Publications. (3) Pr., senior in geology. Coombs
190. Undergraduate Thesis. (5) Thesis must be submitted at least one month before graduation. Pr., senior in geology.

Course Open to Approved Seniors and Graduates

200. Advanced or Field Work in General Geology. (†) Open to advanced undergraduates upon permission.

An approved summer field course or approved field experience is a requirement for all advanced degrees in geology.

Courses for Graduates Only

Two modern foreign languages are necessary for graduate work in geology, but only one foreign language is required for the master's degree.

201. Advanced Petrography and Petrology of Igneous Rocks. (†) Goodspeed
202. Advanced Petrography and Petrology of Metamorphic Rocks. (†) Goodspeed, Misch
203. Advanced Petrography and Petrology of Sedimentary Rocks. (†) Coombs
312. Advanced Studies, Research or Field Work in Physiography. (†) Mackin
320. Advanced or Research Work in Mineralogy, Petrography, and Petrology. (†) Goodspeed, Coombs, Misch
327. Advanced or Research Work in Economic Geology. (†) Goodspeed, Coombs

†To be arranged.

330. Advanced or Research Work in Paleontology and Stratigraphy. (†) Weaver, Wheeler
340. Advanced Studies or Research in Structural Geology. (†) Barksdale, Misch
* Not offered in 1949-50.

GERMANIC LANGUAGES AND LITERATURE

Professors Vail, Eckelman, Lauer, Meisnest; Associate Professors Meyer, Sauerlander; Assistant Professors Ankele, Reed, Schertel, Wesner, Wilkie; Instructors Kahn, Jackson, Richeimer, Sommerfeld

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 130's.

Credit is allowed for any quarter in any course except German 1-2.

1-2. First Year. (5-5)
3. First-year Reading. (5) Pr., 1-2 or one year of high school German.
1S-2S, 3S. First-year Speaking German. (5-5, 5)
1R-2R. First-year Reading German. (5-5)
1X, 2X. First-year Intensive Reading. (10, 10)
4. Second-year Reading. (5) Pr., 3 or two years of high school German.
5. Second-year Reading. (3) Pr., as for 4; not open to those who have had 4.
6. Second-year Reading. (2) Pr., as for 4; not open to those who have had 4.
7. Second-year Grammar Review. (3) Pr., 3, or 2 years high school German. Wesner
10. Advanced Second-year Reading. (3) Pr., 4, 5, or 6.
30. Conversation Based on Rapid Reading. (3) For students interested primarily in acquiring a speaking knowledge. Pr., 4, 5, or 6. Sauerlander, Sommerfeld
60. Lower-division Scientific German. (3) Pr., 4, 5, or 6. Staff
113, 114, 115. Upper-division Scientific German. (2 or 3 ea. qtr.) Each student reports on reading in his own field in weekly conferences. Pr., 60, or equivalent. Schertel
116. Upper-division Scientific German for Premedics. (3) Pr., as for 113. Schertel
117, 118, 119. Grammar and Conversation. (2, 2, 2) Primarily for majors and minors. The materials used in this course aim not merely at the increase in the ability to speak, write, and understand German, but also to broaden the student's understanding of the culture of the German-speaking countries. Open only to juniors. Pr., 8 credits of second-year German including German 7. German 30 is recommended, but not required as a prerequisite to this course.
120, 121, 122. Grammar and Composition. (2, 2, 2) Primarily for majors and minors. Open only to seniors. Pr., completion of German 117, 118, 119. Vail, Meyer, Schertel
128. Phonetics. (2) Speech sounds, stage pronunciation, phonetic transcription. Meyer, Reed
129. History of the German Language. (5) From early Germanic to the present day. Open to senior and graduate majors and minors, and to junior majors. Meyer, Reed
130, 131. Introduction to the Classical Period. (3, 3) Lessing, Goethe, and Schiller. Biographical studies. Pr., 8 credits of second-year German or equivalent. Ankele
132. Introduction to the German Novelle. (3) Representative writers, such as Keller, Meyer, and Storm; theory of the *Novelle*. Pr., as for 130. Sauerlander
143, 144. Naturalism, Expressionism, and Twentieth-century Realism. (3, 3) Pr., 130 or equivalent.
168. Schiller's Historical Dramas. (3) Pr., 130 or equivalent. Vail
180, 181, 182. Nineteenth-century Literature. (3, 3, 3) Pr., 130 or equivalent. Sommerfeld
198. Studies in German Philology. (1 to 5) Pr., 130 or equivalent. Sommerfeld
199. Studies in German Literature. (1 to 5) Pr., 130 or equivalent.
Teachers' Course in German. (See Educ. 75L.)

Courses in English Translation

No knowledge of German required. Open to all students.

101. German Literature of the Nineteenth Century. (3) Sommerfeld
102. Goethe. (3) Sauerlander
104. Thomas Mann. (3) Conflicting tendencies in German thought and letters during the 20th century; social and economic backgrounds. Schertel

Courses for Graduates Only

The following graduate courses are regularly offered by the department. Students must consult with the executive officer of the department and secure permission to register for any of the courses listed below.

†To be arranged.

Literature Courses

200. Bibliography and Methodology. (2) Required of all majors and Ph.D. minors.
210. Literature of the Middle Ages. (5)
211. Reformation and Renaissance. (3)
212. Baroque. (3)
213. Eighteenth-century Movements. (3)
214. Survey of the Classical Period. (3)
215. Goethe's Leben und Werke 1775-1788. (4)
216. Goethe im Zeitalter der Vollendung. (4)
221. Schiller. (4)
222. Lessing. (3)
230. The Romantic Movement. (4)
231. The Literature of the Mid-nineteenth Century. (4)
232. The Literature of the Later Nineteenth Century. (4)
235, 236. The Literature of the Twentieth Century. (3, 3)
240. History of the Novel. (3)
241. History of the German Drama. (3)
290, 291, 292. Seminar in Literary History. (1 to 5 ea. qtr.)

Philology Courses

201, 202, 203. Advanced Syntax and Synonymy. (2, 2, 2) Required of all majors and minors
204. Introduction to Linguistics. (3)
250. Middle High German. (5)
251. Middle High German Literature in the Original. (5)
255. Gothic. (5)
256. Old High German. (5)
257. Old Saxon. (5)
260. Modern Dialects. (3)
270. Sanskrit. (3-5)
295, 296, 297. Seminar in Germanic Philology. (1 to 5 ea. qtr.)

Not offered in 1949-1950: 1X, 2X, First-year Intensive Reading; 100, Masterpieces of German Literature; 149, The German Lyric; 160, Lessing's Life and Dramatic Works; 162, Goethe, The Early Years; 163, Goethe, Life and Works 1775-1788; 166, Goethe's *Faust I;* 167, Goethe's *Faust II;* 183, 184, 185, History of German Literature.

HISTORY

Professors Holt, Costigan, Levy, Lucas, Savelle; Associate Professors Dobie, Gates, Katz; Assistant Professors Emerson, Lytle

1. Medieval European History. (5) The history of Europe from the disintegration of the Roman Empire to 1500 as the evolution of the basic values and assumptions of Western civilization. Emphasis is placed upon the aspects of this history which led to the development of law, the maintenance of order, and the growth of ideas with their expression in political, economic, and social institutions and in literature and art. Dobie, Katz, Lytle
2. Modern European History. (5) Political, social, economic, and cultural history of Europe from 1500 to the present time, including evolution of nationalism, democracy, and imperialism, and their interrelation with the results of the industrial revolution. Dobie, Emerson, Lytle

5-6. English Political and Social History. (5-5) By special work, upper-division students may receive upper-division credit. From earliest times down to the present day. Emphasis is chiefly on political and social developments, with consideration also of general cultural interest. The origins in English history of American political institutions and social patterns are also stressed. Costigan

7. Survey of the History of the United States. (5) By special work, upper-division students may receive upper-division credit. Supplies the knowledge of American history which any intelligent and educated American citizen should have. Object is to make the student aware of his heritage of the past and more intelligently conscious of the present. Gates, Holt, Savelle

72-73. Ancient History. (5-5) By special work, upper-division students may receive upper-division credit. Ancient Near East, Greece, and Rome, with emphasis on political, social, economic, and cultural development. Special attention to elements of ancient civilization contributing most vitally to the civilization of the medieval and the modern world. Katz

104. The Roman Empire. (3) A study of the political, social, economic, and cultural history, with special emphasis on the decline of ancient civilization. Katz

106. English Constitutional History. (5) The development of legal and governmental institutions of the English people to the present time. Pr., 5-6. Costigan

110. The Byzantine Empire. (5) A study of the political, institutional, and cultural history of the Eastern Roman Empire from the fourth to the fifteenth centuries. Special emphasis is given to the relations of the Byzantine Empire with the Latin West and the Slavic and Moslem worlds. Katz

114. Culture of the Renaissance. (5) Art, literature, politics, philosophy, science, and religion in Italy from 1300 to the death of Michelangelo. Lucas

115. The Reformation. (5) Political and religious crisis. Lutheranism, Zwinglianism, Anglicanism, Anabaptism, Calvinism, Catholic reform. Beginnings of Baroque art. Lucas

116J. Introduction to Roman Law. (5) Open to qualified sophomores. Levy

120. Medieval Civilization. (5) Art, letters, religion, science, and thought in Europe outside Italy from 1200 to 1500. Lucas

129. The French Revolution and Napoleonic Era. (5) Lytle

130. Europe, 1814-1870. (5) The reorganization of Europe after Napoleon's fall. The impact of the industrial revolution and the problems of a society in flux. Bureaucratization and politics in the European states. The revolutions of 1848 and the nationalist wars for the reorganization of Europe. Lytle

131. Europe, 1870-1914. (5) The impact of Bismarckian Germany. The significance of the Paris Commune. The Eastern Question and the Bismarckian organization of the European state system. Politics: people, bureaucracies, and parliaments. Problems of economic change. Imperialism and the problems of the state system. The moral crisis and its challenge to the West. The collapse of the Bismarckian system and the new alliances. Policies leading to war. Emerson

133J. Europe, 1914-1945. (5) Broad outline of history from World War I to the end of World War II. Levy

134. Germany from 1648 to 1914. (5) A survey of the politics and economics of the Germanies from the seventeenth century to the collapse of the Bismarckian empire. Emerson

140. Foundations of American Civilization. (5) A study of the history of the founding of Anglo-Saxon society in the western hemisphere, with particular attention to the earliest colonial establishments, the growth of a new culture, independence, and the organization of the American union. This is a basic course. Open to sophomores and up. Savelle

143. The Intellectual History of the United States. (5) A series of lectures and discussions devoted to the study of the development of the American "mind" from the beginnings to the present time. Pr., 7 or its equivalent. Savelle

145. History of the United States, 1829-1860. (5) A study of Jacksonian democracy and the patterns of political and economic sectionalism; westward expansion and the occupation of Texas and the Far West; the ante-bellum South; slavery, secession and the background of the Civil War. Gates

155. History of Canada. (5) A study of the struggle for unity and nationhood as determined by geographical conditions, by racial antagonism, by the impact of modern commercial and industrial society upon an old-world culture, and by pulls toward both Europe and the United States. Dobie

158. The United States in World Affairs, 1776-1865. (5) The relation of the United States to world politics and the balance of power will be studied as well as the historical events attending the major episodes in American foreign relations. Holt

159. The United States in World Affairs, 1865 to the Present. (5) A continuation of 158 into the period when the United States entered the balance of power as a major factor. Holt

164. History of Washington and the Pacific Northwest. (5) Exploration and settlement; economic development; growth of government and social institutions; the period of statehood. Gates

165. The Westward Movement. (5) Territorial and economic expansion of the United States from the Revolution to World War I; conditions affecting settlement and development of the West; political and social institutions; inter-regional relations. Gates

179J. Australia: Its Peoples, Environment, and Institutions. (5) An integrated study of geographic and cultural patterns, of economic and political development and its relations with the Commonwealth of Nations. Pr., 15 credits of Anthropology, Geography, or History. Davidson, Dobie, Lawton

180. History of the British Empire Since 1783. (5) Britain in India, Africa, and the Pacific. The acquisition of a new dependent empire as a phase of modern capitalism and the evolution of imperial policy from autocracy toward self-government and from laissez-faire toward economic planning. Dobie

183. England in the Nineteenth Century. (5) A study of political, social, economic, and cultural development. The Agrarian, Industrial, and French Revolutions; rise of parliamentary democracy, the Victorian age; thought from Utilitarianism to Fabianism; Irish Home Rule. Costigan

184. England in the Twentieth Century. (5) England from the Boer War to the Labor Government of 1945. Conservatism, liberalism, and socialism; England in two World Wars, Anglo-Irish relations, decline of British imperialism. Costigan

185. Modern Irish History. (5)

199. Individual Conference and Research. (1 to 5)

Courses for Graduates Only

201. Historiography: ancient, medieval, and early modern Europe. (5) Required of all graduate students majoring in history. Graduate students taking a minor in history may take either 201 or 202. Katz and Staff

202. Historiography: modern European and American. (5) Required of all graduate students majoring in history. Graduate students taking a minor in history may take either 201 or 202. Katz and Staff

Courses in Fields of Specializations

These courses are introductions to advanced study. They are designed to show how important historical conclusions have been reached, to suggest further research, and particularly to give bibliographical guidance to students in their preparation for the examination on the fields selected.

210.	Greek and Roman History. (5)	Katz
214.	Medieval and Renaissance History. (5)	Lucas
215.	English History. (5)	Costigan
216.	British Empire History. (5)	Dobie
221.	American History. (5)	Holt
222.	American History. (5)	Gates
223.	American History. (5)	Savelle
232.	Modern European History. (5)	Emerson
234.	Roman Law. (5)	Levy

Seminars

237-238-239.	Seminar in Ancient or Medieval History. (5-5-5)	Staff
240-241-242.	Seminar in Modern European History. (5-5-5)	Staff
243-244-245.	Seminar in American History. (5-5-5)	Staff
246-247-248.	Advanced Seminar. (†)	Staff
300.	Individual Research. (†)	Staff

Not offered in 1949-1950: 41-42, Latin-American History; 100, Greece in the Age of Pericles; 101, Alexander the Great and the Hellenistic Period; 103, The Roman Republic; 128, France from the Reformation to the French Revolution; 132, Modern Colonial Empires; 137, Germany, 1916-1945; 141, American Revolution and Confederation; 142, The Colonial Mind; 144, History of the United States, 1789-1829; 147, History of the Civil War and Reconstruction; 149, History of the United States, 1877-1920; 150, Twentieth-century America; 151, American Industrial Society; 157, The Diplomatic History of North America, 1492-1763; 181, The British Empire since 1783, British Commonwealth; 182, England in the Eighteenth Century; 189, History of New Zealand and Pacific Islands.

HOME ECONOMICS

Professors Rowntree, Denny, Payne, Terrell; Associate Professors Bliss, Dresslar; Assistant Professors Bonnell, Johnson, Johnston, McAdams, Obst, Warning; Instructors Parks, Rose, Smith, Wybourn; Acting Instructors Bogardus, Hosmer

7. Introduction to Home Economics. (1) Orientation; personal budgeting and account keeping. Educational needs of homemakers; opportunities in professional fields of home economics. Rowntree

9. Nutrition and Food Preparation. (5) For student nurses. Nutritive values. Meal planning for various periods in life. Bliss

12. Clothing Construction and Selection. (5) Analysis of student. Selection of clothing and accessories. Wardrobe inventory. Planning and construction of cotton or linen dresses. Obst, Warning, Wybourn

15. Food Preparation. (3) Cookery techniques presented in lecture-demonstrations followed by laboratory experience. Food selection, basic cookery, simple meal planning, service, and cost calculation. Dresslar

24. Textiles. (2) For nonmajors. Comparative study of staple fabrics in cotton, wool, and rayon. Weaves, yarns, fibers, dyes, finishes, textile tests. Denny

25. Textiles. (5) Fabrics for clothing, home furnishing, and industrial uses. Relation of raw materials, construction and finish to quality and cost. Identification of fibers, yarns, fabrics. Microscopic and chemical tests. Simple weaving problem. Economic development of textile industry. Denny

26. Institution Textiles. (3) Textile supplies for hospitals, hotels, and clubs. Specifications for quantity purchasing, laboratory testing of goods. Observation in the plant of marking, storage, laundry, and wear. Denny

41. Home Furnishing. (3) For nonmajors. Selection and arrangement of furniture. Furniture styles. Color harmony in floor coverings, backgrounds, and draperies. Table appointments and flower arrangement. Home furnishing budgets. Obst

83. Food and Nutrition. (5) For nonmajors. Food preparation and selection on the basis of nutritive and economic values to meet individual and family needs. Meal service. Bogardus, Rose

84. Clothing and Textiles. (5) For nonmajors. Construction using commercial patterns. Planning and selecting a wardrobe. Warning

101. Needlecraft. (2) Italian embroidery and its application to table and other household linens. History of lace. Pr., 12, Art 9. Payne

102. Needlecraft. (2) National and historic embroideries with application to modern use, in the home and in costume. Pr., 12, Art 9. Payne

104. Nutrition. (2) For nonmajors. Fundamentals of food, its digestion and metabolism. Food values and their conservation. Application of knowledge to health promotion in schools. Rowntree

†To be arranged.

105. **Diet in Health and Disease.** (3) For student nurses. Practical applications of nutrition principles to feeding problems and to dietary modifications necessitated by disease. Pr., 9, organic chemistry. Johnson

106. **Nutrition for Public Health Nurses.** (*) Johnson

107. **Nutrition.** (5) Chemistry of digestion and metabolism. Food values; human requirements and ways of meeting them at different cost levels. Pr., general chemistry. Rowntree

108. **Advanced Nutrition.** (3) Recent research on vitamins, minerals, amino acids and their interrelationships. Methods of utilizing knowledge in public health work and in teaching. Pr., 107, organic chemistry. Rowntree

109. **Managing Family Finances.** (3) For nonmajors. Planning the use of financial and other resources to further the goals of the family. Effect of social and economic conditions and policies on this planning. Johnston

112. **Costume Design and Construction.** (3) Flat pattern designing and wool techniques. Original muslin pattern made into wool dress. Study of clothing for children. Pr., 12, Art 9. Obst, Warning, Wybourn

113. **Costume Design and Construction.** (3) Design by draping. Study of clothing production at all price levels. Silk and rayon technique. Pr., 112. Payne

114. **Costume Design and Construction.** (3) Basic principles of coat and suit construction; comparative costs of ready-to-wear. Pr., 113. Payne

115. **Advanced Food Selection and Preparation.** (5; 2 credits for qualified transfer students.) Relation of science to cookery. Food preservation. Simple experimental cookery. Meal preparation and service; food budgeting and purchasing. Pr., 15, general chemistry. Dresslar

116. **Meal Planning and Preparation.** (3) Advanced study of factors involved in food marketing, preparing and serving nutritious and attractive meals for families on different economic levels. Pr., 108, 115. Rose

121. **Institution Food Preparation.** (5) Laboratory and institution practice in large-quantity food preparation and cost control. Pr., 116. Terrell, Smith

122. **Institution Food Purchasing.** (3) Market organization, buying procedures, payment and credit; food selection and care, and inspection of merchandise for those who plan to do institution buying. Pr., 116. Terrell

123. **Institution Management.** (3) Principles of organization, executive qualifications, characteristic responsibilities for an institution manager. Types of institutions, personnel administration, management controls, planning of work and equipment layout, budget analysis. Professional organizations and ethics presented from standpoint of managers of food service institutions. Open to students in institution administration or by permission. Terrell

124. **Institution Management.** (5) Food and food service accounting problems. Recording financial transactions; cost controls; profit and loss statements. Pr., 123. Terrell, Parks

126. **Demonstration Cookery.** (3) Techniques and methods adapted to teaching and business. Pr., 115. Dresslar

131. **Clothing Selection.** (2) Choice of clothing, emphasizing appropriateness to personality and occasion as well as judgment of quality and cost. No credit to those who take 12 or 84. Payne

132. **Costume Design by Draping.** (3) For art majors. Fabric used as medium to give better understanding of three dimensional aspect of clothing with consideration of texture and motion. No clothing construction. Pr., Art 11. Payne

133. **History of Costume.** (5) Relationship of fashion of each historic period to its esthetic and social background. National costume collection available for study. Source material for professional designers. Pr., 112, Art 169. Payne

141. **The House, Its Equipment and Management.** (3) The management of time, energy and equipment in the home as a factor in successful family living. Johnston

144. **Family Economics and Finances.** (5) Economic and social conditions affecting consumer, such as credit, marketing practices, taxation; managing family finances in relation to these conditions. Pr., Econ. 10. Johnston

145. **Family Relationships.** (3) Principles underlying good family relationships, wholesome adjustment of home to changing society. Rowntree

146. **Home Furnishing and Textiles.** (5) Economic and esthetic values; historic and modern furniture, pictures, rugs, tapestry, china, glass, silver; textile fabrics and their uses and care. Primarily for art majors. Obst

147. **Home Furnishing.** (5) Selection of furniture, fabrics, accessories, and colors appropriate to all types of homes. A brief history of furnishing shows contribution of the past and of different cultures. Hosmer

148. **Home-management House.** (3 for prospective teachers; 2 for all others) Residence in House with opportunity to apply principles of homemaking in money management, keeping of records, care of house, group relationships, food buying, preparation and service. Pr., junior or senior standing. Advance reservation required. Bliss

160. **Advanced Costume Design and Construction.** (5) Flat-pattern drafting, grading, and designing. Pr., 114, Art 169. Payne

161. **Advanced Costume Design and Construction.** (5) Advanced designing by draping, and custom work. Pr., 160. Payne

175. **Institution Equipment.** (3) Institution kitchens and serving units; routing of work; equipment selection, operation and care; repair and depreciation records. Pr., or parallel, 124. Terrell

* Not offered in 1949-1950.

181. Advanced Family Economics and Finances. (2) Study of source materials, government and other programs related to consumer. Pr., 109 or 144. May carry graduate credit. Johnston

187. Experimental Cookery. (3) Food experiments illustrating science applications. Subjective and objective testing of food. Pr., organic chemistry, 115, or permission. Dresslar

188. Advanced Textiles. (3) Tests for textile strength, sunfading, washing, weight, thread count, water repellency, quantitative analysis, microanalysis. Survey of developments in synthetics and finishes, distributive education, research centers, technical and trade organizations, legislation, standardization. Pr., Econ. 10. Denny

189. Hand Weaving. (2) Covers mechanism of looms, warping techniques, designing and weaving with various yarns. Survey of handwoven fabrics and contemporary designers. Broback

190. Child Nutrition and Care. (3) Study of physical, mental and emotional health of children. Experience with parents and children in Child Nutrition Service and Child Health Center. Pr., or parallel, 104 or 107. Rowntree, Wade

191. Diet Therapy. (3) Nutrition as curative and preventive factor in disease. Primarily Journal readings. Pr., 108. Johnson

195. Special Problem in Home Economics. (†) Some phase of teaching home economics in secondary schools. Pr., permission. May carry graduate credit. Staff

196, 197. Supervised Field Work. (7, 8) Twelve months practice and organized classwork for graduates in institution management and dietetics. An administrative dietitian internship approved by the American Dietetic Association. Incidental fee of $12.50 per quarter. Terrell

198. Historic Textiles. (3) Survey of fabrics through the centuries; their relation to political, religious, economic, and social life of the time. The collections in the department and at Seattle Art Museum furnish material for study. Pr., 25, 147, Art 9, 10, 11 or equivalent. Denny

Courses for Graduates Only

200. Readings in Food Selection and Preparation. (†) Recent development from professional literature. Dresslar

202. Home Economics Education. (†) Critical study of achievements, trends, functions, and relationships. McAdams

214. Readings in Nutrition. (†) Library research. Pr., 108 or equivalent. Rowntree, Johnson

245. Social and Economic Problems of the Consumer. (3-5) Family adjustment to differing social and economic conditions. Social and other legislation in relation to consumers. Interaction of production, distribution, and consumption of consumer goods. Pr., 144, 181, and permission. Johnston

300. Research. (†) Field of interest should be indicated by letter when registering. Pr., permission.
A. Costume Design. Payne
B. Institution Administration. Terrell
C. Nutrition. Johnson
D. Textiles. Denny
Thesis. (9)

JOURNALISM

Professors Everest, Benson, Christian, Jones, McKenzie; Associate Professors Frost, Kennedy, Mansfield; Assistant Professors Astel, Brier, Jermain; Acting Assistant Professor Ryan; Associates Blumenfeld, Mobl, Murton

51. Preliminary News Writing. (5) Structure of the news story, types of news leads, feature stories. Staff

84. Editorial Techniques. (3) Editing news copy, writing of cutlines and captions, headline writing, newspaper make-up. Pr., 51 or permission. Staff

90, 91, 92. Contemporary Affairs. (2, 2, 2) McKenzie

116. Propaganda as a Social and Political Force. (5) Development of propaganda and techniques in nineteenth and twentieth centuries. Emphasis on post-1914 period, and on international propaganda as it affects U. S. McKenzie

125. Principles of High School Journalism. (3) For teachers in high schools and junior colleges. Editorial, advertising, circulation, and mechanical production of school publications. Not open to students who have had Educ. 75J. Pr., 51, 84. Brier

130. Fundamentals of Advertising. (3) Display, attention, devices, media. Frost, Jones

131. Display Advertising. (3) Layouts and copy writing. Open only to majors in journalism or B.A. majors in advertising and marketing, and commercial art majors. Pr., 130 or B.A. 134. Jones

132. Advertising Typography. (3) Laboratory course in display advertising. Pr., 131. Jones

133. Advertising Campaigns and Media. (3) Steps involved in planning and preparing an advertising campaign. Each student will make layouts, write copy, and set up a budget for campaigns. Open only to students taking junior journalism advertising sequence, and to B.A. majors in advertising and marketing, and commercial art majors. Pr., 130 or B.A. 134. Jones

134. Advertising Regulation. (2) National, state, and city laws regulating advertising; provisions governing trade-marks; rulings of F. T. C., F. C. C., and other official bodies. Pr., or concurrent, 130 or B.A. 134. Jones

135. Radio Advertising. (3) Analysis of sound as an advertising medium; planning campaigns; costs and coverage; announcements and commercial copy writing; merchandising and audience tests.

†To be arranged.

136. Radio News Writing. (3) Techniques of gathering, writing, and editing news for presentation by radio; planning the news broadcast. Ryan

147, 148, 149. Fundamentals of Journalism. (5, 5, 5) Editorial sequence; reporting, contemporary affairs, social implications, editing, advertising, printing processes, business office, printing laboratory and photography laboratory. Advertising sequence: principles of advertising, laboratory techniques, editing, printing processes, business office, social implications, and regulation of advertising. Pr., junior standing and permission.
Everest, McKenzie, Jones, Benson, Christian, Frost

150, 151. Fundamentals of Journalism. (5, 5) Editorial sequence: history of journalism, contemporary affairs, daily editing, public relations, reporting, urban geography, and radio. Advertising sequence: copy writing, layout, selling techniques, social implications, printing laboratory, photography laboratory, and radio. Benson, Christian, Frost, Mansfield, Astel

152, 153, 154. Fundamentals of Journalism. (5, 5, 5) Editorial sequence: magazine article writing, contemporary affairs, reporting, editing, law of the press, and radio special events. Advertising sequences: advertising campaigns and media, advanced copy writing, advanced advertising laboratory, radio advertising, selling techniques, and public relations.
Everest, Frost, McKenzie, Christian, Mansfield

165. Public Relations. (3) The improvement of relations between business, the press, and the public, For upper-division students; for lower-division students, pr., permission. Christian

166. Problems in Public Relations. (2) Pr., 165 and permission.

171-172. Magazine and Feature Writing and Trade Journalism. (3-3) Jones

173, 174-175. Short Story Writing. (5, 5-5) Professional fiction writing for national magazines. Admission only to upper-division students with permission of the instructor. Mansfield

176. Problems in Magazine Article Writing. (3) Pr., permission.

181, 182, 183. Laboratory Work on University Daily. (2 to 5 ea. qtr.) Journalism majors or permission. Astel

190, 191. Editorial Problems. (2, 2) Pr., completion of Editorial Junior Journalism year.

192. Publishing Problems. (2) Pr., completion of Advertising Junior Journalism year.

199. Problems of Journalism. (2 to 5) Research and individual study. Upper-division students only. Staff

Courses for Graduates Only

201. Propaganda. (5) Study of the crystallization of public opinion and of propaganda techniques. Pr., 116, or permission. McKenzie

225, 226, 227. Graduate Seminar in Short Story Writing. (2 to 4 ea. qtr.) Advanced professional fiction writing for national magazines. Limited to eight students. Instructor's permission required. Mansfield

301. Research. (3 to 5) Staff

LAW

Professors Falknor, Gose, Green, Harsch, Levy, Martin, Nottelmann, Richards, Shattuck, Sholley, Taylor; Professors Emeriti Ayer, O'Bryan; Associate Professors Cross, Gallagher, Laube; Assistant Professors Hawley, Rutledge, Wollett; Lecturer Shefelman

First Year

All first-year subjects are required

100. Property I. S. (3) Bigelow, Cases and Other Materials on the Law of Personal Property, 3rd ed. Personal property including the law of finders, gifts, adverse possession, bailment, lien, fixtures, and emblements. Hawley, Cross

‡101. Contracts. A. (3-); W. (-4); S. (3) Shepherd, Cases on Contracts. A study of the formations, incidents and termination of contracts, including mutual assent, consideration, parol evidence rule, statute of frauds, assignments, beneficiaries, conditions, breach and remedies. Shattuck, Laube

‡102. Torts. A. (3-); W. (-4); S. (3) Seavey and Thurston, Cases on Torts. Intended interference with the person or tangible things; the wrong, the defenses; unintended interference with the person or tangible things: negligence, the extent of liability, effect of special relationships, contributory fault, liability without fault; interference with intangibles: misrepresentation, defamation, interference with advantageous relations. Richards

‡104. Property II. A.W. (3-3) McDougal and Haber, Property, Wealth, Land: Allocation, Planning, and Development. Real property including estates in land, waste, emblements, easements, licenses, concurrent ownership, and introductory future interests. Cross, Hawley

105. Criminal Law and Procedure. S. (4) Harno, Cases on Criminal Law, 2nd ed., and Green, Washington Materials on Criminal Law. A study of the origin and purposes of criminal law; the elements of criminal liability; mental states bearing upon criminal responsibility, such as negligence, specific intent, insanity and intoxication; solicitation; attempts; and a study of the major crimes. Green, Rutledge

112. Agency. W. (4) Mechem, Cases on the Law of Agency. A general study of the relative status, rights and liabilities of master, servant, principal, agent, and third person arising in consequence of the agency relationship, actual or apparent. Taylor, Gose

132. Legal Method. A. (5) Dowling, Patterson and Powell, Materials for Legal Method. Introduction to the study of law; nature and source of law, judicial systems, analysis and synthesis of cases, use of law books, statutory interpretation, comparison of statute and judge-made law. Gallagher, Green, Harsch, Rutledge

‡No examination for credit until completion of entire course.

Second Year

All second-year subjects are required

110. Sales. A. (4) Casebook to be announced. Transfer of the property interest in goods; subject matter, price and legal formalities; divided property interests; sellers' warranties; remedies of buyer and seller. Taylor

111. Wills. S. (3) Mechem and Atkinson, Cases on Wills and Administration, 2nd ed. The law of intestate succession, the making and revoking of wills, including testamentary capacity and inducement, the execution of wills, the integration of wills, testamentary character and intent, the revocation of wills, and the operation of wills as affected by subsequent events. Hawley

113. Domestic Relations. S. (3) Casebook to be announced. Marriage, divorce and annulment; the personal and economic relations of the spouses; and the effect of marriage on the ordinary rules relating to contracts torts, and crimes. Hawley

‡114. Equity. W. S. (4-4) Walsh, Cases on Equity. Nature of equitable jurisdiction, powers of equity courts, principles governing exercise of equitable powers, injunction against torts, specific performance of contracts, law of vendor and vendee, reformation and rescission for mistake, equitable servitudes on land and chattels. Nottelmann

‡115. Evidence. A. W. (4-4) McCormick, Cases on Evidence. Preparing and presenting evidence; examination of witnesses; admission and exclusion; competency of witnesses; privileges; relevancy; demonstrative evidence; writings; the hearsay rule and exceptions; burden of producing evidence, burden of persuasion, presumptions; judicial notice. Falknor

116. Bills and Notes. A. (4) Britton, Cases on Bills and Notes, 3rd ed. Requisites of negotiability; methods of transfer; holder in due course; equities and defenses; liability of parties. Taylor

‡119. Constitutional Law. A. W. S. (3-3-3) Sholley, Cases on Constitutional Law. A study of basic doctrines of American constitutional law as developed by the United States Supreme Court, considered historically, with special emphasis upon the contract, commerce, and due process clauses. Sholley

127. Code Pleading. W. (3) Cathcart and Howell. Cases on Code Pleading, supplemented by the Washington Code and Washington Cases. A study of the nature and function of the code; parties to the code action; general rules of pleading; the complaint; demurrers; the answer; and the reply. Green

Third Year

All third-year subjects are required

117. The Legal Profession. S. (3) Cheatham, Cases and Materials on the Legal Profession. Examination of the history, nature and purpose of law, courts, and the legal profession. Problems, obligations, and duties of the lawyer, with special attention to the practice of law, the work of the lawyer in his office and in court, the relationship between lawyer and client, standards and conduct, ethics of the legal profession, and the selection of judges. Shefelman

121. Administrative Law. S. (4) Gelhorn, Cases on Administrative Law. Legislatures, Courts, and administrative discretion. Investigation: contempt power; right to be heard, requisites of a fair hearing. Determination: deciding officers, sub-delegation; findings. Powers: types of action; effect of action. Judicial intervention: timeliness; scope; methods; effect. Promulgation of program: methods of disseminating information and communicating notice; informal dispositions, consent action. Rutledge

‡123. Property III. A. W. (3-3) Aigler, Bigelow and Powell, Cases on Property, Vols. 1 and 2. Study of covenants running with the land, adverse possession and prescription, types of conveyances, execution of deeds, descriptions in deeds, covenants for title, estoppel by deed, and recordation. Cross

‡126. Trusts. A. W. (3-3) Scott, Cases on Trusts, 2nd ed. Nature of a trust, its creation and elements; transfer of interest of beneficiary; resulting and constructive trusts; charitable trusts; administration of trusts; termination and modification; liabilities to and liabilities of third persons; business utilization of trust. Nottelmann

‡142. Trial and Appellate Practice. A. W. (3-3) Sunderland, Cases and Materials on Trial and Appellate Practice, 2nd ed., supplemented by Washington Code of Procedure and Washington Cases. Proceedings in the trial of a civil action from the discovery procedure prior to trial to the judgment. Discovery techniques; pre-trial hearings; continuances; selection of the jury; conduct of counsel; non-suits and directed verdicts; instructions; verdict; motion for new trial; and judgments. Appellate practice, including methods of review, parties, laying a foundation for review, transferring the case to the appellate court, record on appeal, assignment of errors, briefs, disposition of the case upon review. Each student must participate in the trial of a case in moot court. Green, Falknor, Gose

144. Probate Practice. S. (3) Mechem and Atkinson, Cases on Wills and Administration, 2nd ed., supplemented by the Washington Probate Code and Washington Cases. A study of the practice, procedure and substantive law involved in the probate of wills and the administration of decedents' estates. Each student is required to draft all papers necessary to carry a typical estate through the entire course of probate or administration and to participate in moot probate hearings conducted in accordance with the Probate Code of the State of Washington. Gose

‡145. Credit Transactions. A. W. (3-3) Shattuck, Washington Materials on Security Transactions, revised ed. 1947. A study of personal and property security including suretyship, accommodation parties and instruments, pledges, conditional sales, trust receipts, chattel mortgages, real property mortgages and security assignments of choses in action. Shattuck

‡149. Business Associations. W.S. (3-5) Ballantine and Lattin, Cases and Materials on Corporations; Mechem, Cases on Partnerships. A general study of the law of partnerships, corpora-

tions and related forms of business organizations with special attention devoted to the Uniform Partnership Act, the Uniform Limited Partnership Act, the Uniform Business Corporations Act and other applicable statute law of the State of Washington and to Washington cases. Gose

‡No examination for credit until completion of entire course.

‡No examination for credit until completion of entire course.

Fourth Year

Required Courses

118. Conflict of Laws. A. (5) Cheatham, Dowling, Goodrich and Griswold, Cases and Materials on Conflict of Laws. Domicile, jurisdiction of courts, substance and procedure, choice-of-law rules. Sholley

124. Community Property. A. (3) Mechem, Sholley, Luccock, Cases on Washington Law of Community Property. Nature and types of community property; management and control, liabilities, power of disposition; effect upon agreements and dissolution. Special emphasis upon Washington law. Laube

135. Legislation. W. S. (2-2) Read & MacDonald, Cases and Materials on Legislation. Formulation of legislative policy; legislative organization and procedure; statutes and their interpretation. Harsch

146. Taxation. A. (5) Griswold, Cases on Federal Taxation, 2nd ed. Federal estate, gift, income and miscellaneous taxes; federal tax procedure. Harsch

199. Seminars and Individual Research Courses. Ten credits required of the following one-quarter seminars, each carrying 5 credits.

199A. Property Law. A. W. (2-3) Selected individual research problems in the field of real and personal property. The student is required to submit a final paper embodying the results of his research, as well as make reports and participate in collective discussion at the seminar meetings. Hawley

199C. Social Legislation. W. S. (2-3) Workmen's compensation, unemployment compensation. Fair Labor Standards Act. Sholley

199D. Law of Income Taxation. A. W. (2-3) Harsch

199E. Administrative Law. A. W. (2-3) Rutledge

199F. Corporation Practice. A. (5) Problems which must be dealt with by the practicing lawyer in forming corporations and in legal supervision of the conduct of their internal affairs. Individual research problems in the field, including forms of capital structure, corporate finance and general concepts of corporate accounting. Each student must prepare a complete set of corporate papers covering the typical problems which may arise from the time of organization to dissolution. Gose

199G. Comparative Law. W. (5) Levy

199H. Government Regulation of Business. A. (5) Selected problems in the judicial and administrative regulation of unfair competition. Rutledge

199I. Civil and Criminal Procedure. A. W. (2-3) Falknor

199N. Labor Relations. A. W. (2-3) Wollett

199P. Estate Planning. W. S. (2-3) Laube

199R. Labor Law. A. (5); S. (5) Selected problems assigned for investigation, report, group discussion and submission of written paper in final form. Nottelmann, Wollett

Elective Fourth-Year Courses

‡122. International Law. A. W. (3-3) Briggs, The Law of Nations. Martin

128. Damages. S. (3) Shattuck

136. Insurance. W. (4) Vance, Cases on Insurance. 3rd ed. Scope and function of insurance; insurable interest; formation of the insurance relation; ascertainment and control of risk; waiver and estoppel; the respective interests of the beneficiary, insured, insurer, assignee and creditor; construction of the policy. Taylor

138. Future Interests. S. (4) Leach, Cases on Future Interests, 2nd ed. Study of types of future interests in property and characteristic problems, construction of limitations creating future interests, powers of appointment, the rule against perpetuities, and restraints on alienation. Cross

139. Administration of Debtors' Estates. S. (4) Hanna & McLaughlin, Creditors' Rights, 3rd ed. A study of the administration, liquidation and reorganization of insolvent enterprises; the equity receivership; the various acts of bankruptcy, including fraudulent conveyances, preferences, legal liens, and general assignments; adjudication of bankruptcy; administration of the insolvent estate, the filing and payment of claims, priorities and liens; discharge, rehabilitation and corporate reorganization. Taylor

147. Municipal Corporations. A. (4) Tooke, Cases on Municipal Corporations, 2nd ed. A study of the law governing the nature, organization, powers, and duties of local governmental units, including both municipal and quasi-municipal corporations and their relation to the state, with special attention to the problems of police power, revenue, indebtedness, property rights, city planning and zoning, and liability in contract, quasi-contract and tort. Shefelman

151. Labor Law. W. (4) Casebook to be announced. Common law theories of trade-union liability; the anti-injunction statutes; the Sherman Act; picketing and the Constitution; the National Labor Relations Act of 1935; the collective agreement; internal problems of trade unions; the Labor Management Relations Act of 1947. Wollett

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‡No examination for credit until completion of entire course.

152. **Modern Civil Law.** A. (4) Textbook to be announced. Levy

199K. **Research Problems in Law.** A.W.S. (1-3 each quarter) Qualified third and fourth-year students may, with the consent of a member of the law faculty and the Dean of the Law School, receive from one to three credits for individual research in any of the major fields covered by the curriculum. Staff

Not offered in 1949-1950: 125, Trade Regulations; 129, Drafting of Legal Instruments; 131, Restitution; 133, Public Utilities; 134, Federal Jurisdiction and Procedure; 141, Admiralty; 190, Roman Law; 199B, Advanced Problems in Security; 199L, Corporate Reorganization; and 199M, Advanced Problems in Torts.

LIBERAL ARTS

Instructor Lutey

1. **Introduction to Modern Thought.** (5) Man's place in the universe; cosmic origins; 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. Lutey

11. **Introduction to the Study of the Fine Arts.** (5) The appreciation of masterpieces of architecture, painting, sculpture, and music; 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. Lutey

Not offered 1949-1950: 114, 115, 116, Realism in Philosophy, Literature, and the Arts.

LIBRARIANSHIP

Associate Professor Gitler; Professor H. C. Bauer; Associate Professor Gallagher; Assistant Professors Bevis, Boughton, Groves, Turner; Associate Stokke

All-University Courseθ

1. **The Use of Books and Libraries.** A.W.S. (2) Lectures and discussions with assigned problems illustrating the use of libraries, general reference materials and aids, and reference books of various subject fields. Gitler, Staff

Preprofessional Coursesξ

ξ151. **Children's Books.** S. (2) An introduction to the field of children's books, with special emphasis on their selection and application to the school curriculum and to the child's recreational reading interests. For teacher-librarians. Groves

ξ161. **Reference for High School Libraries.** A.S. (3) Dictionaries, encyclopedias, and other outstanding reference books are examined, with emphasis on the factors that make them useful in a school library. Many basic books in the various subject fields are also studied to show how they or similar materials may be used in correlation with the curriculum. Turner

ξ163. **Classification, Cataloging, Subject Headings for High School Libraries.** A.W. (4) Simplified cataloging routines that strive to develop an understanding of the structure and purpose of the catalog in the school library. Boughton

ξ164. **Classification, Cataloging, Subject Headings for High School Libraries.** W.S. (3) Books are cataloged for a permanent high school collection so that the student encounters a real situation in which he may develop speed, accuracy, and increased understanding of cataloging problems. Pr., 163. Boughton

Professional Graduate Courses

200. **Libraries, Librarians, and Society.** A. (2) An overview of the library profession, with consideration of the types of libraries and trends in their development; attention is given to personality factors and their relation to successful professional practice. The future of libraries and their place in a changing complex society is also examined. Gitler

201. **Organization and Administration: Public Libraries.** W. (2) A study of public-library service and the operation of library units; includes a consideration of legislation, finance and budgets, statistics, buildings and equipment, personnel, and the extension of library service. Bauer

202. **Organization and Administration: Academic and Special Libraries.** S. (3) A study of the factors covered in Librarianship 201, as related to college and university libraries, with attention to principles of particular import to them. The field of special libraries is also considered. Bauer

204. **Libraries, Librarians, and Society.** S. (2 or 3) Continuation of 200. Pr., 200. Gitler

209. **Directed Field Work (Practice).** S. (5) Four weeks, 40 hours a week, of field work in varying types of libraries of the Northwest. Professionally supervised. Gitler

210. **Bibliography and Reference.** A. (3) General principles of reference work and study of the most frequently used reference materials. Bevis

211. **Bibliography and Reference.** W. (3 or 4) Study of reference material by subject; subject bibliography. Pr., 210. Bevis

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ξAdmission to the School of Librarianship is granted only to graduate students except for courses marked ξ, which are open to seniors and graduates who wish to qualify for teacher-librarian positions in high schools in accordance with requirements established by the State Department of Public Instruction. Permission of the School should be requested before registering for courses so marked.

θOpen to any student but designed primarily for freshmen, sophomores, and new students.

212. Bibliography and Reference. S. (3) United States and other government publications. Pr., 211. Bevis

220. Classification, Cataloging, and Subject Headings. A. (4) Theory and principles governing the classification and cataloging of book collections. Factors determinig choice of subject headings. Study of the Library of Congress and Dewey Decimal schemes of classification. Boughton

221. Classification, Cataloging, and Subject Headings. W. (3) Comparative methods of cataloging. Problems in the development of policies and procedures. Pr., 220. Boughton

222. Classification, Cataloging, and Subject Headings. S. (3 or 5) Further study of classification systems. Techniques of cataloging special materials such as music, maps, microfilm. Individual problems. Pr., 221. Boughton

230. Selection of Books for Libraries. A. (3) Principles and practices of book selection, with attention to community characteristics. A study of standard aids, criteria for evaluating printed materials, both fiction and non-fiction; book reviews and their sources, publishers, translations, and editions are studied. The writing of annotations is included. Bevis, Turner

231. Selection of Books for Libraries. W. (3) Continuation of 230. Practical problems of selection, stressing the use of *Publishers' Weekly*. Pr., 230. Bevis, Turner

240. Advanced Legal Bibliography. A. (4) Bibliographical data and use of federal and state law reports and statutes; quasi-legal and commissioners' reports of the states, bar association records, legal periodicals, indexes and digests, legal regional bibliographies, cooperative bibliographies of law collections. Gallagher

241. Order and Accessioning of Law Books. A. (2) Aids to selection, processing, microphotography of legal material, etc. Gallagher

242. Legal Reference and Research. W. (5) Bibliographical lists, law reference questions, briefing, annotations, local legal history. Gallagher

243. Law Library Administration. S. (5) Staff, patrons and public relations, circulation, architecture, book arrangements, equipment, rules, publicity, publications, budgets, reports, professional societies, regional service, cooperative buying. Gallagher

250. Introduction to Library Work with Children. A. (3) A survey of the philosophy and place of children's work in the public library. A study of the organization and administration of a children's department, with emphasis on its relationship with other social agencies. Lectures, round-table discussions, and comprehensive viewing of children's books. Groves

252. Story Telling. £A. S. (3) A practical course on the art of story telling in public libraries, schools, and recreational centers. Folk and fairy tales, myths, epics, and short stories are used as source material. Open to juniors, seniors, and graduates, Autumn Quarter only; for School of Librarianship students, Spring Quarter. Groves

253. Advanced Children's Work. W. (2) An intensive study of the organization and function of a children's department. Special attention is given to problems of book buying, cooperation with the schools, library lessons, library publicity, and other activities. Pr., 250. Groves

254. Selection of Books for Children. W. (3) Attention is focused on some of the problems of actual selection of children's books and on the reading and discussion of books in specific fields. Pr., 250. Groves

255. Selection of Books for Children. S. (3) A further discussion of children's reading interests, with special emphasis on the history of children's books. Pr., 254. Groves

£260. School Library Administration. A.W.S. (3 or 4) Discusses methods that may be used in making the library a strongly functioning and integral part of the school. Problems involving personnel, library planning, and simple mechanical routines are stressed. Turner

£262. Book Selection for High School Libraries. A.W.S. (3) A study of the principles underlying the selection of books for young people and the tools used in their selection. Many representative books, differing in subject, form, and reading level, are read and reviewed. Turner, Groves

270. History of the Book. W. (3) Early materials and practices in writing and book making; development of printing and publishing, and recent modifications of the processes. Bevis

MATHEMATICS

Professors Winger, Ballantine, Carpenter, Cramlet, McFarlan; Associate Professors Beaumont, Birnbaum, Jerbert, Mullemeister, Zuckerman; Assistant Professors Avann, Haller, Hewitt, Kingston, Paulson; Lecturer Tang; Instructors Ball, Dekker, Yagi; Associates Andrews, Cox, Hildebrand, Owen, Rogers, Ubrich

Mathematics 1 may be taken concurrently with Mathematics 4, and Mathematics 2 with Mathematics 4, 5, 6, 107.

No credit for Mathematics 1 if one and one-half units of algebra are presented for entrance. No credit for Mathematics 2 if one and one-half units of geometry are presented for entrance.

1. Advanced Algebra. (5) Pr., one year high school algebra.
2. Solid Geometry. (5) Pr., one year plane geometry. No credit to students who have had solid geometry in high school.
4. Plane Trigonometry. (5) Pr., one and one-half years algebra, one year plane geometry.

£Admission to the School of Librarianship is granted only to graduate students except for courses marked £, which are open to seniors and graduates who wish to qualify for teacher-librarian positions in high schools in accordance with requirements established by the State Department of Public Instruction. Permission of the School should be requested before registering for courses so marked.

Not offered in 1949-1950: Second-year Library Work with Children.

5. College Algebra. (5) Pr., one and one-half years algebra, and qualifying test.
6. Analytic Geometry. (5) Pr., 2, 4, 5.
11. Theory of Investment. (5) Algebra review, percentage, simple interest, compound interest, progressions, ordinary annuities. Pr., one year algebra.
12. Mathematics of Finance and Insurance. (5) Annuities due, deferred annuities, perpetuities and capitalized cost, sinking funds and amortization, depreciation, valuation of bonds, probability, insurance mathematics. Pr., 11.
13. Elements of Statistical Method. (5) Numerical and machine computation. Graphical and tabular presentation of data. Averages, measures of scatter, other statistics. Scatter-diagram, least-square lines, regression, correlation. Elements of sampling. Pr., one year algebra, one year plane geometry.
22. Advanced Algebra and Plane Trigonometry. (5) This course is intended to give the student a minimum preparation in mathematics for beginning science courses. It is primarily for pharmacists. Pr., one year high school algebra and one year plane geometry.
31, 32, 33. Engineering Freshman Mathematics. (5, 5, 5) Pr., one and one-half years algebra, one year plane geometry; each course prerequisite to the following course.
41, 42, 43. Engineering Calculus. (3, 3, 3) Pr., 33 for 41; 41 and solid geometry for 42; 42 for 43.
51. Essentials of Plane Trigonometry. (3) An elementary course in plane Trigonometry. Pr., one and one-half years algebra and one year plane geometry. Not open to those who have had 4.
52. Higher Algebra. (5) Functions and graphs, linear and quadratic equations, progressions, complex numbers, theory of equations, determinants, logarithms. Pr., one and one-half years algebra and qualifying test. Not open to those who have had 5.
53. Analytic Geometry and Calculus. (5) The straight line, the circle, the conics. Transformation of coordinants. Limits and continuity, derivative and differential, integration and summation. Pr., solid geometry, Math. 51 or 4, and Math. 52 or 5. Not open to those who have had 6.
54, 55, 56. Mathematics for Architects. (3, 3, 3) Selected topics from college algebra, trigonometry and analytic geometry. The analytic geometry is especially emphasized. Pr., one and one-half years algebra, one year plane geometry; each course prerequisite to the following course.
61. Analytic Geometry and Calculus. (5) Polar coordinants, higher plane curves, tangents and normals, graphs and empirical equations, differential and integral calculus. Pr., Math. 53.
62. Engineering Calculus. (3) Differential and integral calculus. Applications to problems in mechanics. Series, complex numbers, space coordinants with vectors. Pr., Math. 61.
63. Engineering Calculus. (3) A continuation of Math. 62. Partial differentiation and multiple integration. Pr., Math. 62.
107, 108, 109. Differential and Integral Calculus. (5, 5, 5) Pr., 6; 107 for 108, 108 for 109.
114, 115, 116. Ordinary and Partial Differential Equations. (3, 3, 2) Pr., 109 or equivalent; 114 for 115; 115 for 116.
121, 122, 123. Theory of Equations. (2, 2, 2) Complex numbers, properties of polynomials, solution of algebraic equations with real coefficients, symmetric functions. Pr., 109.
147, 148, 149. Topics in Applied Mathematics. (2, 2, 2) A selection of those topics in mathematics which are of most frequent and immediate use in applied sciences. A working knowledge of elementary calculus is assumed. Pr., 43 or 109.
152, 153. Interpolation and Approximation.(3, 3) Operations on a computing machine, polynomial interpolation by the methods of Lagrange, n-th order differences, divided differences, and valcepts, remainders, solution of equations, numerical integration of functions and differential equations of first and second orders. Pr., differential calculus. Ballantine
160. Vector Analysis.(5) The calculus of vector functions of position and time, generalized Stokes and divergence theorems, curvilinear coordinates, and elementary applications to mechanics, fluid dynamics, geometry, and electrostatics. Pr., 109 or 42.
180. Matrices and Determinants. (5) The reduction of matrices and forms to canonical form under various groups of transformations. Pr. 109.
181. Calculus of Probabilities. (5) Fundamental concepts. Discrete and continuous random variables. Mathematical expectations. Laws of large numbers. Important types of distributions. Characteristic functions. Central limit theorem. Pr., 109.
182. Classical Methods of Statistical Inference. (5) Universe, sample, parameters, statistics. Point-estimates, confidence-regions. Distributions of classical statistics and their use in estimation and tests of hypotheses. Pr., 180, 181. Birnbaum
183. Theory of Correlation. (5) Multivariate distributions. Variances, covariances, regression, correlation. Specialization to multivariate normal distributions. Sampling of bivariate normal variables. Pr., 182.
184. Chi-tests. (5) The distribution of Chi-square. Its use for testing hypotheses. Contingency tables. Parameters estimated from sample. Some nonparametric methods. Pr., 183.
185. Biometrics. (5) Statistical methods applied to biological problems. Pr., 4, 5, 6.
190, 191, 192. Higher Calculus. (3, 3, 3) Selected topics in advanced calculus. Pr., 115.
193, 194, 195. Introduction to Modern Algebra. (3, 3, 3) Polynomials, matrices, transformations, introduction to the theory of groups, rings, fields, linear spaces, construction of the number systems of algebra. Pr., 109 for 193, 193 for 194, 194 for 195.
197. Seminar in Mathematics. (2-5) Offered as desired by various members of the staff. May be repeated for credit.

Teachers' Course in Mathematics. (See Educ. 75Q.)

Courses for Graduates Only

All courses numbered above 200 have as prerequisite a full year of differential and integral calculus and the consent of the instructor in charge.

204, 205, 206. Modern Algebra. (3, 3, 3) Theory of groups, rings, integral domains, and fields. Polynomials. Vector spaces, groups of transformations, matrices, and invariants. Beaumont

207, 208, 209. Topology. (3, 3, 3) Elementary set theory, general topological spaces, metric spaces, fixed point theorems, uniform structures, completeness, applications to analysis, measure and integration in abstract spaces. Hewitt

214, 215, 216. Functions of Classical Analysis. (5, 5, 5) Pr., 192 or equivalent. Selected topics in analysis, special functions, orthogonal functions, differential equations in the complex domain.

217, 218, 219. Collineation Groups and Their Invariants. (3, 3, 3) Regular body groups represented by rotations of the sphere, by collineations along the line and in the complex plane. Groups of linear transformations in the plane together with their invariant configurations, self-projective rational curves, multiple symmetry of curves and ornamental patterns. Winger

224, 225, 226. Functions of a Real Variable. (3, 3, 3) Theory of integration with special reference to the integrals of Riemann, Lebesgue, and Stieltjes, measurable functions, properties of functions of a real variable with necessary basic notions concerning real number limits, point sets and their metric properties. McFarlan

241, 242, 243. Functions of a Complex Variable. (3, 3, 3) Analytic functions, contour integration power series, conformal representation, analytic continuation of other topics. Pr., 116. Yagi

247, 248, 249. Metric Differential Geometry. (2, 2, 2) Differential geometry with tensor analysis. Intrinsic geometry of surfaces. Riemannian geometry of n-dimensions. Pr., 116. Dekker

271, 272, 273. Ordinary Differential Equations. (3, 3, 3) The first order equation, classifications of solutions as determined from singularities, periodic solutions. Second order equations, Fuchsian type, special equations in the complex field. Pr., 115. Cramlet

281. General Theory of Estimation and Testing Hypotheses. (5) The Neyman-Pearson theory. Maximum likelihood statistics. General theory of confidence regions. Elements of decision theory. Pr., 184. Paulson

282. Analysis of Variance and Design of Experiments. (5) Analysis of variance and covariance to determine factors producing variation. Use of randomized blocks, Latin squares and other techniques in planning experiments. Pr., 182.

283. Multivariate Statistics. (5) Wishart's distribution. Hotelling's generalized T. Significance of sets of means. Multivariate analysis of variance. Applications to factor analysis.

284. Least Squares. Time Series. (5) Problems of curve fitting. Classical method of least squares. Probabilistic interpretation. Time series. Search for periodical components. Pr., 184.

285. Sequential Analysis. (5) Theory and applications of the recently developed sequential method of testing hypotheses. Applications to acceptance sampling, quality control, census problems. Pr., 182.

289. Seminar in Probability and Statistics. (†) Reports by students and faculty on contemporary research.

300. Research. (†) Pr., permission.

Variations from the above program for succeeding years will be made by selections from the following courses:

UNDERGRADUATE: Foundations of Algebra, Synthetic Projective Geometry, Solid Analytic Geometry, Finite Differences, Elementary Theory of Numbers, Projective Geometry.

GRADUATE: Advanced Topics in Algebra, Calculus of Variations, Fourier Analysis, Partial Differential Equations, Theory of Relativity, Lattice Theory, Riemannian Geometry.

MEDICINE

I. BASIC MEDICAL SCIENCES

Anatomy

Professor Bennett; Associate Professors Becker, Everett; Clinical Associate Professor Kellogg; Assistant Professors DeMarsh, Johnson, Ralph, Skaben; Instructor Laubhan; Clinical Associates Dirstine, Durham, Eggers, Emmel, Finlayson, Fitzmaurice, Haffly, Hutchins, Jones, Klemperer, Lay, Lindahl, McElmeel, Norgore, Sanderson, Sheridan, Watson.

103. General Anatomy. (3-5) For students in health education, anthropology, microbiology, physical education, speech. Not open to predental or premedical students.

117-118. Elementary Anatomy and Physiology. (3-3) For students in the School of Nursing. Others by permission of department chairman.

128-129. Human Anatomy. (10-6) Gross, head and neck, microscopic, neurology. For students of the School of Dentistry.

151-152. Human Anatomy. (8-8) For students of the School of Medicine. Graduate Students, pr., permission of department chairman.

155J. Regional Surgical Anatomy. (3) For students of the School of Medicine, resident staff, post doctorate trainees, others by permission of department chairman.

161-162. Microscopic and Submicroscopic Anatomy. (4-4) For students of the School of Medicine Graduate students.

163J. Basis of Neurology. (9) For students of the School of Medicine. Graduate Students, pr 161 and 162, or special permission of department chairman.

Course for Graduates Only

300. Research. (†)

† To be arranged.

Biochemistry

Professor Norris; Assistant Professors Krebs, Kuether

127. Biochemistry. (6) For dental students. Pr., matriculation in the Dental School, or permission of department chairman.

166. Biochemical Preparations. (2 or 3) Pr., 168 or equivalent.

167-168. Biochemistry. (6-6) For medical students. Pr., matriculation in the Medical School, or permission of the department chairman.

Courses for Graduates Only

200. Seminar. (0)

249. Special Topics. (2 or 3) Pr., permission of department chairman.

300. Research. (†)

Microbiology

Professors Evans, Henry; Associate Professors Ordal, Weiser; Assistant Professors Douglas Gustafson; Instructors Kirchheimer, Pennington; Associate Duchow

100. Fundamentals of Bacteriology. (†, maximum 6) A basic course in bacteriology. The comparative morphology, taxonomy, and physiology of bacteria. Pr., 10 credits in botany or zoology, Chem. 132, and permission. Ordal

101. General Bacteriology. (5) A survey course for nonmajors dealing with bacteria and their activities. Pr., Chem. 2 or 22. Staff

120. Applied Bacteriology. (5) Practical work in the preparation of culture media and solutions. Nutritional requirements of microorganisms are considered. Duchow

122. Applied Bacteriology. (5) Practical experience in a public health laboratory. 15 hours per week. Permission and letter to laboratory. Staff

130. Industrial Microbiology. (3 or 5) Microbiological and biochemical aspects of fermentative and oxidative processes of industrial importance. Pr., 100 or 101, Chem. 111, 132. Douglas

131. Food Spoilage. (3 or 5) Microbiological, enzymatic, and auto-oxidative factors involved in food spoilage. Pr., 100 or 101, Chem. 111, 132. Douglas

135. Microbiology for Students of Dentistry. (6 for students of dentistry, 5 for others) Laboratory work for students of dentistry is more extensive than that for other students. Pr., Chem. 132, 10 credits in botany or zoology, and permission. Kirchheimer

136. Applied Dental Microbiology. (1) Specific applications of microbiology to dental problems are considered. Pr., 135 and permission. Kirchheimer

151, 152. Microbiology for Students of Medicine. (†, maximum 6; 6) (Nonmedical students who have had previous work in bacteriology may by special permission be allowed to take course 151 for less than the full 6 credits.) Course 151 includes: 1, a survey of microorganisms and a general consideration of the morphology and physiology of bacteria, and 2, an introduction to immunology, formation and properties of antibodies, nature of antigen-antibody reactions, blood groups, allergies, and an analysis of factors of innate and acquired immunity. During the last part of course 151 and throughout course 152, specific pathogenic bacteria and viruses are studied in detail. Pr., Chem. 132, 10 credits in zoology or botany, and permission. Evans, Staff

153. Medical Parasitology and Mycology. (†, maximum 6) Pr., 151 or equivalent, and permission. Gustafson, Henry

199. Undergraduate Research Problems. (†) Qualified senior students are assigned specific problems in industrial, medical, or general microbiology. Staff

Courses for Graduates Only

The undergraduate credits in microbiology and permission are prerequisite to all graduate courses. Courses 201, 202, and 213 are offered in alternate years.

200. Seminar. (1) Pr., graduate standing.

*201. Physiology of Bacteria. (4) Fundamental physiological and metabolic processes of bacteria. Pr., permission of instructor. Ordal, Douglas

202. Filterable Viruses. (4) Consideration of the physical, chemical, and biological properties of viruses and methods of working with them. Pr., 152 and permission. Histology is desirable. Evans

213. Advanced Immunology. (†, maximum 4) Pr., 151 and permission. Weiser

300. Research. (†)

Pathology

Professor Lippincott; Associate Professor Chipps; Assistant Professors Ellerbrook, Ricker; Clinical Assistant Professors Jensen, Larson, Mason; Clinical Instructors Creighton, Jones, Edmonds, Tooley; Research Associates Eriksen, Rhees, Stowell, Thornton

101. Clinical Pathology for Nurses. (2) For students of the School of Nursing.

121. Medical Technology. (5)

122. Medical Technology. (6)

123. Medical Technology. (6)

* Not offered 1949-50.

124. Medical Technology. (6)
125. Medical Technology. (6)
126. Medical Technology. (16)
131-132-133. General Pathology. (2-2-2) For students of the School of Dentistry.
151-152-153. General and Special Pathology. (5-5-5) For students of the School of Medicine.
155-156-157. Clinical Pathology. (*) For second-year medical students.
160. Autopsy Technique. (+) For third- and fourth-year medical students.
170. Surgical Pathology. (†) For third-year medical students.
176. Clinical Pathological Conference. (†) For third-year medical students.

Courses for Graduates Only

200. Seminar. (†)
250. Special Pathology. (2-5, maximum 20)
251. Experimental Pathology. (2-5, maximum 20)
252. Clinical Pathology. (2-5, maximum 20)
253. Oncology. (2-5, maximum 20)
254. Research in Hematology. (†)
255. Cytological Diagnostic Procedures for Neoplastic Diseases. (2-5, maximum 20)
300. Research. (+) Staff

Pharmacology

Professor J. Dille; Assistant Professors Farab, Loomis, Matthews; Clinical Associate R. Dille

61. Pharmacology and Therapeutics. (3) For students of the School of Nursing.
101, 102, 103. General Pharmacology. (3, 3, 3) For students of the College of Pharmacy.
134. General Pharmacology. (4) For students of the School of Dentistry.
152-153. General Pharmacology. (5-4) For students of the School of Medicine.
185, 186. Experimental Pharmacology. (2, 2) For students in the College of Pharmacy. Pr., 101, 102, 103.
187. Biological Assays. (2) Pr., 185, 186.

Courses for Graduates Only

201. Pharmacology Techniques. (4)
202. Pharmacology Techniques. (4)
203. Pharmacology of Cardiac Drugs. (4)
204. Pharmacology of Autonomic Drugs. (4)
205. Pharmacology of Anesthetic Drugs. (4)
206. Human Pharmacology. (4)
207. Journal Seminar. (1)
208. Research Seminar. (0)
300. Pharmacology Research. (†)

Physiology and Biophysics

Professor Ruch; Associate Professor Carlson; Assistant Professors Patton, Rushmer, Skaben; Instructor Amassian; Research Associate Young; Clinical Associates Crystal, Davis, Voegtlin

116. Biophysics. (5) Study of physiological phenomena in physical terms. Three lectures, one quiz, five hours laboratory. Pr., Zool. 2, Physics 3, Chem. 23. Carlson
117-118. Elementary Anatomy and Physiology. (3-3) For students of the School of Nursing. Human physiology with anatomical demonstrations. Three lectures, six hours laboratory, one quiz. Open to physiology minors by permission. Skaben
126. Human Physiology. (6) For students of the School of Dentistry. Three lectures, six hours laboratory, two quiz hours. Ruch, Staff
151-153. Human Physiology. (7-7) For students of the School of Medicine, and for graduate students by permission. Four lectures, six hours laboratory, two quiz hours. Ruch, Staff
163J. Basis of Neurology. (9) A conjoint course in correlative neuroanatomy and neurophysiology. Five lectures, 12 hours laboratory. Pr., Physiol. 151, or permission. Ruch, Patton

Courses for Graduates Only

200. Seminar. (2 to 5)
225, 226, 227. Advanced Mammalian and Clinical Physiology. (†) Guided study of the experimental literature of physiology and biophysics. Pr., graduate student in physiology. Ruch, Staff
231, 232, 233. Experimental Mammalian and Clinical Physiology. (†) Supervised practice in the experimental and operative techniques of phyiological and biophysical research. Pr., graduate student in physiology. Ruch, Staff
300. Research. (†) Pr., permission.

Public Health and Preventive Medicine

Professor Powers; Associate Professor Lazarus; Assistant Professor Farner; Clinical Assistant Professors Horton, Kahl, Palmquist; Instructors Drake, Freeman, Green, Tuttle; Clinical Instructors Dewey, Giedt, Jensen, Lundy, Northrop, Vaughn; Pediatrician and Director of University Child Health Center, M. H. Grytbak

Courses open to ALL Upper-Division and Graduate Students

104. Food and Milk Sanitation. (3) A study of public health methods of preventing transmission of disease through food and milk. Pr., P.H. 120. Drake

108. Environmental Utilities. (2) Plumbing, water, sewage, heating, ventilating, and lighting utilities in buildings; considerations of design and operation for health and comfort. Pr., P.H. 120. Green

109. Sanitation Facility Design. (4) Sanitary Facility Design. The study of the mechanical design of public health facilities and sanitation equipment. Pr., 108. Green

110. Field Practice in Public Health. (12) A 3-month assignment to a large local health department for supervised application of Public Health Practices. Green

112. Public Health Problems. (4) This will be a course designed to cover special needs of students planning to enter the field of environmental sanitation who have not had sufficient experience or training in the particular problem. Pr., P.H. 108. Green

116J. Health Education. (3) Trends and problems in health education programs, responsibilities of the public health nurse and teacher in the school health porgram, teacher-pupil relationships in the health program, the school administrator in the health program.

118. Transmission and Control of Communicable Diseases. (3) General introductory course, especially designed for students lacking laboratory training. Pr., junior standing. Lazarus

119. Introductory Epidemiology. (3) A study of public health methods of the control of the common communicable diseases. Pr., Microbiology 135 or equivalent. Freeman

120. Introduction to Public Health. (3) A study of local, national, and international public health services. Pr., P.H. 118 or P.H. 119. Powers

121. Public Health Administration. (3) General principles of organization, public administration, and management in terms of public health services, including discussions and exercises in the use of records, budget making, and methods of appraising health services. Pr., P.H. 122. Powers

122. Public Health Statistics. (2) Statistical methods used in the compilation, interpretation, and presentation of vital data. Pr., P.H. 120 or P.H. 132. Hall

123. Technical Methods in Public Health Statistics. (5) Forms, mechanical equipment and instruments for processing and evaluating public health data. The role of the statistician, in integrating activiites in a health department. Pr., P.H. 122. Hall

124. Industrial Hygiene. (3) A study of public health methods of prevention of occupational diseases and accidents in industry. Pr., P.H. 120. Farner

125. Advanced Public Health Statistics. (5) Planning and executing problems; sampling; tests for statistical significance and their interpretation. Pr., P.H. 123. Hall

132. School and Community Health Programs. (5) A study of the organizational structure, function and services of official and nonofficial community and school health agencies with particular attention to the interrelated role of teachers, physicians, nurses, and sanitarians. Demonstrations and practice of screen techniques for physical defects are included. Powers

138. Public Health Law. (3) Relationship of public health to law and the legal system; administrative investigation and control; official structure of health agencies; programs and policy embodied in law; rights and liabilities of public health officials. Rutledge

Courses Offered to Medical Students

151. Biostatistics. (2) Hall

152. Public Health Economics. (1) Powers

153-154-155. Introduction to Public Health and Preventive Medicine. (1-1-1) Powers and Staff

156. Industrial Hygiene. (†) Farner

157. Clerkships and Seminar (†) Powers, Horton

II. CLINICAL MEDICAL SCIENCES

Dermatology

Clinical Professors Shaw, Parker; Clinical Instructors Bruenner, Campbell, Mumby, Pommerening, Williams

Internal Medicine

Professor Williams; Associate Professors Finch, Green, Pullen; Assistant Professor Kirby; Instructor Volwiler; Clinical Professors Bannick, Bennett, Bridges, Griffith, Mills, Morton, Palmer, Pearson, Scudder, Spickard, Rankin, Watts; Clinical Assistant Professors Bowers, Capaccio, Chew, Crampton, Davies, Foster, Haviland, Hildebrand, Hynes, King, Krantz, Lincoln, Martin, Sherwood, Soderstrom, Strob, Voegtlin, Zimmerman; Lecturers Ferguson, Jared, Lemere, Rowntree; Clinical Instructors Altonse, Aronson, Bender, Bingham, Camber, Collins, Eggers, Fey, Geraghty, Hanks, Jobb, Johnson, Kidd, Kretzler, Laws, Leede, Lester, Lindahl, McVay, Manchester, Morrow, Narodick, Nelson, Peterson, Richardson, Skubi, Sparkman, Thompson, Weinstein, Wilkinson.

151. Introduction to Medicine. (+) — Turner
152. Introduction to Public Health Economics and Medical Statistics. (†) — Powers
153. Introduction to Medico-social and Medico-economic Problems. (†) — Ferguson, Jared
155-156-157. Internal. (+) — Staff
158-159. Introduction to Physical Diagnosis. (+) — Staff
165. Clinical Clerkships. (+) For third-year medical students. — Staff
170. Clinical Clerkships. (†) For fourth-year medical students. — Staff

Obstetrics and Gynecology

Professor de Alvarez; Associate Schroeder; Clinical Professor and Senior Consultant Thompson; Consultants Bell, Helwig, Rollins, Rotton, Thorp; Clinical Instructors Abnquist, Clancy, Fine, Kimball, Lee, Nuckols, Peterson, Plant, Rutherford, Smith, Stewart; Clinical Associates Davis, Donaldson, Fiorino, Reekie; Clinical Assistants Franklin, Knudson.

151. Introduction to Obstetrics and Gynecology. (†) — de Alvarez
165. Clinical Clerkships. (†) For third-year medical students. — de Alvarez and Staff
170. Clinical Clerkships. (†) For fourth-year medical students. — de Alvarez and Staff

Pediatrics

Professor Seelye; Senior Consultant Durand; Clinical Assistant Professors Cutts, Rembe, Spickard; Instructor Moll; Clinical Instructors Billington, Clein, Evans, P. Guy, Jaquette, Joy, Tidwell; Clinical Associates Docter, Emerson, Grytbak, M. Guy, Kaplan.

151. Introduction to Pediatrics. (†)
165. Clinical Clerkships. (†) For third-year medical students.
170. Clinical Clerkships. (†) For fourth-year medical students.

Psychiatry

Professor Ripley; Clinical Professor Lemere; Senior Consultant Nicholson; Clinical Instructors Baker, Goforth, Haertig, Henderson, Hoedemaker, Holmes, Kaufman, Orr, Riley, Stolzheise, Sugars

100. Introduction to Mental Hygiene. (2) Open to seniors and graduate students, or by permission of instructor. — Kaufman
151. Introduction to Human Behavior. (†) The anatomy and physiology of normal behavior. — Lemere
153. Normal Personality Development. (†) — Baker
154. Psychopathology. (†) — Hodemaker
155. The Psychiatric Examination. (†) — Orr
157-158-159. Lectures, Clinic, and Ward Teaching in Psychiatry. (†) Includes both adult and child psychiatry. — Lemere, Kaufman, Staff
160. Out-Patient Clinic and Ward Studies in Psychiatric Diagnosis of Psychotherapy. (†) — Staff
200. Psychiatric Principles of Counseling. (2) Pr., 100 or permission of instructor. — Kaufman
205. Clinical Psychiatry. (†) — Staff

Radiology

Professor Templeton; Clinical Associate Professor Cantril; Clinical Assistant Professors Addington, Carlile, Hartzell; Clinical Instructors Walker, Roberts; Clinical Consultants Buschke, Hawley

151-152-153. Introduction in Application of Radiology and the Diagnosis and Treatment of Disease. (†) — Staff
170. Diagnostic Radiology. (†) — Staff

Surgery

Professor Harkins; Associate Professor Merendino; Assistant Professors McDonald, Ray, Ward; Senior Consultants R. Anderson, Buckner, Coe, Dudley, Forbes, Herrmann, Jacobson, B. King, Lamson, J. LeCocq, Lyman, Peacock, Trueblood, Zech; Consultants J. Baker, Blackman, Bowles, Chambers, J. Duncan, Edmunds, Haven, W. Hutchinson, Jarvis, D. Leavitt, H. Leavitt, E. LeCocq, Loe, Lyter, McGowan, McKibben, McLemore, Metheny, Mullen, Speir, Stone, Tuell; Clinical Instructors Burgess, Crystal, W. Duncan, Hall, C. Hutchinson, O. Jensen, Lasher, C. MacMahon, J. Miller, J. Nelson, Obman, D. Parker, Pinkham, Ramsay, Stafford, Tyvand, Wyrens, Yunck; Clinical Associates Bill, Dirstine, Eggers, Emmel, Evoy, Florer, Haverstock, Hearne, Hutchins, Klemperer, Loughlan, Lundmark, Mathwig, McConville, O'Neil, J. Phillips, Rogge, Rosellini, Sanderson, Watson

151-152-153. Introduction to Surgery. (†) Harkins, Merendino, Ward, McDonald, Ray, and Staff

165. Clinical Clerkships. (†) For third-year medical students. Staff

170. Clinical Clerkships. (†) For fourth-year medical students. Staff

METEOROLOGY AND CLIMATOLOGY

Professor Church; Assistant Professor Fleagle; Instructor Schallert; Associate Mattingly

1. Survey of the Atmosphere. (5) Composition and structure of the atmosphere; meteorological processes and forms of condensation phenomena; atmospheric motions; tropical and extratropical storms. Not open to students who have had Geog. 11. Staff

10. Air Masses and Fronts. (3) Characteristics of equatorial, tropical, and polar air masses; air mass motion; fronts and frontal phenomena. Pr., 1 or Geog. 11. Staff

50. Meteorological Observations. (2) Technique of weather observations and charting; pilot-balloon observations; measurements at weather station and in the field. Pr., 1 or Geog. 11. Staff

112. Physical Meteorology. (5) Mechanics and hydrostatics applied to atmosphere, ideal gases, change of phase, radiation and heat balance, acoustic and electromagnetic waves, atmospheric electricity and magnetism, structure of atmosphere. Pr., 1 year physics and 1 year math. Not open to students who have had Geog. 112. Fleagle

114. Synoptic Meteorology. (5) Analysis of air masses, fronts and cyclones; displacement of pressure systems and fronts; techniques of forecasting. Pr., 112 and calculus. Schallert

115. Synoptic Meteorology. (5) Kinematic analysis; convergence, divergence, and vertical motions; frontogenesis, frontolysis; deepening and filling of pressure centers. Pr., 114. Schallert

121. Physical Climatology. (5) Climatic elements; classifications; collections, use and interpretation of climatic data; physical factors determining the distribution of radiation, temperature, precipitation, pressure and winds. Pr., 1 or Geog. 11. Church

122. Regional Climatology. (5) Characteristics of the elements of the various climatic types and the distribution of these types on the continents using both the Koeppen and Thornthwaite classification systems. Pr., 1 or Geog. 11. Church

129. Microclimatology. (3) Climates, climatic differences, and climatic characteristics in the lower layers of the atmosphere. Pr., 121. Church

130. Aeronautical Meteorology. (3) Troposphere and stratosphere; radiation temperature, clouds, fog, thunderstorms, ice formation on aircraft. Pr., engineering juniors and seniors only. Not open to students who have had Geog. 122. Staff

141. Meteorological Theory. (5) Atmospheric statics, thermodynamics, simple atmospheric motions. Pr., 112 and calculus, or permission. Fleagle

142. Meteorological Theory. (5) Surfaces of discontinuity, kinematics of air motion, pressure change, circulation and vorticity. Pr., 141. Fleagle

150. Meteorological Laboratory. (5) Weather-chart construction and analysis; forecasting. Pr., 114 or concurrent with 114. Not open to students who have had Geog. 153. Schallert

151. Meteorological Laboratory. (5) Weather-chart construction and analysis; forecasting. Pr., 150. Not open to students who have had Geog. 154. Schallert

152. Meteorological Laboratory. (5) Additional map analysis. Pr., 151. Schallert

160. Meteorological Instruments. (3) Fundamental principles and errors involved in meteorological instruments in standard use. Pr., 112. Not open to students who have had Geog. 156. Schallert

162. Oceanographic Meteorology. (6) Given at Friday Harbor only. Energy exchange between atmosphere and ocean, moisture gradients above water surface, marine wind structure. Pr., 112. Not open to students who have had Geog. 162. Church

192. Readings in Meteorology or Climatology. (To be arranged) Pr., permission. Staff

193. Special Problems in Meteorology or Climatology. (To be arranged) Pr., permission.

200. Seminar in Meteorology. (2 to 5)

241, 242. Dynamic Meteorology. (3, 3)

300. Research. (*)

Not offered in 1949-50: 128, Applied Climatology; 194, Meteorological Statistics; 195, Climatological Statistics.

MICROBIOLOGY

(See page 253.)

MILITARY SCIENCE AND TACTICS (ARMY AND AIR FORCE R.O.T.C.)

Colonels Jones, Jensen; Lieutenant Colonels Ledeboer, Snyder; Majors Donlon, Spawn, Backstrom, D'Amelio, Miller, Mix; Captains Barbee, Bryant, Carter, Connor, Fore, Johnson, Rhea, Swomley, Waddell

The instruction for the first two years, together with that provided for the third and fourth years, constitutes the courses prescribed by the Department of the Army and Department of the Air Force for institutional units of the Reserve Officers' Training Corps. The advanced courses, those of the third and fourth years, are open to selected students who have completed the first two years (basic course) of instruction and training or have been granted credit for its equivalent in accordance with regulations.

First Year

1A, B, C. Military Science I—Basic—(Infantry, Antiaircraft Artillery, Transportation Corps, Quartermaster Corps, Signal Corps, Corps of Engineers). (2, 2, 2) Military organization; military policy of the United States; National Defense Act and ROTC; evolution of warfare; maps and aerial photos; military psychology and personnel management; first aid and hygiene; geographical foundations of national power; military problems of the United States; military mobilization and demobilization; leadership, drill, and exercise of command.

11A, B, C. Military Science I.—Basic—(Medical Corps). (1, 1, 1) World situation, national defense and ROTC; military obligations of citizenship; organization of the Army and Medical Department; courtesies and customs of the service; military law; military training methods; medical military history; and military administration.

12A, B, C. Military Science I.—Basic—(Dental Corps). (1, 1, 1) World situation, national defense and ROTC; military obligations and citizenship; organization of the Army; organization of the Medical Department; military law; medical military history, and military administration.

30A, B, C. Military Science I.—Basic—(Air Force R.O.T.C.). (2, 2, 2) National defense act and R.O.T.C.; military organization; hygiene and first aid; leadership, drill, and exercise of command; individual weapons and marksmanship; maps and aerial photographs.

Second Year

51A, B, C. Military Science II—Basic—(Infantry). (2, 2, 2) Leadership, drill, and exercise of command; organization; weapons; marksmanship; technique of fire and rifle squad; combat formations; scouting and patroling; tactics of rifle squad.

52A, B, C. Military Science II—Basic—(Antiaircraft Artillery). (2, 2, 2) Leadership, drill and exercise of command; introduction to antiaircraft artillery automatic weapons; characteristics, capabilities and limitations of antiaircraft artillery automatic weapons; service of the piece—automatic weapons fire unit; introduction to antiaircraft artillery guns; characteristics, capabilities and limitations of 90-mm antiaircraft artillery guns; service of the piece—90-mm antiaircraft artillery guns.

53A, B, C. Military Science II—Basic—(Quartermaster Corps). (2, 2, 2) Leadership, drill, and exercise of command; organization for supply in the army; organization and functions of quartermaster corps; classification of supplies, use of supply catalogues and bases of allowances; property accountability and responsibility; research and development of supplies in quartermaster corps; organization, functions, and operation of quatermaster units; unit and organizational supply.

54A, B, C. Military Science II—Basic—(Transportation Corps). (2, 2, 2) Leadership, drill, and exercise of command; introduction to transportation corps; economics of military transportation; military highway transport; highway organization and operation.

55A, B, C. Military Science II—Basic—(Signal Corps). (2, 2, 2) Leadership, drill, and exercise of command; introduction to signal communications; organization and missions of signal corps; organization and signal communications practices of infantry, armored, and airborne divisions.

56A, B, C. Military Science II—Basic—(Corps of Engineers). (2, 2, 2) Leadership, drill, and exercise of command; history and traditions of corps of engineers; characteristics of weapons; camouflage; defense against chemicals; explosives and demolitions; hand tools and rigging; mines and booby traps; organization and tactics of small units; organization of the ground and field fortifications.

61A, B, C. Military Science II.—Basic—(Medical Corps). (1, 1, 1) World situation, national defense and R.O.T.C.; organization and employment of medical service of a field army; duties of the surgeon; medical service, zone of interior and zone of communications; medical supply; map reading; health and national security; first aid, bandaging, and splinting.

62A, B, C. Military Science II.—Basic—(Dental Corps). (1, 1, 1) World situation, national defense and R.O.T.C.; organization and employment of medical service of a field army; duties of a surgeon; medical service, communication zone and zone of interior; medical supply; map reading; health and national security; first aid, bandaging, and splinting.

80A, B, C. Military Science II.—Basic—(Air Force R.O.T.C.). (2, 2, 2) Leadership, drill and exercise of command; physical development methods; maps and aerial photographs; military administration; evolution of warfare; military law and boards; unit training.

Third Year

101A, B, C. Military Science III—Advanced (Infantry). (3, 3, 3) Leadership, drill, and exercise of command; organization; weapons; gunnery; communications; combat intelligence; estimate of situation and combat orders; field fortifications; tactics of rifle and heavy weapons platoons and companies.

102A, B, C. Military Science III—Advanced (Antiaircraft Artillery). (3, 3, 3) Leadership, drill, and exercise of command; antiaircraft artillery tactics; basic gunnery (antiaircraft guns); basic gunnery (automatic weapons); communications; individual weapons and marksmanship; motors and transportation; organization; troop movements.

103A, B, C. Military Science III—Advanced (Quartermaster Corps). (3, 3, 3) Leadership, drill, and exercise of command; station supply; depot supply; storage, warehousing and materials handling; procurement, storage and distribution of petroleum products.

104A, B, C. Military Science III—Advanced (Transportation Corps). (3, 3, 3) Leadership, drill, and exercise of command; organization of the transportation staff sections; organization and operation of railroads (zone of interior); military railway service; movements; port operations ports of embarkation and debarkation); stevedore operations; harbor craft and marine maintenance; highway transport service organization (theater of operations); individual weapons and marksmanship.

105A, B, C. Military Science III—Advanced (Signal Corps). (3, 3, 3) Leadership, drill, and exercise of command; communications security; signal orders; field wire communication fundamentals; field radio communication fundamentals; applied signal communication (division); message center and communication center procedure; signal supply and repair; career guidance program for signal corps officers; weapons and marksmanship.

106A, B, C. —Military Science III—Advanced (Corps of Engineers). (3, 3, 3) Leadership, drill, and exercise of command; bridge design and classification; engineer signal communicaitons; engineer combat intelligence; engineer supply; military roads and runways; organizations of engineer units; organizaton of combat divisions; tactics of engineer units; vehicle operation and maintenance; water supply; individual weapons and marksmanship.

111A, B, C. Military Science III.—Advanced—(Medical Corps). (1, 1, 1) World situation, national defense and R.O.T.C.; military preventive medicine; field medicine and surgery; army career program.

112A, B, C. Military Science III.—Advanced—(Dental Corps). (1, 1, 1) World situation, national defense and R.O.T.C.; military preventive medicine; army dental service, general and army regulations; organization of the dental service; equipment and supplies; dental services; theatre of operations and zone of interior; and command and staff relations.

130A, B, C. Military Science III.—Advanced—(Air Force R.O.T.C.). (3, 3, 3) Military law and boards; geographical foundations of national power; military leadership, psychology, and personnel management; leadership, drill and exercise of command; air force subjects; history of the USAF, organization of the USAF, USAF training, USAF inspection systems, transportation, navigation, USAF statistical control system, USAF supply, aeronautics, meteorology, communications, air intelligence and combat orders, air operations, guided missiles.

150. Military Science—Advanced Camp. (3) Offered in summer only.

Fourth Year

151A, B, C. Military Science IV—Advanced (Infantry). (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; organization; command and staff; communications; motors and transportation; supply and evacuation; troop movements; new developments; the military team; tactics-infantry battalion in attack and defense.

152A, B, C. Military Science IV—Advanced (Antiaircraft Artillery. (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; antiaircraft artillery materiel; antiaircraft artillery tactics, advanced; command and staff; combat intelligence; gunnery; military team; new developments; supply and evacuation; field artillery capabilities and employment (familiarization).

153A, B, C. Military Science IV—Advanced (Quartermaster Corps). (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; fiscal procedures; procurement procedures; command and staff; combat intelligence; technical intelligence; organization and functions of the combatant arms; organization and functions of the technical services; quartermaster operations in the zone of the interior; quartermaster operations in the theater of operations.

154A, B, C. Military Science IV—Advanced (Transportation Corps). (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; military railway service (theater of operations); highway transport operations (theater of operations); highway traffic regulations and control (theater of operations); movements control (theater of operations); logistics; overseas supply; command and staff; combat intelligence; responsibilities of a transportation corps officer.

155A, B, C. Military Science IV—Advanced (Signal Corps). (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; wire communication—materiel; radio communication—materiel; higher echelon signal communication and equipment; post signal operations and administrative procedure; career guidance plan for signal corps officers; darkroom technique and photographic practices; command and staff; combat intelligence.

156A, B, C. Military Science IV—Advanced (Corps of Engineers). (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership,

drill, and exercise of command; engineer support for the Air Force; engineer support for the communication zone; engineer support for the type field army; command and staff; construction, utilities, and job management; motor movements; river crossing operations.

161A, B, C. Military Science IV.—Advanced—(Medical Corps). (1, 1, 1) World situation, national defense and R.O.T.C.; military preventive medicine; medical aspects of atomic warfare; chemical warfare; military psychiatry; personnel management; military medical research development; organized reserve corps; and mobilization.

162A, B, C. Military Science IV.—Advanced—(Dental Corps). (1, 1, 1) World situation, national defense and R.O.T.C.; military preventive medicine; military dental health; military oral surgery; medical aspects of atomic warfare and chemical warfare; military psychiatry; personnel management; reports and records; military dental research developments; organized reserve corps; and mobilization.

180A, B, C. Military Science IV.—Advanced—(Air Force Maintenance Engineering). (3, 3, 3) Command and staff; military teaching methods; psychological warfare; military problems of the United States; leadership, drill and exercise of command; military mobilization and demobilization; combat intelligence; technical supply, maintenance control, supervision of maintenance inspection and maintenance procedures, flight line maintenance, crew chief system, base shops, specialized maintenance, air inspector, flight test, evaluation, and testing.

181A, B, C. Military Science IV.—Advanced—(Air Force Administration). (3, 3, 3) Command and staff; military teaching methods; psychological warfare; military problems of the United States; leadership, drill and exercise of command; military mobilization and demobilization; combat intelligence; and administration.

MUSIC

Professors Chapple, Jacobson, Kinscella, McKay, Munro, Werner, Zetlin; Associate Professors Hall, Harris, Irvine, Lawrence, Normann; Welke, Wilson, Woodcock; Assistant Professors Beale, Bostwick, Creel, Eichinger, Heinitz, Kirchner, Moore, Risegari, Terry, Verrall; Instructors Adams, Cave, Geissmar, Linden, Sokol; Associates Beck, Benno, Cloud, Graf, Horsfall, Keehley, Martin, Peterson, Phillips, Schardt

1. Elementary Music Theory. (2) For the general student only. Practical information for the amateur on the theoretical background of music. Formerly Music 14. Staff

2, 3. Sight Singing and Ear Training. (3, 3) Primarily for the prospective music major or minor who is not sufficiently prepared to enter Music 21. Formerly Music 5, 6, 14, 15. Staff

4. Sight Reading Laboratory. (0) For music education majors who lack skill in syllable reading. Exemption by examination. *

7. Survey of Music. (5) For the general student only. Illustrated lectures with supplementary readings to provide the general student with background for the understanding of common musical forms, idioms, and styles. Formerly Music 21. Kinscella

10A. Instrumental Instruction. (2 or 3 ea. qtr., maximum 10) For those who cannot meet the entrance requirements in piano. See description for Music 50. Formerly Music 9A. *

10AX. Instrumental Instruction, Piano. (1 ea. qtr., maximum 10) Class piano. For those who cannot meet the entrance requirements in piano. May substitute for 10A. Formerly Music 9AX. Bostwick

10CX. Elementary Voice. (1 ea. qtr., maximum 6) Class Voice. For music education majors. Fee $5.00. Formerly Music 9CX. Adams

11, 12, 13. Rhythmic Movement. (1, 1, 1) Muscular coordination and association with musical rhythms. Formerly Music 27, 28, 29. *

17. Music Appreciation: Symphonic Music. (2) For the general student only. Illustrated studies aimed at increasing the understanding and enjoyment of symphonic music of different periods. Formerly Music 22. Kinscella

18. Music Appreciation: Modern Symphonic Music. (2) For the general student only. General survey of orchestral music since 1900. Formerly Music 44. Risegari

19. Music Appreciation: Opera. (2) For the general student only. Special attention to Metropolitan broadcasts. Formerly Music 23. Kinscella, Risegari

20. University Singers. (0-0-2, maximum 4) Study, preparation, and performance of oratorios, cantatas, and other large choral works. No prerequisites. Formerly Music 10-11-12. Chapple, Lawrence

21, 22, 23. First-year Theory. (4, 4, 4) For music majors. Intensive training in basic musicianship: sight reading, ear training, keyboard harmony, creative harmony; elements of counterpoint, analysis, and form. Music 27, 28, 29 to be taken concurrently. Pr., permission. Formerly Music 24, 25, 26. Staff

24, 25, 26. Orchestral Instruments Laboratory. (1, 1, 1) Class instruction in violin and viola for music education majors. Formerly Music 41, 42, 43. Kirchner, Sokol

27, 28, 29. Music Literature (First Year). (2, 2, 2) For music majors. To be taken concurrently with 21, 22, 23 (theory). Two lectures and one listening hour. Types and styles as exemplified in the works of important composers. Pr., permission. Formerly Music 4, 54. Risegari, Terry

30. Vocal or Instrumental Instruction. (2 or 3 ea. qtr., maximum 18) A minor for those majoring in the following curricula: elective, composition, history and literature, music education, voice or instruments other than piano. See description for 50. Formerly Music 20. *

31, 32, 33. Piano Sight Reading Laboratory. (1, 1, 1) For piano majors. Exemption by examination. Formerly Music 37, 38, 39. Moore

34, 35, 36. Orchestral Instruments Laboratory. (1, 1, 1) Class instruction for music education majors. 34: violoncello and bass; 35: woodwind; 36: brass. Formerly Music 41, 42, 43. Kirchner, Sokol, Welke

40. University Band. (1 ea., maximum 6) Parallels University Concert Band. For the improvement of technique. Formerly Music 30, 31, 32. *

50. Vocal or Instrumental Instruction. (2 or 3 ea. qtr., maximum 18) Weekly studio class in interpretation and repertory, and one or two individual half-hour lessons per week. Detailed description of the course may be obtained on application to the Secretary of the School of Music. Fee, $25 or $37.50. The teacher is designated by a number subjoined to the section letter, and both must be used in all registration procedure.
    A. Piano. Jacobson (A1), Creel (A2), Woodcock (A3), Bostwick (A4), Normann (A5), Geissmar (A6), * (A7), Moore (A8).
    B. Violin or Viola. Zetlin (B1), Sokol (B2).
    C. Voice. Werner (C1), Lawrence (C2), Wilson (C3), Cave (C4), Adams (C5), Harris (C6).
    D. Violoncello. Kirchner (D1), Heinitz (D2), Martin (double bass, D3).
    E. Organ. Eichinger (E).
    F. Woodwind. Horsfall (flute, F1), Benno (oboe, F2), Phillips (clarinet, F3), Peterson (bassoon, F4).
    G. Brass. Schardt (horn, G1), * (trumpet, G2), Cloud (trombone, G3).
    H. Harp. Graf (H1), Beck (H2).

60. University Orchestra. (1 ea., maximum 6) Parallels University Symphony Orchestra. For the improvement of technique. Formerly Music 43, 44, 45. Sokol

61, 62, 63. Advanced Rhythmic Movement. (1, 1, 1) Muscular coordination and association with musical rhythms. Pr., 13. Formerly Music 77, 78, 79. *

64, 65. Orchestra Laboratory. (1, 1) For music education majors. Kirchner, Sokol, Welke

71, 72, 73. Second-year Theory. (4, 4, 4) For music majors. Music 77, 78, 79, Music Literature, to be taken concurrently. Pr., 23, 29. Formerly 99, 112. Staff

75, 76. Advanced Orchestral Instruments. (2 ea.) Wind, string. Formerly 60, 62. Kirchner, Welke

77, 78, 79. Music Literature (Second Year). (2, 2, 2) For music majors. To be taken concurrently with 71, 72, 73 (theory). Two lecture and one listening hour. Periods of music history as exemplified in the works of important composers. Pr., 23, 29. Formerly 55, 56. Staff

80. Chamber Music. (1 ea. qtr., maximum 6) Small instrumental and vocal groups. Formerly Music 102, 124, 125.
    Section A. Piano ..... Jacobson
    Section B. String ..... Heinitz, Zetlin
    Section C. Madrigal ..... Hall
    Section D. Opera ..... Chapple, Linden
    Section E. Men's Choral ..... Lawrence
    Section F. Woodwind ..... Chapple
    Section G. Brass ..... Welke

81. Music Theory Laboratory. (4) Refresher course in basic skills. Suitable for students who need a thorough review. No student may receive credit for both 81 and 21, 22, 23. Formerly Music 58. *

87. Repertory I. (2) Pr., permission. Formerly Music 83.
    Section A. Piano: J. S. Bach, Scarlatti, K. P. E. Bach, and other harpsichordists. Readings of representative compositions with emphasis upon stylistic performance..... Jacobson
    Section B. Strings: Seventeenth-century Italian..... Heinitz
    Section C. Voice: Folk Idioms; Early Italian Arias..... Adams

88. Repertoy II. (2) Pr., permission. Formerly Music 84.
    Section A. Piano: Haydn and Mozart..... Jacobson
    Section B. Strings: Bach..... Heinitz
    Section C. Voice: French Folk and Art Songs..... Wilson

89. Repertory III. (2) Pr., permission. Formerly Music 85.
    Section A. Piano: Early Nineteenth-century Composers..... Woodcock
    Section B. Strings: Mozart..... Heinitz
    Section C. Voice: Early Italian and French Opera..... Cave

101, 102. Modal Counterpoint. (3, 3) Studies in sixteenth-century style. Music 80C to be taken concurrently. Pr., 73, 79. Formerly Music 99. Creel

104. Choral Literature. (2) Singing and analysis of contrapuntal music; techniques of interpretation. Pr., Music 73 or permission. Formerly Music 98. Hall

112. Musical Forms. (5) Analysis and composition exercises in smaller forms; analysis of larger forms. Pr., 73. Woodcock

114. Music in Broadcasting. (3) Program planning, adaptation and selection of music for various types of broadcasts, development and care of score and record library. Pr., 7. Formerly Music 108. *

120. University Singers. (1 ea., maximum 6) A capella choir of mixed voices selected from those registered for 10 on basis of audition. Pr., permission. Formerly Music 80, 81, 82. Lawrence

121, 122, 123. Keyboard Transposition and Improvisation. (2, 2, 2) Pr., permission. Formerly Music 173, 174, 175. *

124. Elementary School Music. (3) Development of the music program in the primary grades. Pr., 4. Formerly Music 155. *

125. Intermediate School Music. (2) Special problems of teaching in grades four, five, and six. Pr., 124. Formerly Music 155. Normann

126. Junior High School Music. (3) The psychology of adolescence in relation to music; the changing voice; presentation of part song; appreciation; analysis of materials. Pr., 125. Formerly Music 116. Hall

127, 128, 129. Music Literature and History. (3, 3, 3) 127: classic period; 128: early romantic; 129: late romantic. Pr., 73, 79. Formerly Music 105, 106, 132, 151, 153. Woodcock, Terry, Risegari

130. Vocal or Instrumental Instruction. (2 or 3 ea. qtr., maximum 18) A minor for those majoring in the following curricula: elective, composition, history and literature, music education, voice, or instruments other than piano. See description for Music 50. *

131, 132. Contemporary Idioms. (3, 3) An analytical study of present-day composition techniques. Formerly Music 101. McKay, Verrall

134-135-136. Conducting. (1-2-1) Designed to coordinate all phases of this art; score analysis; musical styles; hand and baton technique. Formerly Music 136. Chapple, Munro, Welke

137. Repertory IV. (2) Pr., permission. Formerly Music 133.
Section A. Piano: Brahms and Liszt ..... Jacobson
Section B. Strings: Beethoven ..... Heinitz*
Section C. Voice: Oratorio ..... Harris

138. Repertory V. (2) Pr., permission. Formerly Music 134.
Section A. Piano: Debussy and Ravel ..... Jacobson
Section B. Strings: Nineteenth-century ..... Heinitz*
Section C. Voice: German Lieder ..... Werner

139. Repertory VI. (2) Pr., permission. Formerly Music 135.
Section A. Piano: Contemporary ..... Jacobson
Section B. Strings: Contemporary ..... Heinitz*
Section C. Voice: Modern and Contemporary Songs ..... Lawrence

140. University Concert Band. (1 ea. qtr., maximum 6) Audition required. Formerly Music 50, 51, 52. Welke

141, 142, 143. Composer's Laboratory. First Year. (3, 3, 3) Pr., permission. Formerly Music 157, 158, 159. McKay, Verrall

144, 145, 146. Accompanying. (2, 2, 2) Study and performance of music of different types and periods. For voice or instrument in combination with piano. Formerly Music 138. Woodcock

147. Music in the Americas. (3) The seventeenth, eighteenth, and nineteenth centuries. Contribution of music to church and social life in various sections of the western hemisphere during seventeenth and eighteenth centuries. A study of American composition during the eighteenth and nineteenth centuries, through performance. Pr., junior standing. Formerly Music 161. Kinscella

148. Music in the Americas. (3) The twentieth century. Study through performance of American compositions of this period, their idioms and tendencies in widely diversified fields. Survey, use, and influence of folk and regional materials; new trends in music education, composition, and performance in Latin American countries. Pr., junior standing. Formerly Music 162. Kinscella

150. Vocal or Instrumental Instruction. (2 or 3 ea. qtr., maximum 18) See description for Music 50. Pr., examination. *

151, 152. Counterpoint. (3, 3) Studies in polyphonic composition, including canon, invention, and fugue. Formerly Music 163. McKay, Verrall

154. Band Arranging. (2) Includes the study of tone color, range, registers, voicing, transposition, fingering, arranging, transcriptions. Pr., 65, 73. Welke

156. Instrumental Music in the Schools. (2) Methods of instruction; organization; equipment; instrumentation; rehearsal techniques; materials; technical problems of the various band and orchestra instruments. Pr., 65, 73. Normann

157. Church Music. (2) Comprehensive survey of the chant, hymn, anthem, solo, and small ensemble. Pr., 135. Formerly Music 145. Adams

160. University Symphony Orchestra. (1 ea. qtr., maximum 6) Audition required. Formerly Music 93, 94, 95. Chapple, Kirchner

161, 162. Orchestration. (3, 3) The technique of writing for orchestra and other large ensembles, with an analytical and historical approach to problems of organization and sonority. Pr., 102, 112. Formerly Music 143. McKay, Verrall

164, 165, 166. Piano Teaching. (2, 2, 2) Survey and study of teaching material; supervised practice teaching. Formerly Music 165, 166, 167. Woodcock

167. History of Keyboard Music. (3) Survey, development of organ, clavichord, harpsichord, and piano; idioms of corresponding types of keyboard music, and styles of performance through four centuries. Study of representative music of each instrument and period through performance. Pr., 112. Formerly Music 181. Kinscella

170. Vocal or Instrumental. (2 or 3 ea. qtr., maximum 18) See description for Music 50. *

180. Advanced Chamber Music. (1 ea. qtr., maximum 6) Selected instrumental and vocal groups. Pr., permission. Formerly Music 102, 124, 139.
Section A. Piano ..... Jacobson
Section B. String ..... Heinitz, Sokol, Zetlin
Section C. Madrigal ..... Hall
Section D. Opera ..... Chapple, Linden
Section E. Men's Choral ..... Lawrence
Section F. Woodwind ..... Chapple
Section G. Brass ..... Welke

181. Advanced Studies in Musical Analysis. (3) Verrall

184-185-186. Advanced Conducting. (2-1-1) Includes workshop experience with choral and instrumental ensembles. Formerly Music 180. Chapple, Munro, Welke

187. 188, 189. Music Literature and History. (3, 3, 3) 187: Middle Ages; 188: Renaissance and Baroque; 189: Contemporary. Pr., 73, 79. Formerly Music 187, 190, 192. Irvine, Munro, McKay

190. Senior Recital. (2) Formerly Music 199. *

191, 192, 193. Composer's Laboratory, Second Year. (3, 3, 3) Formerly Music 177, 178, 179. McKay, Verrall

195. Choral Conducting. (3) Munro

197, 198, 199. Undergraduate Seminar in Music History. (3, 3, 3) Pr., permission. Irvine

Courses for Graduates Only

200. Introduction to Musicology. (2) Survey and scope, aims, and methods; training in research procedure. Lectures, reports, and discussions. Pr., permission. Irvine

220. Graduate Vocal or Insrtumental Instruction. (2 or 3 ea. qtr., maximum 18) Pr., 30 credits in the same branch of music. See description for 50.

221. History of Instruments. (2) Irvine

222. History of Notation. (2) Irvine

230. Seminar in Music Education. (3) Selected topics in secondary school music and supervision. Pr., permission. Munro

233. Seminary in Musicology. (3) Selected topics in music history, literature, and theory. Pr., permission. Irvine

240. Graduate Composition. (†) Independent composition in larger forms to include compositions submitted as thesis. McKay

300. Research. (†) Individual study. Pr., permission. Irvine, Munro

Not offered in 1949-1950: 210, History of Musical Performance; 211, Music of the Elizabethan Age; 212, Opera; 223, History of Musical Theory.

NAVAL SCIENCE

Captain Emory; Commander Tyree; Major Ditta; Lieutenants Butler, Fitz, Minnich; Lieutenant Junior Grade Wright

First Year

1. Naval History. (3) Naval history, naval aviation.
2. Naval Organization. (3) Naval organization, organization of the Department of Defense, characteristics of naval ships, duties of presonnel, naval regulations and customs, leadership.
3. Naval Orientation. (3) Correspondence, phraseology, rules of the road, seamanship, ship-handling, watch-standing, communications.

Second Year

51. Naval Weapons. (3) Principles of gun construction, ammunition components, gun assemblies, automatic guns, torpedoes, mines, rockets, aviation ordnance.
52. Fire Control. (3) Surface fire control, nuclear explosives, antiaircraft fire control.
53. Applied Naval Electronics. (3) Advanced fire control, radar, sonar, CIC, shore bombardment, guided missiles.

Third Year

101. Piloting. (3) Navigation instruments, compasses, chart reading, the sailings, piloting, electronic navigation, Loran equipment, maneuvering board.
102. Navigation. (3) Rules of the Nautical Road, meteorology, theory of celestial navigation.
103. Celestial Navigation. (3) Celestial navigation (advanced), navigator's day's work at sea.

(Marine Corps)

105M. Concepts of Military Policy, Power, and Principles. (3) The origin, development, and role of U. S. Military Forces, total war, the classic principles of war as illustrated in battles from 490 B.C. to 1815 A.D.

Fourth Year

151. Naval Machinery. (3) Marine engineering installations, boilers, power plants, auxiliary machinery, turbines, distillers, refrigeration plants.
152. Diesel Engines and Ship Stability. (3) Diesel engines, aircraft engines, stability, damage control, loading conditions, buoyancy.
153. Naval Administration and Leadership. (3) Naval law, naval courts-martial, practical application of leadership principles, duties and responsibilities of officers.

(Marine Corps)

155M. **Analysis of American Battles.** (3) A study of selected battles in American history from 1776-1863.

156M. **American Battle and Amphibious Operations.** (3) American battles from 1863-1945, history of amphibious landings, development of amphibious tactics.

157M. **Amphibious Operations.** (3) Amphibious warfare and combined operations.

(Supply Corps)

158S. **Introduction to Supply and Supply Ashore.** (4) Supply organization, materiel procurement, receipt, expenditures, and inventory control.

159S. **Supply Ashore (Continued) and Supply Afloat.** (4) Accounting reports and returns. Receipt and storage of materiel afloat.

160S. **Supply Afloat (Continued).** (4) Expenditure of materiel afloat, reports and returns; commissary, ship's store, clothing and small stores.

NURSERY SCHOOL

Assistant Professors Evans, Williams, Skeels; Associate Alliger

101. **Personality Growth of the Preschool Child.** (3) Developmental trends and age-level expectancies with emphasis on the child from two to six years; motor controls, adaptive behavior, communications, personal-social adjustments. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., Psych. 1. Offered Autumn, Winter, Spring. Skeels

102. **The Child and the Parent.** (3) Interpretations of common behavior manifestations of preschool children, individual and group, with discussion of possible causes and treatment. Parent-child relationships. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 101. Offered Winter, Spring. Williams

103. **Nursery School Curriculum and Methods.** (3) A laboratory analysis of the nursery school program. Formulation and adaption of a program to meet age-level differences, individual and group needs. Teacher-relationships. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 102. May be taken with 117. Offered Autumn, Spring. Alliger

107. **Books and Stories in the Nursery School.** (2) Analysis of books and stories, based on verbalizations, comprehension, attention span and age-level differences of young children. Techniques in meeting individual and group needs. Two-hour lab. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 102. Offered Autumn. Skeels

108. **Music in the Nursery School.** (2) Study and analysis of songs and rhythms suitable for the preschool child. Development of techniques for fostering creative expression in young children. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 102. Offered Winter. Alliger

109. **Guidance of Individual Children in the Nursery School.** (2) Staffing individual children; analysis of procedures and techniques used in group situations; study of child-parent relationships. Attendance at parent group meetings required. Two weekly conferences. Pr., 102. To be taken with 117. Evans

111. **Creative Activities in the Nursery School.** (2) Guidance and interpretation of child's use of paints, paper, clay, blocks. Preparation and presentation. Two-hour lab. One-half hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 102. Not offered 1949-50. Williams

112. **Play and Play Materials in the Nursery School.** (2) Interpretation of play behavior at the nursery school level. Selection and arrangement of toys and equipment to meet developmental needs of children. Two-hour lab. One-half hour each week between 9:00 and 12:00 must be kept free for observation in the nursery school. Pr., 102. Offered Spring. Skeels

113. **Introduction to Nursery School Parent Counseling.** (2) Reading and discussion of various methods used in parent counseling; case studies. Attendance at parent group meetings required. Two-hour weekly conference. Pr., 117. To be taken with 118. Alliger

117. **Nursery School Practice Teaching.** (5) Scheduled participation in group guidance of the pre-school child. Development of techniques and skills. Individual conferences. Group conferences one and one-half hours weekly. Time to be arranged. Morning schedule for teaching must be arranged with head teacher in advance. Permission. Pr., 103 or equivalent. Offered Autumn, Winter, Spring. Staff

118. **Advanced Nursery School Practice Teaching.** (5) Program planning, organization, and administration. Techniques in working with children. Concepts of parent-teacher-child relationships. Individual conferences. Group conferences one and one-half hours weekly. Time to be arranged with head teacher in advance. Permission. Pr., 117 or equivalent. Offered Autumn, Winter, Spring. Staff

155. **Organization and Administration of the Nursery School.** (2) Discussions of problems in planning programs and operating nursery schools. Special consideration of costs, equipping, staffing. Pr., N.S. 118. Offered Spring. Williams

NURSING

Professor Soule; Associate Professors Leahy, Olcott, Tsebutis; Assistant Professors Boyle, Burke, Cross, Eklind, Glynn, Hoffman, Patterson, Svelander; Instructors Airth, Anderson, Blackman, Bruggeman, Carnevali, Chinque, Coffman, Crouch, Dean, Dudley, Feek, Felton, Fleming, Floyd, Forsberg, F. Gray, M. Gray, Haase, Holland, Jamison, Kanyer, Kintner, Lankford, Lindblom, Lindburgh, Lubitz, Luby, MacIvor, McKey, Mitchell, Northrop, Rowland, Smith, Stamatakis, Stone, Tillotson.

1. **History of Nursing.** (3) A study of nursing from earliest times with emphasis on the place of nursing in world history and the present social order. Open to any woman student. Leahy

5. **Care and Prevention of Illness in the Home.** (3) A study of health and safety factors in the home and community; recognition of early symptoms of physical or mental illness as an important factor in the prevention of disease or disability. First aid in the home; conditions commonly treated at home; giving medications and supportive treatments; care before and after pregnancy; infant care; child growth and development; common psychological reactions to illness or disability; choosing a doctor and hospital; consideration of community health resources. Anderson, Cross

Courses 120-149 inclusive are Hospital Division courses. They are open only to students in Curriculum Group I, Basic Course, or in approved schools of nursing.

120. **Principles and Practices of Elementary Nursing.** (5) Elementary nursing techniques, practice in elementary nursing care. Two lectures, 2 two-hour laboratory periods and 4 hours supervised clinical practice. Felton, Floyd

121. **Advanced Nursing Procedures and Methods of Planning Individualized Nursing Care.** (3) Advanced general nursing procedures. Clinical nursing care study. Practice in planning nursing care with reference to physical, mental, social, and economic needs of the patient. Felton, Floyd

122. **Practice in Elementary Nursing and Special Hospital Departments.** (3) Practice in elementary medical and surgical nursing correlated with laboratory X-ray and pharmacy experience. Felton, Floyd

124. **Principles of General Medicine, Surgery, Otolaryngology and Nursing Care.** (5) Survey of these fields with etiology, pathology, symptoms, complications, treatments, prevention and specialized nursing of each condition. Lecture, demonstration, clinics. Recording and nomenclature included. Feek, Holland, Kanyer, Carnevali

125. **Principles of Medical and Surgical Specialties and Their Nursing Care.** (5) Includes fields of gynecology, endocrinology and metabolism, dermatology, neurology, orthopedics, first aid and ophthalmology. Holland, Crouch, Carnevali, Dudley

127. **Public Health Nursing and Community Health Agencies.** (3) Discussion of principles of public health nursing and those community resources which can be utilized in care of the patient and family. Burke

128. **Medical Nursing Practice.** (6) Practical application of principles of nursing in medical diseases. Twelve weeks' experience in general medical, communicable disease nursing and related out-patient clinics. Weekly conference and clinic. Case assignment. Feek, Dudley, Kanyer

129. **Principles of Special Therapy.** (2) The use of light, electricity, heat, water, massage, exercise, and occupation as aids in the care or control of disease processes. Anderson

130. **Principles of Preventive Medicine and Nursing Care in Communicable Disease.** (4) Etiology, modes of transmission, symptomology, complications, treatment, methods of prevention and control in acute communicable, tuberculosis, and venereal diseases. Special emphasis on medical aseptic technique, specialized nursing care and public health and social aspects. Dudley, Svelander

131. **Introduction to Health Teaching.** (2) Orientation to teaching functions of the nurse in both hospital and community situations. Burke

132. **Surgical Nursing and Diet Therapy Practice.** (6) Six weeks' experience in general surgical nursing with experience in Central Service. Weekly clinic and conference. Case assignment. Six weeks in diet therapy. Weekly conference. Holland, Gray, Northrop, Carnevali, Forsberg

133. **Operating Room and Orthopedic Nursing Practice.** (6) Nine weeks' experience in operating room nursing and anaesthetic care. Three weeks in orthopedic nursing. Weekly clinic and conference. Crouch, Gray, Smith

134. **Nursing Practice in Surgical Specialties.** (3) Six weeks' experience in urology, gynecology, eye, ear, nose and throat, head injury, and emergency surgery nursing. Weekly clinics, conferences. Case assignment. Holland, Crouch, Carnevali

135. **Generalized Nursing in the Community.** (3) Discussion class on community problems with case illustrations from hospital and public health agencies. Runs concurrently with Nursing 146. Burke, Patterson

138. **Professional Problems in Nursing.** (2) Includes study of professional organizations, legislation, accrediting of schools of nursing, and similar topics. Jamison, Svelander

139. **Principles of Pediatrics and Pediatric Nursing.** (5) Physical and mental development of normal children, principles of their care and feeding. Common diseases of infancy and childhood, appropriate medical and nursing care, together with program of prevention. Lubitz, MacIvor

140. **Pediatric Nursing and Nursery School Practice.** (6) Ten weeks' practice in pediatric nursing including formula room and out-patient clinics. Two weeks' observation in Nursery School. Weekly clinic, conference. Case assignment. Observation in well child clinics. Lubitz, MacIvor

141. **Principles of Obstetrics and Obstetrical Nursing.** (5) Aanatomical, physiological aspects of pregnancy, labor, and puerperium. Care during normal, operative, and complicated labors. Nursing care of mother and newborn. Public health and social aspects. Lectures, demonstrations. Lindburgh, Lankford

142. **Obstetrical Nursing Practice.** (6) Twelve weeks' experience in obstetrical nursing. Nursing care of patients during ante-natal, labor, and post-partum periods, including care of the newborn. Experience in out-patient clinic. Weekly clinic conference. Lindburg, Gray, Lankford

143. **Nursing Practice in Special Fields.** (6) Twelve weeks' advanced nursing practice in tuberculosis or out-patient nursing. Afrth, Haase, Blackman

144. **Senior Nursing Practice.** (6) Twelve weeks' advanced nursing practice in one field (i.e. medical nursing, operating room) in a hospital or a public health agency. Experience in elementary ward teaching and administration. Individual projects. Weekly clinics and conference. Svelander, Jamison, Hoffman, Staff

145. **Tuberculosis Nursing Practice.** (3) Six weeks' clinical practice with planned assignment and rotation through departments in a tuberculosis sanatorium, with out-patient department experience, community agency and clinic. Includes weekly ward clinic and nursing conference. Blackman, Haase

146. **Visiting Nursing Practice.** (6) Twelve weeks' experience in one public health agency. Concurrent experience in clinics. Patterson, Burke, Staff

147. **Principles of Psychiatry and Psychiatric Nursing.** (5) Lectures, demonstrations, and clinics, dealing with various types of mental diseases, principles of mental hygiene, and nursing care of mentally ill patients. Tillotson, Rowland

148. **Psychiatric Nursing Practice.** (6) Practical application of principles of psychiatric nursing. Twelve weeks' clinical practice in psychiatric nursing with rotation through departments of a mental hospital including occupational, recreational, and special medical therapies. Weekly ward clinic, nursing conference, and case study. Fleming, Lindblom

149. **Principles of Ward Management and Bedside Teaching.** (3) Management of ward routines and assistant head nursing including individual and bedside teaching. Hoffman, Jamison

150. **Principles of Teaching Nursing and Health.** (5) Application of principles of learning to teaching methods and techniques effective in nursing with opportunity for course planning, demonstration, and practice teaching. Pr., Psych. 1. Boyle, Tschudin

151. **Administration of Schools of Nursing.** (5) Deals with the principles of organization and functioning of a school of nursing, including selection and organization of the faculty, student selection and welfare, health and guidance programs, curriculum planning and scheduling, and accreditation. Olcott, Boyle

152. **Supervision of Hospital Departments.** (5) Organization of hospitals for administration of nursing service and education, selection and placement of personnel, principles of supervision, ward management and teaching, methods of student clinical assignment and rotations. Olcott, Boyle

153. **Hospital Administration in Relation to Nursing Service.** (5) Pr., Nurs. 150, 152, graduate registered nurse. Hoffman

154. **Practice Teaching and Ward Supervision in Hospitals.** (10) Twelve weeks experience in the student's major clinical field with opportunity for supervised practice in administrative and teaching functions of the head nurse and supervisor, and for interdepartmental observation of hospital departments. Pr., Nurs. 150, 152, or concurrent. Hoffman, Jamison, Boyle, Staff

155, 156, 157. **Advanced Nursing Practice in Clinical Specialties.** (3 ea. qtr.) Twelve weeks' planned experience in one clinical field with experience in related out-patient department clinics. Includes weekly clinic and nursing conference. Staff

159. **Principles of Advanced Nursing.** (2) Integration of all aspects of nursing in the solution of nursing problems in special clinical fields. McKey, Kintner

160. **Teaching Functions of the Public Health Nurse.** (5) The principles of teaching as applied to individual, family, and group health conferences. Analyses and interpretations of family health studies and methods of teaching health. Pr., 167, Psych. 1. Leahy

161. **Orientation in Public Health and Community Nursing.** (3) Survey of the field of public health and community nursing including planned field trips. For students in teaching and supervision in schools of nursing. Patterson

162. **Field Practice in Public Health Nursing.** (5) Health teaching and nursing. Patterson

163. **Field Practice in Public Health Nursing.** (5) Administrative activities and record work. Patterson

164. **Field Practice in Public Health Nursing.** (6) Family health planning. Use of social agencies and maintenance of community relationships. Patterson

165. **Reading in Current Literature in Public Health Nursing.** (2) Pr., 167, and consent of instructor. Leahy

166. **Advanced Field Practice in Public Health Nursing.** (12) Pr., 164. Experience in public health nursing supervision or special fields. Patterson

167. **Principles, Organization, and Administration of Public Health Nursing.** (3) Policies and developments in national, state, and local public health nursing services in official and non-official agencies. Leahy

168. **Special Fields of Public Health Nursing.** (5) Study of the functions, objectives, and programs in the special fields of public health nursing. Patterson

170. **Public Health Nursing Aspects of Adult Hygiene.** (3) Community facilities and public health nursing care of the adult and aging population. Leahy

172. **Special Fields in Psychiatric Nursing.** (2) Pr., 147, 148, or equivalent, grad, reg. nurse, majoring in psychiatric nursing, or permission. Discussion of common ailments affecting the central nervous system as applied to psychiatric nursing. Patients in psychiatric hospital used for demonstration and teaching. Staff

178. **Principles, Organization, and Administration of Industrial Nursing.** (3) Jahncke

181. Body Mechanics in Nursing. (3) Pr., grad. reg. nurse; Anatomy and Physiology 117 and 118 or equivalent. The application of the principles of posture and body mechanics to patient care and the performance of nursing activities. Anderson

182. Survey of Orthopedic Conditions and Nursing Problems. (3) Principles of orthopedic nursing applied toward prevention, home care, and rehabilitation of persons with orthopedic and plastic defects. Anderson

183. Advanced Orthopedic Nursing. (5) Lectures and teaching clinics on orthopedic conditions by an orthopedic surgeon, demonstration and practice of advanced orthopedic nursing procedures and integration of orthopedic principles into all patient care. Anderson

185. Teaching of Nursing Arts and Science. (3) A study of principles and methods in their application to the specific field of teaching nursing arts. Pr., 150, Psych. 1. Hoffman

190. Methods of Supervision in Public Health Nursing. (3) Principles and methods of supervision in public health nursing and their relation to administration. Pr., preparation and experience in public health nursing, and approval of instructor. Leahy

193. Advanced Work in Special Fields of Public Health Nursing. (3) Pr., 167, 168, and permission of instructor. Group projects in special fields of public health nursing on the basis of student interest. Patterson

195. Survey of Trends in Contemporary Nursing. (3) Particular emphasis is placed on current problems. Soule

196. Curriculum Development in Nursing Education. (5) Pr., 150 or equivalent. Includes a consideration of current curriculum patterns and trends in nursing education, the development of curriculum materials and problems in the study and implementation of nursing curriculums. Tschudin

Courses for Graduates Only

201, 202, 203. Seminar in Nursing Problems. (†) Pr., graduate registered nurse, 30 credits in nursing. Soule, Staff

300. Research in Nursing Education, Hospital Administration, Public Health Nursing. (†) Open only to qualified graduate students in the field of nursing. Soule, Staff

OCEANOGRAPHY

Professors T. G. Thompson, Church, Mackin, Norris, Robinson, Utterback; Associate Professors Barnes, Blaser, Martin, Ordal; Assistant Professors DeLacy, Ray, Swan

1. Survey of Oceanography. (5) Origin and extent of the oceans; nature of the sea bottom; causes and effects of currents and tides; animal and plant life in the sea. Church

Courses for Graduates Only

201-202. General Oceanography. (3-3) Distribution and characteristics of water masses and ocean currents; circulation of inshore waters; waves; oceanographic theories, methods and instruments. Pr., graduate standing in one of physical sciences, or permission. Barnes

249. Graduate Seminar. (2 to 6) Staff

300. Research in Oceanography. (To be arranged) Staff

Related Work in Other Departments

Courses in Fisheries. (See Fisheries.)

Courses in Geology. (See Geology 106, 114, 126, 131, 200, 312.)

Courses in Marine Botany. (See Botany 144, 199, 248, 300.)

Courses in Marine Zoology. (See Zoology 133, 134, 174, 213-214, 216, 225, 239, 300.)

Courses in Meteorology. (See Meteorology 162, 300.)

Courses in Microbiology. (See Microbiology 300.)

Courses in Oceanographical Chemistry. (See Chemistry 155, 156, 225.)

Courses in Physical Oceanography. (See Physics 166.)

PHARMACY, PHARMACOGNOSY, PHARMACEUTICAL CHEMISTRY, AND TOXICOLOGY

Pharmacy

Professor Rising; Associate Professor Plein; Lecturer Langenhan; Instructor Mendenhall

1-2-3. Fundamental Principles and Processes of Pharmacy, Elementary Pharmaceutical Preparations. (3-3-3) 1 lecture, 1 quiz, 1 laboratory. A study of the practical application of mathematics and physics to pharmacy. Manufacture of U.S.P. and N.F. galenical preparations; development of laboratory technique; study of the U.S.P. and N.F. Langenhan

4. History of Pharmacy. (2) 2 lectures. A study of the development of the science and profession of pharmacy and a survey of its literature; contributions of various nations to the profession. Langenhan

9-10-11. Prescriptions. (3-3-3) 2 lectures, 1 laboratory. A study of the fundamental principles of prescription compounding and dispensing with special emphasis on accuracy and technique. Pharmaceutical Latin and prescription reading are included. Pr., 3, Chem. 10 or equivalent. Plein

15. Home Remedies. (2) 2 lectures. For nonmajors. A study of the remedies and cosmetics preparations commonly used in the home, from the point of view of composition, effectiveness, and safety. Rising

51. Elementary Pharmacy. (2) For nurses only. 2 lectures. Survey of fundamental knowledge of the theory of dispensing pharmacy. Mendenhall

113-114-115. Professional Management, Professional Pharmacy, Advanced Prescriptions. (5-5-5) 2 lectures, 1 quiz, seminar and laboratory. Principles of management and the laws governing the practice of pharmacy are studied. The divisions of professional pharmacy are discussed under such headings as general practice, veterinary, and dental pharmacy. The advanced techniques in prescription practice are stressed in both laboratory and lecture. Pr., 11. Rising

118. Pharmaceutical Accounting. (5) Five lectures. Basic principles of accounting as used in pharmacy with special emphasis on state and federal taxes and deductions. Fiscal reports for comparing business trends under accepted business procedures. Fordon

173. Cosmetic Manufacturing. (3) 1 lecture, 2 laboratories. Preparation of many types of cosmetics and a study of their physical, chemical, and physiological properties. Pr., Chem. 39, or equivalent. Rising

182. Modern Pharmaceuticals. (5) 5 lectures. A study of the new and more important pharmaceuticals found in modern practice considered from the standpoint of composition, manufacture, dosage, and properties. Pr., 11, Chemistry 39 or equivalent, Sr. standing. Plein

183. Hospital Phamacy. (3 to 5) 2 lectures, 1 to 3 laboratories. Principles and techniques of hospital dispensing and dispensary management. Pr., permission. Plein

199. Research Problems. (1 to 5) Open to qualified juniors, seniors, and graduate students. Research problems in manufacturing and dispensing pharmacy. Rising, Plein

Course for Graduates Only

304. Research. (Maximum of 25 credits for M.S.; 45 for Ph.D.) Rising, Plein

Pharmacognosy

Professor Goodrich; Associate Professor Youngken; Assistant Professor Neva

12-13-14. Pharmacognosy. (3-3-3) 3 lectures. Plant and animal drugs—their sources, production, identification, active constituents, and uses. Pr., Bot. 13 or equivalent. Goodrich, Youngken, Neva

104. Microscopy. (3) 1 lecture, 2 laboratories. The application of stains and microchemical techniques in examining powdered drugs, spices and related substances. Included is a consideration of adulteration and fungus contamination. Pr., 14, Bot. 13, or equivalent. Youngken, Neva

105. Microscopy. (2) 1 lecture, 1 laboratory. Continuation of Ph'cog. 104. Pr., 104, Zool. 8. Youngken, Neva

106. Medicinal Plants. (2) 1 lecture, 1 laboratory. Considerable time is spent in the medicinal plant garden and greenhouse. Problems are given on the cultivation of a few important alkaloid-, glycoside-, and oil-yielding plants. Herbicides and insecticides are studied. Preparation of herbarium specimens. Analysis of marketing and market values. Pr., 14. Youngken

111. Glandular Products. (3) 3 lectures. The study of substances used in pharmacy produced by exocrine and endocrine glands. Among such substances are animal glandular extracts and hormones. Pr., 14, Zool. 8. Youngken, Neva

112. Serums, Vaccines, and Allergens. (2) 2 lectures. The study of the production, quality, and use of serum, vaccine, virus and allergenic products currently employed in the prevention and treatment of disease. Pr., 14, 111, Microbiology 101. Youngken, Neva

199. Research Problems. (1 to 5) Open to qualified juniors, seniors, and graduate students. Research problems in pharmacognosy. Youngken, Neva

Course for Graduates Only

304. Research. (Maximum of 25 credits for M.S.; 45 for Ph.D.) Goodrich, Youngken, Neva

Phamaceutical Chemistry and Toxicology

Professor Fischer; Assistant Professor Arrigoni; Instructors Krupski, Hall

125. Gravimetric Quantitative Analysis. (5) 2 lectures, 1 quiz, 2 laboratories. The principles of gravimetric analysis, including its application to pharmaceutical compounds. Pr., Chemistry 10. Hall

126. Volumetric Quantitative Analysis. (5) 2 lectures, 1 quiz, 2 laboratories. The principles of volumetric analysis, including its application to drugs and preparations of pharmaceutical importance. Pr., 125. Hall

127. Urinalysis. (2) 1 lecture, 1 laboratory. The qualitative and quantitative detection and determination of physiological and pathological constituents of urine. Pr., 126 and Chemistry 38. Hall

128. Drug Assay. (3) 1 lecture, 2 laboratories. The assay of various official products involving the application of special analytical techniques and a study of the methods of standardization of pharmaceutical products. Pr., Ph'chem. 126, Chemistry 38. Hall

140. Organic Medicinal Products. (3) 3 lectures. The nomenclature, properties, reactions, and synthesis of organic medicinals. Pr., Chemistry 39. Hall

195-196. Pharmaceutical Chemistry. (5-5) 2 lectures, 1 recitation, 2 laboratories. The pharmacy and chemistry of carbohydrates, proteins, fats, fixed and volatile oils, waxes, glycosides, resins, dyes and preservatives used in food, and other plant and animal principles. The labora-

tory work consists of qualitative tests and quantitative methods for determining component parts. Pr., 126 and Chemistry 39. Fischer

197. Pharmaceutical Chemistry and Toxicology. (5) 2 lectures, 1 recitation, 2 laboratories. History, source, structure, synthesis, qualitative detection, and quantitative determination of alkaloids. Includes the separation and identification of poisons from animal tissues. Pr., 126 and Chemistry 39. Fischer

199. Research Problems. (1 to 5) Open to qualified juniors, seniors, and graduate students. Research problems in pharmaceutical chemistry. Fischer, Arrigoni

Courses for Graduates Only

211-212-213. Advanced Pharmaceutical Chemistry. (3-3-3) 1 lecture, 2 laboratories. Offered in 1948-1949 and alternate years following. Deals with pH determinations and buffer systems, fluorometry, gasometric methods of analysis, chromatography, combustion analysis, plant chemistry, spectroscopic methods, the use of various instruments for scientific investigations, and vitamin determinations. Open to qualified students after conference with instructor. Arrigoni

304. Research. (Maximum of 25 credits for M.S.; 45 for Ph.D.) Fischer, Arrigoni

PHILOSOPHY

*Professors Nelson, *Rader; Visiting Professors Sabine, Schneider; Assistant Professors Melden, Smullyan*

1. Introduction to Philosophy. (5) The basic problems of life and existence and how they are answered by the great philosophers. These problems include the relation of religion to science, the nature of morality, the meaning of human history, and the nature of knowledge. Melden, Smullyan

2. Introduction to Social Ethics. (5) The nature of a good social order and right social action. The rival ideals of aristocracy, fascism, liberalism, and socialism. Special emphasis upon the nature and ideals of democracy. Schneider

3. Introduction to Ethics. (5) A study of typical analyses of the problems and principles of morality. Particular reference will be made to the moral problems of justice, good and evil, duty, and freedom. Readings in Plato, Kant, Hume, and Mill.

5. Introduction to Logic. (5) Deductive and inductive logic. Conditions of clear statement and valid reasoning. Propositions, contradictions, definition, inference, typical types of argument, detection and avoidance of fallacies. Probability, and the methods by which theories and laws are established in daily life and in the sciences. Applications of logic to other fields. Nelson, Melden, Smullyan

101-102. History of Philosophy. (5-5) The development of Occidental philosophy from the Sixth Century B.C. until the late Nineteenth Century. Primary stress upon such major figures as Plato, Aristotle, Augustine, Aquinas, Descartes, Hume, and Kant, with attention to their historical and cultural background. Melden

103. Contemporary Philosophy. (5) The revival of the Hegelian philosophy in England and America and the consequent development of pragmatism, positivism, and of realistic tendencies. Readings in Bradley, Peirce, James, Dewey, Russell, Santayana, and Whitehead. Pr., 102. Smullyan

104-105-106. Metaphysics. (3-3-3) Theories or reality; nature of existence; appearance and reality; substance, causation, and law; relation of mind to body; pluralism and monism; the self and human freedom. Pr., 1 or 102 or permission. Nelson

111. Semantics. (5) Survey of the main theories of the origin and functions of language, including its logical, descriptive, emotive, and expressive uses. Attention will be given to semantical problems of the social sciences and the humanities. Pr., 5. Smullyan

112. Philosophy of History. (5) An analysis of the basic concepts employed in historical interpretation.

113. Philosophy of Religion. (5) The origin, nature, and types of religion. The grounds of religious belief: mysticism, faith, reason, and evidence. The main religious problems: free will, immortality, the existence and nature of God, the problem of evil, religion as a basis of ethics, the social implications of religion. Schneider

117. Epistemology. (5) Problems in the theory of knowledge. The nature, possibility, criteria, and limitations of knowledge. Critical evaluation of subjectivism and realism, dogmatism and skepticism, intutionism, pragmatism, empiricism, rationalism, and positivism. Theories of meaning, truth, and perception. Synthesis of various positions around the scientific method. Pr., 1.

128. Art and Nature. (5) An introduction to a theory of experience and the humanities. An analysis (1) of the relation between human experience and human nature; (2) of fine art and natural beauty; (3) of those not-so-fine arts (manners and morals, religion, politics, and philosophy) in which the relation between art and nature is especially significant. Schneider

133. Ethical Theory. (3) A critical examination of the concepts and judgments of value, including an analytical treatment of the notions of right and wrong, obligation, good and bad, and the relations between ethical and aesthetic value. Pr., 2 or 3.

160. Philosophy of John Dewey. (3) An exposition and discussion of John Dewey's ideas on thought, society, and art. Students will read three of Dewey's major works and write an essay. Schneider

173. Chinese Philosophy Since the Ch'in Dynasty. (3) The introduction of Buddhism into China; controversy between Confucianism, Taoism, and Buddhism; their synthesis in Neo-Confucianism in the Sung, the Yuan, and the Ming dynasties; the decline of philosophical interest in the Ch'in dynasty; the new trend of thought after the impact with the West. Shih

184. Reading in Philosophy. (1 to 4, maximum 12) Reading of approved philosophical works. Primarily for graduate students, though under special conditions advanced undergraduates will be permitted to register for this course. Credit will be granted only on passing a written examination on the reading. Pr., permission of Executive Officer of the Department of Philosophy. Staff

193. Advanced Logic. (5) Symbolic logic; deductive systems; types of order; infinity; propositions, classes, relations; logical paradoxes and theory of types; critical examination of logical doctrine and analytic methods bearing on philosophical questions. Pr., 5. Nelson

197, 198, 199. Philosophical Classics. (2, 2, 2) A study of the outstanding ideas of selected classical philosophers. Emphasis will be placed on their relationship to the historical background which occasioned them. Pr., upper-division standing and permission of the instructor.

Courses for Graduates Only

240. Seminar in Aristotle's Metaphysics. (2) A detailed study of the text and argument of Aristotle's Metaphysics. Pr., 101-102. Schneider

250. Seminar in the Philosophy of William James. (2) Particular attention will be given to James's relations to Peirce, Royce, and Santayana. Students will read R. B. Perry's *The Thought and Character of William James* and several of James's major works. Schneider

300. Research. (1 to 6) Pr., permission. Staff

* On leave.

Not offered in 1949-50: 107, Introduction to the Philosophy of Science; 110, Philosophy of Mind; 125, Philosophy in Literature; 129, Philosophy of Art; 207-208-209, Seminar in Philosophy of Science; 214-215-216, Seminar in Logic; 234-235-236, Seminar in Descartes, Spinoza, Leibnitz; 237-238-239, Seminar in Locke, Berkeley, Hume; 241-242-243, Seminar in Plato and Aristotle.

PHYSICAL AND HEALTH EDUCATION

I. FOR MEN

Professor Belshaw; Associate Professors Cutler, Reeves, Torney; Assistant Professors Auernheimer, Kunde, Peek, Stevens; Instructor Mills; Associates Buckley, Clark, Edmundson, Eriksen, Jefferson, McLarney, Ulbrickson, Odell, Swisher

1, 2, 3. Adapted Activities. (1, 1, 1) For handicapped. Gymnastics, games, and sports to meet the needs of the individual. Cutler

4. Basic. (1) May substitute Fr. intercollegiate athletics. Staff

5 to 60. Physical Education Activities. (1 ea. qtr.) Course 5, Pack Forest; 6, handball; 7, basketball; 8, tennis; 9, softball; 10, golf; 11, track; 12, crew (class) pr., swimming; 13, fencing; 14, boxing; 15, tumbling; 16, apparatus and stunts; 17, wrestling; 18, volleyball; 19, swimming; 20, soccer; 21, touch football; 22, badminton; 23, archery; 24, calisthenics; 25, skiing; 26, speedball; 27, bowling; 28, weight lifting; 29, sailing; 30, table tennis; 33, freshman basketball; 34, varsity basketball; 35, freshman crew, pr., swimming; 36, varsity crew, pr., swimming; 37, freshman football; 38, varsity football; 39, freshman track; 40, varsity track; 41, freshman swimming; 42, varsity swimming; 43, freshman baseball; 44, varsity baseball; 45, freshman tennis; 46, varsity tennis; 47, freshman golf; 48, varsity golf; 49, freshman skiing; 50, varsity skiing; 51, freshman volleyball; 52, varsity volleyball; 53, freshman wrestling; 54, varsity wrestling; 55, freshman fencing; 56, varsity fencing; 57, freshman handball; 58, varsity handball.

61, 62, 63, 64, 65, 66. Physical Education Activities for Majors. (1 ea. qtr.) Staff

Health Education Course

75. Personal Health. (2) Health information that affords a basis for intelligent guidance in the formation of health habits and attitudes. Reeves, Staff

II. FOR WOMEN

Associate Professors deVries, McLellan, Rulifson, Wilson; Assistant Professors Broer, Fox, Gunn, Horne, Kidwell, McGownd, MacLean, Waters; Acting Instructors Ferguson, Rowley, Spencer; Associates Krastin, Miller

Lower Division Health Education

10. Health Education. (2) Health problems of freshman women. McLellan, Horne, Gunn, Waters

Activity Courses

11 through 70. Physical Education Activities. (1 ea. qtr.) Course 11, adapted activities; 13, basic activities; 15, archery; 16, intermediate archery; 18, badminton; 19, intermediate badminton; 21, bowling†; 22, intermediate bowling†; 24, fencing; 25, intermediate fencing; 26, golf*; 28, riding; 29, intermediate riding; 31, skiing; 33, stunts and tumbling; 35, tennis; 36, intermediate tennis; 41, basketball; 42, field sports; 43, hockey; 44, softball; 45, volleyball; 48, folk and square dance; 49, intermediate folk and square dance; 51, modern dance; 52, intermediate modern dance; 54, social dance; 55, tap and clog; 57, canoeing; 58, intermediate canoeing; 60, adapted swimming; 61, elementary swimming; 63, intermediate swimming; 64, advanced swimming; 65, rhythmic swimming; 66, diving; 67, life saving; 68, water safety instructor.

76, 77, 78. Physical Education Activities for Freshman Majors. (2, 2, 2) Hockey, soccer, speedball, basketball, badminton, tennis, stunts, and tumbling.

III. PROFESSIONAL COURSES FOR MEN AND WOMEN

81, 82, 83, 84. Physical Education Backgrounds. (1, 1, 1, 1) WOMEN. Fundamental information for methods and materials in the presentation of gymnastics, tap dance, folk dance, social dance, modern dance, swimming and life saving. Basic skills with emphasis for professional training. Horne, Rowley, Kidwell, deVries, MacLean

81, 82, 83, 84, 85, 86. Physical Education Backgrounds. (1, 1, 1, 1, 1, 1) MEN. Fundamental information for the methods and materials in the presentation of swimming, lifesaving, tumbling, apparatus, individual games, boxing, wrestling, recreational games and group games. Torney, Auernheimer, Cutler, Reeves, Kunde, Stevens, Mills

90. Problems in Physical and Health Education and Recreation. (2) MEN and WOMEN. Orientation to these fields; professional opportunities; problems encountered; and qualifications and training necessary for teaching, recreational leadership in communities and organizations, coaching (men), and physical therapy (women). Horne, Peek

95. Personal and General Hygiene. (3) MEN. Advanced course designed primarily for professional students in physical education. Pr., sophomore standing. Reeves

98. Officiating. (2) MEN. Techniques of officiating football, basketball, baseball, track and field, swimming, tennis, volleyball, softball, speedball, and soccer. Pr., sophomore standing. Staff

101. Methods and Materials in Gymnastics, Stunts, and Tumbling. (3) WOMEN. Methods and opportunities for presentation of these activities including marching tactics. Pr., or accompanying course, Anat. 110 and Zool. 58, and P.E. 16. MacLean, Broer

104, 105, 106. Officiating. (2, 2, 2) WOMEN. Techniques for officiating in field hockey, volleyball, aquatics, basketball, badminton, softball, and tennis; opportunity for national and local ratings. Pr., junior standing or permission. Fox

109. The School Dance Program. (2) MEN and WOMEN. Practice in basic skills and dances in areas of folk, square, and social dancing; methods and opportunity for presentation, including "calling"; source materials; organization of co-educational dance program. Pr., junior standing or permission. Wilson

111. Rhythmic Activities for Small Children. (2) WOMEN. Observation of children. Pr., junior standing. deVries

112. Elementary School Athletic Program. (3) WOMEN. Program planning, small group play, and team game activities for elementary grades. Rulifson

115. Physiology of Muscular Exercise. (3) MEN and WOMEN. Relation to physical activities. Muscular efficiency, fatigue, recovery, chemical changes, and neuro-muscular control, with special reference to games, sports, corrective work and body mechanics. Pr., Zool. 58 or 18. Belshaw

116. First Aid and Safety. (3) MEN and WOMEN. May satisfy both the Standard and Advanced American Red Cross First Aid Certification. Includes safety education in schools. Pr., junior standing for men. Reeves, MacLean

118. Analysis of Rhythm. (3) WOMEN. Rhythmic form and analysis; 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., 81, 82, 83. deVries, Wilson

122. Kinesiology. (3) MEN and WOMEN. Analysis of leverage in body movement and problems of readjustment in relation to body mechanics and to physical education activities. Pr., 115, Zool. 58, Anat. 103. Cutler

123. Community Recreation. (2) Kunde

124. Playground Programs. (3) MEN and WOMEN. Kunde

126. Observation and Practice Teaching. (In Recreation) (2 or 4) MEN and WOMEN. Forty hours of observation and participation in organized recreation for different age groups. Pr., recreation major, senior standing, or permission. Camp or recreation experience of one summer for women. For men, 2 credits; for women, 4 credits. Kunde, McLellan

127. Tests and Measurements. (3) MEN and WOMEN. Their place in health and physical education; criteria for selection; formulation of a testing and measuring program. Pr., senior standing. Cutler

128. Organization and Administration of Camp Programs. (3) MEN and WOMEN. The educational and social significance of camping; organization of activities anl problems of administration. Pr., junior standing, Psych. 1, Soc. 1, and by permission. McLellan, Kunde

129. Methods in Teaching First Aid and Safety. (2) MEN and WOMEN. Student may satisfy the requirements for an Instructor's First Aid Certification in the American Red Cross. Pr., 116 and senior standing. Reeves

135. Adapted Activities. (3) MEN and WOMEN. Atypical cases from the standpoint of individual needs. Pr., 115, 122, Zool. 58 or 18. Waters, Cutler

136. Athletic Training and Conditioning. (1) MEN. Pr., 116, and senior standing. Clark

140. Administration of Intramural Sports. (3) MEN. Pr., junior standing. Stevens

145. Principles of Physical Education. (3) MEN and WOMEN. Social, biological, and educational foundations. The place of physical education in the school program. Pr., Zool. 58 or 18, Soc. 1, Psych. 1, and junior standing. Peek

150. The School Physical Education Program. (3 or 2) MEN and WOMEN. Problems of organization and administration. Pr., 145, senior standing or permission; or 162, 163, 164 for women. For men, 3 credits; for women, 2 credits. Torney, Wilson

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*Golf instruction fee (payable to golf club), per quarter, $3.
†Bowling instruction fee (payable at bowling alley).

153. Methods and Materials in Health Teaching. (3) MEN and WOMEN. Health instruction in elementary, junior and senior high schools, including subject matter, source material, and method. Pr., senior standing, 145, 165, Zool. 58 or 18. McLellan

155. Dance Composition. (2) WOMEN. Practice in modern dance; analysis of choreography; opportunity for creative work. Pr., 51, 118. deVries

156. Methods and Materials in Teaching Modern Dance. (2) WOMEN. Sources of materials; their selection and organization; methods of presentation; music, and types of accompaniment. Pr., 83, 118, and by permission. deVries

158. Methods in Teaching Apparatus, Tumbling, and Stunts. (2) MEN. Pr., 62 and 82, or permission. Auernheimer

159-160. Dance Production. (2-2) WOMEN. Costuming, lighting, staging for dance concerts and festival programs. Pr., 83, 118, and by permission. deVries

161. Methods in Teaching Boxing and Wrestling. (2) MEN. Pr., 64 or 84, or permission. Mills, Stevens

162. Methods and Materials in Teaching Folk, Tap, and Clog Dancing. (2) WOMEN. Methods and materials and opportunities for presentation of these activities as well as social dancing. Pr., or accompanying courses, 81, 82, 118. Wilson

163. Methods and Materials in Teaching Sports. (3 or 2) MEN and WOMEN. Women, 3 credits; pr., 76, 77, 78, 112. Men, 2 credits; pr., 63-83, 66-86, or permission. Program planning, methods in teaching team and individual sports including volleyball, basketball, field hockey, soccer, speedball and other field games, softball, tennis, and badminton. Rulifson, MacLean, Peck

164. Methods in Teaching Swimming. (3 or 2) MEN and WOMEN. Includes diving, lifesaving, and direction of camp waterfront program. Women, 3 credits; pr., 84 and 57, or permission; men, 2 credits; pr., 61-81, or permission. MacLean, Torney

165. The School Health Education Program. (3) 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. Belshaw

166. Coaching. (0) WOMEN. Pr., junior standing, or permission. Fox, Staff

170. Methods in Teaching Football. (2) MEN. Pr., junior standing. Odell

171. Methods in Teaching Basketball. (2) MEN. Pr., junior standing. McLarney

172. Methods in Teaching Track and Field. (2) MEN. Pr., junior standing. Edmundson

173. Methods in Teaching Baseball. (2) MEN. Pr., junior standing. McLarney

193. Problems in Athletics. (3) MEN. The place of interschool athletics in education. Control, finance, eligibility, safety measures, publicity, and public relations. Qualifications and duties of coaches, managers, and officials. Pr., 145, 150. Torney

Teachers' Course in Physical Education. (See Educ. 75U & V)

For additional courses in Health Education, see School of Home Economics, School of Nursing, School of Medicine, and Department of Public Health.

Courses for Graduates Only

201. Seminar in Physical Education. (3) MEN and WOMEN. Pr., 145, 150. Broer, Belshaw

203. Seminar in Health Education. (3) MEN and WOMEN. Pr., 145, 153, 165. Waters

206. The Curriculum. (3) MEN and WOMEN. Selection and organization of program content in relation to such problems as characteristics and needs of pupils and local conditions. Pr., 145, 150. Kunde

208. Administration of Recreation. (5) Pr., 124, 145, or permission. Kunde

300. Research. (2 to 5) Staff
A—Physical Education
B—Tests and Measurements
C—Physiology of Exercise
D—Health Education
E—Recreation
Thesis (6 to 9)

PHYSICS

Professors Utterback, Henderson, Uebling; Associate Professor Neddermeyer; Assistant Professors Cannon, Clark, Farwell, Geballe, Higgs, Jacobsohn, Kenworthy, Sanderman, Schmidt, Streib; Instructor Garber

Students not in engineering must elect Physics 4, 5, 6, unless they have had a year of high school physics.

1★, 2★, 3★. General Physics. (5, 5, 5) 1★: Mechanics and sound; 2★: Electricity and magnetism; 3★: Heat and light. Pr., one year of high school physics for 1; 1 for 2 and 3. For physical science majors only.

1B, 2B, 3B. General Physics. (5, 5, 5) 1B: Mechanics and sound; 2B: Electricity and magnetism; 3B: Heat and light. Pr., one year of high school physics for 1; 1 for 2 and 3.

4, 5, 6. General Physics. (5, 5, 5) Same as 1, 2, 3. Pr., plane geometry; 4 pr. to 5 and 6.

10. Survey of Physics. (5) Students who expect to continue with physics should begin with 1 or 4.

12, 13. Physics for Architectural Students. (5, 5) Pr., Physics 1. Kenworthy

50. Sound and Music. (5) For speech and music majors. Staff

54. Elementary Photography. (4) The principles and practice of the elementary photographic processes. Laboratory experience in the fundamental photographic procedures. Pr., high school physics or chemistry. Higgs

70. Physics for Nurses. (5) Selected physical theories and principles and their applications to various nursing situations and to hospital equipment. Sanderman

90. Selected Topics in Physics for Home Economics Majors. (5) Selected topics in physics with applications chosen from daily life and from the various commercial fields open to home economics students. Sanderman

97, 98, 99. Physics for Engineers. (4, 4, 4) A course stressing the basic principles of physics with practice in the application of these principles by the solution of a large number of problems. The derivation of necessary relationships from first principles is emphasized rather than simple substitution in formulae. Pr., one year high school physics, Math. 31 and taking calculus, G.E. 12 or C.E. 90. Uehling, Henderson

101, 102. Introduction to Modern Physics. (3, 3) Some fundamental concepts of the particles of modern physics. The atomic character of electricity. The photon character of radiation. The positron. The neutron. The mesotron. The existence of isotopes. The nature of cosmic rays. Introduction to nuclear reactions. Pr., 3 or 6. Utterback

105, 106. Electricity. (3, 3) Elementary theory of direct, transient, and alternating currents in circuits involving resistance, capacitance, inductance, and non-linear elements. Elementary electrostatic theory; field intensity and potential; Gauss's Law; dielectrics; capacitance. Elementary electromagnetism; Ampere's Law; the magnetic field; Faraday's Law; magnetic materials; inductance. Vacuum tubes; amplifiers; electrical machinery. Laboratory: Use of galvanometer, potentiometers, simple bridges, electrostatic instruments, thermal, rectifying elements, photoelectric elements, magnetic measurements, vacuum tube devices. Pr., 3 or 6. Streib

109. Pyrometric Measurements. (2) Pr., Physics 3. Utterback

115. Photography. (4) A quantitative study of the more important photographic processes; photographic optics; lighting; color photography; the application of photography to the sciences and arts. Pr., 54. Staff

140. Sound. (3) A study of the sources of sound, transmission in different media, and elements of acoustics. Pr., 3 or 6. Kenworthy

150. Heat and Introduction to Thermodynamics and Kinetic Theory. (3) Concepts of heat and energy changes. Experimental laws of heat and thermal reactions. Ideas of reversibility, entropy, etc. The application of general principles to specific cases. Pr., 3 or 6. Utterback

154. Low and High Frequency Measurements. (4) Measurement of frequency and measurement of impedance as a function of frequency; the production, amplification, propagation, and detection of electromagnetic oscillations at low and high frequencies; the analysis of electromagnetic circuit and field conditions. Pr., 106, calculus. Uehling

155. Introduction to Modern Physics for Electrical Engineers. (3) The electrical nature of matter; electrolysis, gaseous discharges; discovery of the electron, the electronic charge. Atomic and nuclear structure; the Einstein mass-energy relation; atomic and nuclear binding energies, Rutherford Scattering and nuclear sizes. The Quantum Theory; Planck radiation law, photoelectric effect, X-ray production, Compton effect, pair production, Bohr theory of the hydrogen atom. Wave Character of Matter; deBroglie hypothesis, electron and neutron diffraction. Nuclear Physics: radioactivity, nuclear reactions, the cyclotron, chain reactions. Pr., senior in E.E. Schmidt

160, 161. Optics. (3, 3) Lectures and laboratory work in wave motion and harmonic analysis, interference and diffraction, polarization, introduction to electromagnetic character of light and interactions with matter, geometrical optics. Pr., 3 or 6, calculus. Clark

167, 168, 169. Special Problems. (†) Pr., permission. Staff

170. Spectrometry. (3) The theory and use of spectroscopic equipment; the practice of qualitative and quantitative spectrum analysis. Pr., 160 or permission. Staff

180. History of Physics. (2) Pr., 3 or 6. Staff

185. Nuclear Physics. (3) Natural radioactivity; alpha, beta, and gamma spectra, nuclear energy states, energy-mass conservation. Properties of the radiations; stopping power and range for charged particles, absorption of gamma rays by photoelectric and Compton effects and by pair production. Accelerators, artificial disintegrations, examples of reactions, measurement of reaction energy. Induced radioactivity. Nuclear structure, systematics of the stable nuclei. Pr., 102. Neddermeyer

191, 192. Theoretical Mechanics. (4, 4) An analytical study of the basic theorems of classical mechanics, utilizing vector methods. An introduction into the methods of Hamilton and La Grange with all basic principles well illustrated by a large number of problems which the student solves. A laboratory accompanies the class work. Pr., Math. 43 or 109. 30 credits in physics. Geballe

195, 196. Experimental Atomic Physics. (3, 3) A laboratory course designed to acquaint the student with a group of phenomena representative of modern experimental atomic physics. Pr., 30 credits in physics. Higgs

Courses for Graduates Only

200, 201. Mechanics. (†, max. 6, 6) Includes dynamics of a particle and of rigid bodies, generalized coordinates and LaGrangian theory, variational principles. Hamilton's equations of motion, vibration, and normal coordinates. Pr., 40 hours of physics, Math. 114 concurrently.

209, 210. Atomic, Molecular, and Nuclear Structure. (max. 6, 6) A study of the energy level systems of nuclear, atomic, and molecular aggregates of elementary particles based primarily on the vector model and other phenomenological modes of description; radioactive transitions and selection rules; atomic and molecular spectra; nuclear interactions and transitions. Pr., Physics 201 or permission.

213, 214, 215. Electricity and Magnetism. (†, max. 6, 6, 6) A study of the properties of electric and magnetic fields as boundary value problems. Practice in the application of harmonic function and conformal representation. Electrodynamics and a study of electromagnetic waves in empty space and material media. Pr., Physics 201.

218, 219, 220. Quantum Mechanics. (max. 6, 6, 6) Pr., Physics 209 and 213.

224. Thermodynamics and Statistical Mechanics. (†, max. 6) Pr., Physics 201.

225. Thermodynamics and Statistical Mechanics. (max. 6) Pr., Physics 218.

228, 229. Current Problems of Physics. (max. 6, 6) Discussions of several active research fields including in each case a broad survey of its background; emphasis on those concepts which meet with general acceptance, as well as those at variance with experiment or untested, and a detailed study of at least one recent paper in the field. Pr., Physics 218.

250. Seminar. (1-2)

252. Conduction Through Gases. (†, max. 6) Pr., Physics 201 and 210.

254. Hydrodynamics. (5) Pr., Physics 201.

260. Nuclear Physics. (†, max. 6) The many body problems of nuclear processes; the dispersion formula; detailed theory of light and heavy nuclei; nuclear forces; nuclear movements; capture, scattering, and disintegration processes; fast and slow neutron processes; theory of elementary particles. Pr., Physics 220.

266. Theory of Collisions. (†, max. 6) Applications of quantum mechanical principles to the study of atomic and elementary particle interactions. The general theory of elastic and inelastic scattering (including the effects of statistics, exchange, and spin) is fully developed. Applications are made to the calculation of probability cross-sections for many important processes not involving the emission and absorption of light. Particular attention is given to recent experiments on the interaction of elementary particles and the determination of the fundamental laws of force. Pr., Physics 220.

300. Research. (†)

Not offered in 1949-1950: 251, X-Rays; 256, Mathematical Theory of Sound; 258, Cosmic Rays; 262, Theory of Spectra; 264, Relativity; 268, Theory of Solids; 270, Radiation Theory; 272, Foundations of Statistical Mechanics; 274, Atomic and Molecular Interaction; 276, Selected Topics in Experimental Physics; 278, Selected Topics in Theoretical Physics.

POLITICAL SCIENCE

Professors Martin, Ballis, Bone, Cole, Cook, Levy, Mander, Shipman, Webster; Visiting Professor Hsiao; Associate Professors von Brevern, Michael; Assistant Professors Hitchner, Hossom, Maki; Acting Assistant Professor Riley; Associate Urquhart; Lecturer Sheelle

Elementary Course Primarily for Freshmen

1. Survey of Political Science. (5) Principles and problems of government. The state in theory, law, politics, and administration. Bone, Mander, Hitchner

Intermediate Courses Primarily for Sophomores

52. Introduction to Public Law. (5) Legal construction of political organization; the state and the individual; leading concepts in constitutional, international, and administrative law. Open to freshmen who have had 1. Cole

54. International Relations. (5) Rise of modern states; alliances, imperialism, the League of Nations; present and future problems. Open to freshmen who have had 1. Riley

56. American Political Institutions. (5) American political ideas as formalized into institutions; major principles of the American governmental system, historical and contemporary. Open to freshmen who have had 1. Hossom

58. Government in Action. (5) Problems of political leadership; public opinion and political organization; bureaucratic control. Open to freshmen who have had 1. Hossom

74. Power and the State. (5) Pragmatism in politics; Machiavellian diplomacy; Caesarism and the "leader principle"; military considerations. Riley

Prerequisite for the following courses is Political Science I

Upper-Division Courses

101. The American Constitutional System. (3) Fundamental principles; function; evolution; unwritten constitution. Recent tendencies. Webster

111. The Western Tradition of Political Thought. (5) Origin and evolution of the major political concepts of the Western world. Nineteenth-century modifications.

112. American Political Thought. (5) Major thinkers and movements from the Colonial period to the present.

113. Contemporary Political Thought. (5) Changing political ideas since the French and Industrial Revolutions, as bases for contemporary philosophies of democracy, communism, and fascism.

114. Oriental Political Thought. (5) Theories of the Oriental state as exhibited in the writings of statesmen and philosophers.

115. Analytical Political Theory. (5) An analysis of the major concepts of political theory such as state, authorities, sovereignty, law, liberty, rights, equality, from a non-historical viewpoint.

116J. **Introduction to Roman Law.** (5) Its importance, sources, and civil procedure; classic law of persons, property, contracts, torts, and succession in the light of modern research. For advanced undergraduates; open to qualified sophomores. Levy

118. **The Evolution of Western Political Institutions.** (5) The conflict between law and force in conditioning the character of modern government. Cole

121. **American Foreign Policy.** (3) Major policies as modified by recent developments. International cooperation. von Brevern

122. **The Foreign Service.** (3) Department of State; diplomatic and consular services; American diplomatic practice and procedure. Riley

Law 122. **International Law.** (3, 3) As developed by custom and agreement and as exhibited in decisions of international tribunals and municipal courts. Martin

123. **International Relations of the Western Hemisphere.** (5) The Monroe Doctrine; Pan-Americanism; special interests in the Caribbean; hemispheric solidarity. "Good Neighbor" policy; Latin America and the War. von Brevern

124. **Contemporary International Relations in Europe.** (5) Foreign policies of the major powers; international organization between the two World Wars; recent and contemporary developments. Hitchner

127. **International Government and Administration.** (5) Law and organization in international relations; foreign offices; regional and global international institutions. Mander

128. **The Specialized Agencies of International Government.** (5) International organization for economic, social, and cultural cooperation; machinery, policies and problems. Hitchner

129. **International Relations in the Far East.** (5) China, Japan, Russia, and the Philippines; the Western powers and the Orient; the Far East in world politics. Maki

130. **International Relations in the Middle and Near East.** (5) Egypt, Turkey, Afghanistan; mandates; critical problems today. Mander

132. **American Foreign Policy in the Far East.** (5) In relation to diplomacy, trade, and internal politics. Michael

133J. **Europe 1914-1945.** (5) Broad outline of history from World War I to the end of World War II. Levy

135. **Comparative Colonial Policies and Administration.** (5) Colonial policies of leading powers; government of dependent peoples; mandates; national versus international control. Mander

136. **National Power and International Politics.** (5) Geographical, economic, and political foundations of the Major Powers as factors in international relations of the world. For advanced undergraduates only. von Brevern

137. **The Balkans in Politics and Diplomacy.** (5) The governments of southeast Europe; constitutional systems, political structure, and international relations of the lower Danubian states, Yugoslavia, Bulgaria, Greece, and the Levant. von Brevern

141. **Comparative Federal Systems.** (5) Federalism as exhibited in the governments of Canada, Australia, Switzerland, and Russia. Hitchner

143. **The Authoritarian State.** (5) Ideologies and institutions of the "power" states, with special consideration of Germany and the Soviet Union. von Brevern

145. **Comparative Political Institutions.** (5) Analytical study of doctrines, forms, functions, processes, and controls of all governmental systems, without regard to region or country. Martin

147. **Comparative Governments of the Far East.** (5) Structure and organization in China and Japan; puppet regimes; colonial administration. Maki

148. **Modern British Government.** (5) Contemporary British government and politics; current problems of the parliamentary system, political parties, civil liberties. Hitchner

150. **Government and Interest Groups.** (5) Agrarian, labor, professional, business, and ethnic interest in politics; impact on representative institutions and governmental processes. Bone

151. **The American Democracy.** (5) Nationalism and federalism; regionalism; the presidency; the representative system; judicial institutions; reconciliation of policy and administration. Hossom

152. **Political Parties and Elections.** (5) Organization and methods; the nature and future of party government. Bone

153. **Introduction to Constitutional Law.** (5) Growth and development of the United States Constitution as reflected in decisions of the Supreme Court; political, social, and economic effects. Cole

154. **Administrative Management.** (5) Introduction to the problems of the public service, emphasizing managerial supervision and control, personnel administration, budgetary and fiscal administration, administrative analysis, program planning and reporting. Shipman

155. **Introduction to Public Administration.** (5) Including relationship of administration to other agencies of government. Shipman

157. **The Legislative Process.** (5) Organization and procedure of legislative bodies with special reference to the theory and practice of representative government, lobbying and bicameralism. Bone

158. **Political Processes and Public Opinion.** (3) Organization and implementation of opinion for the purpose of controlling government, and public opinion as a force in the development of public policy; public relation activities of government agencies. Bone

161. **Government and the American Economy.** (5) Government regulation, promotion and services affecting general business, public utilities, agriculture, banking, investments, and social welfare. Hossom

162. **Problems of Municipal Government and Administration.** (5) The city charter; relations with the state and other local units; municipal functions and services, with reference to municipalities in the state of Washington. Webster

163. State and Local Government and Administration. (5) Structure; functions; procedures; suggested reorganization; with special reference to the state of Washington and its units of local government. Webster

164. Public Policy in Governmental Planning. (3) Historical development; legal basis of national, state, and local planning agencies; general scope of their powers and functions; policy determination; coordination with administrative departments. Hossom

166. Chinese Government. (5) Imperial government; transition period; national government; present forms of local government; constitutional draft; present political situation. Michael

167. Introduction to Administrative Law. (5) Creation of administrative authorities, scope of limitations on their powers, remedies, judicial control of administrative action. Shipman

168. Comparative Administrative Systems. (5) Principles and practice of administration under foreign governments, especially in Europe and the British Commonwealth. Hossom

169. Japanese Government. (5) Emergence of modern government; the emperor; position of the military; central and local government; diet; parties and popular movements. Maki

174. Theory and Practice of the Government of the State of Washington. (3) Not open for credit for majors in political science. Bone

176. Political Institutions of the Soviet Union. (5) Dynamics of Soviet political theory; Leninism and Stalinism; forms and functions of governmental and party institutions; Soviet constitutionalism, federalism, legal and administrative agencies. Ballis

178. Foreign Relations of the Soviet Union. (5) Nature and objectives of Soviet foreign policy; ideological and strategic factors; Bolshevism vs. fascism; Comintern and Cominform; League of Nations and the U.N.; East-West conflict. Ballis

Course for N.R.O.T.C. Only

170, 171, 172. Foundations of National Power. (3, 3, 3) Basic factors in international politics in terms of population, national resources, political organization of national states, and the distribution of power among them; the strength, aims, and policies of the major powers. von Brevern

Public Finance. See Business Administration 150-151.

Courses for Advanced Undergraduates

195. Honors Course for Seniors. (5) Open to qualified majors in the last term of the senior year. Staff

199. Individual Conference and Research. (2 to 5) Pr., permission. Staff

Courses for Graduates Only

201, 202, 203. Graduate Seminar. (3, 3, 3) Oral and written studies in contemporary problems, domestic and foreign. For candidates for higher degrees in political science. Martin

211, 212, 213. Seminar in Readings in Political Science. (3, 3, 3) Writings of first importance of the masters in political science; the political classics. Required of candidates for higher degrees. Cole

214. Seminar in Problems in Political Theory. (3 to 5) Selected topics, historical and conceptual, national, regional, and universal.

215. Methods and Research in Political Science. (3 to 5) Political science and the social sciences; methods of research; bibliography of general and special fields.

217. Seminar in the Theory of International Relations. (3) A discussion of the principal theories underlying the interstate relations. The sovereign state as a unit in the community of states. The theory of the state and the theory of the society of nations. Mander

221, 222, 223. International Government and Organization. (3, 3, 3) Advanced studies, with emphasis on constitutional organization and administrative procedures, with particular reference to the United Nations, Specialized Agencies and other recent developments. Mander

224, 225, 226. Seminar in Foreign Policy. (3, 3, 3) The European states system. Foreign policies of the major European powers. Alliances and the balance of power. Leading principles of American foreign policy. Current problems in American diplomacy. International practice and procedure. International conferences. Foreign offices. Martin

233. Seminar in Regional Foreign Policy. (3) Regionalism in the world order and economy. The "region" as a basis of foreign policy. Foreign interests and policies of the major regions of the world. The USSR; Central Europe; Western Europe; the British Empire; the Middle and Near East; the Far East; Latin America. Mander and Staff

234. Seminar in Roman Law. (3) Modern research. Readings in Justinian's *Institutes* and *Digest* in English translation. Levy

251-252-253. The Administrative Process. (3-3-3) Forms and characteristics of administrative activity, organization, and function; the executive; administrative discretion; administrative legislation and adjudication; responsibility and control. Pr., admission to graduate curriculum in public administration or special approval. Shipman

254-255-256. Public Management. (3-3-3) The methods and problems of managing public activities emphasizing work supervision and control, management staff problems, personnel administration, budgetary and fiscal administration, organization and methods analysis, reporting techniques, program planning and control. Shipman

257-258-259. Public Law. (3-3-3) Constitutional and legal concepts governing governmental authority and institutions and the conduct of governmental activities. Pr., admission to graduate professional curriculum in public administration or special approval. Cole

261-262-263. Administrative Problems. (3-3-3) Supervised analysis of selected administrative problems in local, state, and national government and the preparation of action reports. Pr., admission to graduate curriculum in public administration. Shipman

300. Individual Research. (2 to 5) Staff

Seminar in Far Eastern Diplomacy. See Far Eastern 225, 226.
Constitutional Law. See Law 119, 120.
Administrative Law. See Law 121.
Propaganda as a Social and Political Force. See Journalism 116.

Not offered in 1949-50: 117, Modern Theories of Law; 142, Comparative Unitary Systems.

PSYCHOLOGY

Professors Loucks, Edwards, Esper, Guthrie, Horst, Smith, Strother, Wilson; Associate Professors Bijou, Horton; Assistant Professors Dudek, Heathers, Hermans, Thomson

Majors must maintain a grade-point average of 2.5 or better in Psychology subjects taken at this University. Candidates for advanced degrees in Psychology (M.S., Ph.D.) must present a 3.0 or better all-University grade-point average for their senior year to be admitted to the Graduate School.

1. General Psychology. (5) An introduction to the principles of human behavior. Staff
2. Psychology of Adjustment. (5) Applications of psychological principles to the problems of everyday life. Pr., 1. Wilson
3. Applied Psychology. (3) Psychological approaches to human efficiency and happiness; with emphasis upon vocational and industrial, advertising, and consumer problems; and with applications to legal and medical fields. Pr., 1.
4. Industrial Psychology for Architects. (3) A survey of the methods of psychology as they apply to the problems of the architect. The course stresses a research point of view in regard to awareness of psychological problems rather than specific techniques for solving them. No prerequisites. Thomson

51. Advanced General Psychology. (5) A survey of the fundamental principles and experimental methods of psychology, with laboratory demonstrations. For psychology majors only. Pr., 1. Hermans

102. The Neural Basis of Behavior. (5) The anatomical and physiological principles underlying the integrative action of the nervous system, and the relation of these principles to the problems of behavior. Pr., 10 crs. biology and permission. Esper

103. Physiological Psychology. (5) The physiological process in attention, emotion, fatigue, and sleep. Recent research on muscle potentials and brain waves. Pr., 102 or permission. Loucks

106. Experimental Psychology. (5) Practice in planning, conducting, and reporting laboratory research. Pr., permission. Loucks

107. Advanced Experimental Psychology. (5) Principles of the design and operation of psychological apparatus. Supervised individual research. Pr., 106. Loucks

108. Statistical Methods. (5) Application of statistical methods to psychological problems. Description of psychological data in terms of averages, measures of variability, and measures of relationships. Problems of prediction. Frequency distributions and elementary sampling theory. Pr., 51 or permission. Edwards

111. History of Psychology. (5) The experimental and theoretical backgrounds of modern psychology, especially in the 19th Century. Pr., 51 or permission. Esper

112. Modern Viewpoints in Psychology. (3) The theoretical and experimental bases for behaviorism, structuralism, Freudianism, and Gestalt; the integration of these into contemporary psychological systems. Pr., 15 credits in psychology. Esper

114. Psychology of Motivation. (2) A survey of theories and experimental research concerning the role of organic conditions and of social rewards and punishments in determining the direction and efficiency of effort. Pr., 1. Staff

116. Animal Behavior. (3) The principles of animal behavior in relation to human behavior. Special emphasis upon the principles underlying the organism's mode of adjusting to its environment. Pr., 51. Loucks

117. Superstition and Belief. (2) Why are we superstitious. Psychological analysis and historical development of certain false opinions. Pr., 1. Smith

118. Social Psychology. (3) Psychology of human institutions. Pr., 1. Guthrie, Edwards

119. Animal Laboratory. (5) Supervised training in experimental work with animals. Pr., 116. Loucks

120. Psychology and the Arts. (2) *

121. Vocational Psychology. (3) Employment trends; analysis and classification of occupations and of worker characteristics; the principles of selection of personnel and of individual guidance. Pr., 1. Thomson

122. Industrial Psychology for Engineers. (3) A survey of important psychological problems in business and industry. The course stresses awareness of psychological problems rather than techniques of solving them. For students in the College of Engineering only. Pr., Humanistic-Social Studies 63 or 65 and junior standing in Engineering. Thomson

* Not offered 1949-50.

123. **Industrial Psychology.** (3) A survey of the applications of psychological principles and methods of investigation to problems of industrial relations. Employee selection, training and motivation. Factors influencing morale and employee productivity. Criteria of job proficiency. Pr., 1. Thomson, Horst

124. **Psychology of Learning.** (5) A survey of theories and experimental research in the field of human learning. Pr., 108. Staff

126. **Abnormal Psychology.** (5) Origin and mechanism of behavior that interferes with proper adjustment; physiological pathology; psychotherapy. Pr., 15 crs. in psychology, including Psych. 2. Staff

127. **Tests and Measurements.** (5) Survey of standard group psychological tests and of their theoretical and statistical bases. Practice in administering and scoring group tests. Pr., 108. Dudek

128. **Psychology of Social Attitudes.** (5) Theory and techniques of attitude-scale construction. Scaling by the methol of equal-appearing intervals, the method of summated ratings, and scale analysis. Applications of attitude scales in education, industry, and the social sciences. Determinants of attitudes and experimental studies of attitude change. Pr., 108 or permission. Edwards

129. **Individual Testing I. (Children)** (5) The construction, administration, and scoring of individual mental tests used with children. Pr., 127, 131, and permission. Heathers

130. **Survey of Clinical Psychology.** (2) A survey of the history, fields and methods of clinical psychology. Open only to senior majors in psychology and graduate students in psychology and social work, or by special permission. Strother

131. **Child Psychology.** (5) Individual and social development and their causes, from infancy to adult age. Pr., 1. Bijou, Staff

134. **Individual Testing II. (Adults)** (5) The construction, administration, and scoring of clinical psychological tests used with adults. Pr., 126, 127, and permission. Heathers

139. **Individual Testing III. (Infant and Preschool)** (5) A laboratory course in administration and interpretation of individual psychological examinations of infants and preschool children. Pr., 129, 134, and permission. Staff

140. **Conditioning.** (5) Experimental work on conditioning. Significance for the several fields of psychology. Emphasis on specific research techniques. Pr., 124 or permission. Loucks

141. **Sensory Basis of Behavior.** (5) An account of sensory and perceptual phenomena; sensory equipment; theories of sense-organ function. Pr., 51 or 102 or permission. Horton

143. **Individual Differences.** (2) The interrelationships and patternings of human traits and capacities. Pr., 1. Smith

160. **Psychological Factors in the Design and Operation of Industrial Machines.** (3) A survey of experimental studies on the relation of human abilities and limitations to problems of design and operation of machines, display systems, and special devices. Pr., 1. Horton

199. **Undergraduate Research.** (1 to 3) Pr., permission. Staff

Courses for Graduates Only

205. **Survey of Clinical Psychometrics.** (2) A survey of the nature, development and clinical application of psychological tests. Strother

209. **Experimental Design.** (5) Planning research problems; formulation of hypotheses; techniques of equating groups; sampling problems; factorial design and analysis of variance; interpretation of data. Pr., 108 or permission. Edwards

230. **Projective Personality Tests.** (3) Theory of projective tests. Practice in scoring and interpreting projective tests with emphasis on the Rorschach. Pr., 126, or 129, or permission. Strother

231. **Projective Personality Tests.** (3) Training in interpretation of normal Rorschach records. Review of literature on use of the Rorschach in psychopathology. Pr., 230 or permission. Strother

232. **Projective Personality Tests.** (3) Theory of projective tests. Practice in scoring and interpreting projective tests with emphasis on the Rorschach. Pr., 230 and 231, or permission. Bijou

233. **Introduction to Psychological Clinic.** (3) A laboratory course in observational techniques, history-taking, report-writing and record-keeping in a psychological clinic. Pr., graduate standing in clinical psychology, 130, and permission. Smith

242. **Personality.** (3) A survey of theories of personality development. The psychodynamics of personality organization. Pr., permission. Staff

251. **Psychological Diagnosis.** (3) Provides instruction in selection, administration, and interpretation of diagnostic psychological tests. Open only to second year students in clinical psychology. Pr., 129, 134, and permission. Bijou

252. **Psychological Diagnosis.** (3) Provides instruction in selection, administration, and interpretation of diagnostic psychological tests. Open only to second year students in clinical psychology. Pr., 251 or permission. Strother

257. **Field Work in Clinical Psychology.** (5) A course to provide field training in clinics and institutions for graduate students in clinical psychology. Pr., 129, 134 and permission. Staff

260. **Occupational Analysis.** (3) Survey of methods used in obtaining occupational information and study of current sources. Use of occupational information in industry. Critical characteristics of jobs and methods for determining them. Special emphasis on the use of statistical methods in occupational analysis. Pr., 123, 127. Dudek

261. Employment Psychology. (3) Recruiting and interviewing industrial personnel. Non-test selection tools and procedures. Methods of statistical validation. Development and administration of industrial personnel tests. Ciordination of continuous selection research program with operating procedures. Pr., 123, 127. Thomson

262. Proficiency Evaluation. (2) Fundamental role of systematic proficiency evaluation programs in industry. Development and administration of merit rating programs. Objective measures of employee proficiency. Statistical problems and techniques involved in efficient employee evaluation programs. Pr., 123, 127. Horst

263. Psychological Principles of Industrial Training. (3) Functions and scope of training programs in industry. Development and administration of training programs. Psychological principles of learning applied to industrial training programs. Training aids and their use in various types of training. Experimental and statistical techniques for improving and evaluating training techniques and programs. Pr., 123, 124, 127. Thomson

264. Motivation and Morale in Industry. (2) Techniques for evaluating employee morale. Financial and non-financial techniques for employee motivation. Experimental and statistical procedures necessary for obtaining definite results. Administrative aspects of motivational and morale building programs. Pr., 123, 127.

265. Industrial Efficiency. (2) Survey of experimental work on fatigue and human efficiency and applications to industrial personnel. Relation of equipment and environmental factors to employee productivity. Research techniques in the determination of efficient working conditions. Pr., 123, 127. Thomson

270. The Teaching of Introductory Psychology. (2) A course in methods and materials which is required of associates in the department who are teaching sections of Psychology 1. Pr., permission. Wilson

281. Test Construction. (5) Correlational analysis. Statistical bases of test construction and of the use of test batteries. Practice on test construction. Pr., 108, 127, and permission. Horst

290A, B. Seminar in Theoretical Psychology. (2, 2)

291A, B. Seminar in Physiological Psychology. (2, 2)

292A, B. Seminar in Experimental Psychology. (2, 2)

293A, B. Seminar in Clinical Psychology. (2, 2)

294A, B. Seminar in Animal Psychology. (2, 2)

295A, B. Seminar in Vocational Psychology. (2, 2)

296A, B. Seminar in Social Psychology. (2, 2)

297A, B. Seminar in Industrial Psychology. (2, 2)

298A, B. Seminar in Tests and Measurements. (2, 2)

299A, B. Seminar in General Psychology. (2, 2)

300. Graduate Research. (†) Pr., graduate status in psychology and permission.

Not offered in 1949-50: 120, Psychology and the Arts; 136, Psychology of Social Movements; 145, Public Opinion Analysis; 224, Introduction to Multivariate Psychological Measurement; 242, Personality; 264, Motivation and Morale in Industry.

RADIO EDUCATION

Assistant Professor Adams

70. Backgrounds. (2) History of broadcasting; organization of radio industry; social, educational, and cultural responsibilities of radio. Pr., sophomore standing.

71. Commercial Aspects.(2) Relation of the radio industry to advertising agencies, unions, and the press; laws and regulations controlling radio broadcasting. Pr., sophomore standing.

72. Radio Techniques. (2) Studio organization and operation; radio as entertainment. Pr., sophomore standing.

169. Station Management. (3) Pr., permission.

Radio Courses in Other Departments

Drama 141, 142, 143. Radio Acting and Production. (2, 2, 2)
Drama 144. 145, 146. Radio Writing. (3, 3, 3)
Journalism 135. Radio Advertising. (3)
Journalism 136. Radio News Writing. (3)
Music 108. Music in Broadcasting. (3)
Speech 61. Radio Speech. (3)
Speech 62. Advanced Radio Speech. (3)
Speech 162. Radio Production Methods. (3)
Speech 163. Radio Program Building. (3)

ROMANCE LANGUAGES AND LITERATURE

Professors Nostrand, Chessex, Garcia-Prada, Goggio, W. Wilson; Professors Emeriti Frein, Helmlinge, Umphrey; Associate Professor Simpson; Assistant Professors Creore, David, Keller, Whittlesey, C. Wilson; Instructors Keller, Esteves

The department wants to place each student in whatever course will best meet his individual needs, though no duplicate credit can be granted for duplicate class work. A placement test will gladly be given to any entering student who asks for it. Any of the prerequisites stated can be waived, at the instructor's discretion, and indeed the student with an A or high B standing is encouraged to skip one or more quarters between courses 1 and 101.

The first two high-school years of French or Spanish are to be regarded as corresponding to courses 1-2, 3, at this University, the third high-school year as corresponding to courses 4, 5, 6, and a fourth high-school year, if devoted to advanced composition and conversation, as equivalent to courses 101, 102, 103.

In case a foreign language must be taken to satisfy an entrance deficiency of two high-school units (i.e. four semesters), 15 quarter credits or the equivalent will be required, and students who enter with two semesters of high-school French or Spanish will be required to take courses 21 and 4; with three high-school semesters, course 3.

Terminal credit in course 1 (not 21) may be granted by the executive officer upon recommendation of the student's major department, where this clearly serves the best interest of the student's education. For any other exception involving credit, the student must petition the Graduation Committee, using the blank provided for this and obtaining the endorsements of the department concerned and his major department.

Romance Linguistics and Literature

34, 35, 36, and 134, 135, 136. Comparative Literature of France, Italy, and Spain in English. (3, 3, 3) The purpose of this course is to show the influence of each literature upon the other two and their contributions to human thought, and so provide a literary background for the further pursuit of a more detailed study in each. The course may be counted as an elective in either French, Italian, Spanish, or English, but no more than three credits may be applied towards the fulfillment of the minimum required credits in literature for the major or minor in any of the Romance languages. May be entered any quarter. Lectures and reading. No prerequisites. Goggio

160. The Literature of the Renaissance. (5) See General Literature 160. A. Keller

French

1-2, 3. Elmentary. (5-5, 5) Pr., for 3 is 2 with a grade not less than "C," or three high-school semesters, or equivalent. See 21.

1-2. Elementary. (10) An intensive study of beginning French combining the work of French 1 and 2 into one quarter. Staff

1-2X. Elementary. (5-5) A course designed for the rapid acquisition of a reading knowledge of French. For graduates and specially qualified undergraduates. No auditors.

4, 5, 6. Intermediate. (3, 3, 3) Modern texts, composition, functional grammar. Pr., for 4 is 3, or 21 (21=3R), or four semesters in high school, or equivalent.

10, 11. Elementary French Conversation. (2, 2) Pr., 3 or equivalent; 10 or permission for 11. Staff

21. Basic Grammar Review. (5) Refresher course; should be taken instead of 3 by those who have received a grade lower than "C" in French 2, and by students with two semesters of French in high school. No student may receive credit for both French 3 and 21. No credit for 21 until 4 or equivalent has been completed. Staff

34, 35, 36. Comparative Literature. (3, 3, 3) See Romance Languages 34, 35, 36. Goggio

37, 38, 39. Lower-Division Scientific French. (3, 3, 3) Class reading, with emphasis on constructions and scientific terms. For upper-division scientific French, see 137, 138, 139. Pr., 4 or equivalent. Whittlesey

41. Phonetics. (3) Analysis of sounds, intonation, rhythm; training in correct and natural pronunciation. Upper-division credit to upper-division students when they meet an upper-division standard. Pr., 3 or equivalent. Creore

101, 102, 103. Advanced Composition and Conversation. (2, 2, 2) The first half of 101 will be given to an intensive review of grammar at the intermediate level. Pr., 6 or equivalent. Chessex, David

104, 105, 106. Survey of French Literature. (3, 3, 3) Detailed study of masterpieces from the seventeenth century to the present. Lectures, in French as soon as practicable, on French literature and civilization from the beginning. Pr., 6 or equivalent. Chessex

107, 108. Themes. (2, 2) Writing of original compositions. Pr., 102 or equivalent. Staff

127, 128, 129. Advanced Conversation. (2, 2, 2) For majors and others admitted by the instructor. Pr., 101 or equivalent. Chessex, David

131, 132, 133. Lyric Poetry. (3, 3, 3) Course 131, Renaissance and classical period; 132, eighteenth century and romanticism; 133, the parnassians and symbolists, contemporary poetry. Pr., 6 or equivalent. Creore

137, 138, 139. Upper-Division Scientific French. (2, 2, 2) Individual conferences. Students read material in their own fields. Pr., 37, 38 or 39 with grade "B," or permission. Whittlesey

151, 152, 153. French Literature of the Nineteenth Century. (3, 3, 3) 151: The revolutionary spirit and the early romanticists; 152: Romanticism; 153: Realism. Lectures in French. Pr., 6 or equivalent. Simpson

158, 159. Advanced Syntax. (2, 2) From the teacher's standpoint. Should precede the teachers' course. Pr., 103 or 107 or 108. Staff

171, 172, 173. Seventeenth-century Literature. (3, 3, 3) 171: The preclassical period; 172: The classic generation; 173: The late classic period up to 1715. Lectures in French. Pr., 6 or equivalent. C. Wilson

190. Supervised Study. (†) Staff
Teachers' Course in French. (See Educ. 75K.)

Courses for Graduates Only

201, 202, 203. French Renaissance Literature. (2, 2, 2) 201: lyric poetry—Villon; rationalism—Commines; Italian influences on art and literature—Antoine de la Salle, Marguerite de Valois, Rabelais; 202: the Pléiade and the humanists; 203: philosophical criticism—Montaigne; reformation and counter-reformation—Calvin, d'Aubigné, François de Sales; the theater. Lectures in French, discussions in English. An essay each quarter. Pr., four years of French. David

221, 222, 223. Unified Course in Old French Reading and Philology. (3, 3, 3) This course consists of the literary and linguistic study of Old French texts, the systematic derivations therefrom of principles of phonology, morphology and syntax, and individual investigations of specific problems. Simpson

290. Conferences and Special Studies. (†) Staff

Not offered in 1949-50: 7, 8, 9, Intermediate Grammar; 118, 119, 120, Survey of French Culture; 131, 132, 133, Lyric Poetry; 141, 142, 143, French Drama; 154, 155, 156, Contemporary French Literature; 161, 162, 163, Eighteenth-century Literautre; 181, 182, 183, French Literary Criticism; 213, French Stylistics; 231, 232, 233, History of Old French Literature; 241, 242, 243, French Historical Grammar; 281, 282, 283, Problems and Methods of French Literary History.

Italian

1-2, 3. Elementary. (5-5, 5) Goggio

34, 35, 36. Comparative Literature. (3, 3, 3) See Romance Languages 34, 35, 36. Goggio

121, 122, 123. The Italian Novel. (2, 2, 2) The development of the Italian novel. Reading and discussion of selected novels representative of each century. Pr., 3; or 2, with permission of instructor. Goggio

181, 182. Dante in English. (2, 2) The thought and expression of the *Divine Comedy* against its background of medieval philosophy and art. May be counted as an elective in English major or minor. Goggio

184. Renaissance Literature of Italy in English. (2) Lectures and collateral reading. May be counted as an elective in English major or minor. Goggio

190. Supervised Study. (†) Pr., permission.

Course for Graduates Only

250. Individual Conference. (2 to 5 each quarter) Pr., consent of executive officer.

Not offered in 1949-1950: 111, 112, 113, Modern Italian Literature; 221, 222, 223, Italian Literature of the 12th to the 15th Centuries; 231, 232, 233, History of Old Italian Literature; 243, Italian Historical Grammar; 291, 292, 293, Theses and Special Studies.

Portuguese

1-2, 3. Elementary. (5-5, 5) Esteves

4, 5, 6. Intermediate. (3, 3, 3) Modern texts, composition, functional grammar. Pr., 3 or permission. Esteves

100. Intensive Reading Course. (5) Intensive reading of Brazilian literature for the purpose of acquiring a reading knowledge of Portuguese. Pr., Spanish 101 or permission of the instructor. Esteves

115, 116, 117. Brazilian Literature and Culture (in English). (2, 2, 2) 115: Colonial Period; 116: Empire; 117: Contemporary period. Esteves

190. Supervised Study. (†) To be taken with the permission of the instructor. Esteves

Provençal

234. Old Provençal. (3) Simpson

Spanish

1-2, 3. Elementary. (5-5, 5) Pr., for 3 is 2 with a grade of not less than "C," or three high-school semesters or equivalent. See 21.

4, 5, 6. Intermediate. (3, 3, 3) Modern texts, composition, functional grammar. Pr., for 4 is Spanish 3 or 21 (21=3R), or four semesters in high school, or equivalent.

10, 11. Elementary Spanish Conversation. (2, 2) Pr., 3 or 21 or equivalent; 10 or permission for 11. W. Wilson, Keller

12. Modern Spanish Readings. (2) Pr., 6, prior or concurrently. Staff

21-. Basic Grammar Review. (5) Refresher course; should be taken instead of 3 by those who have received a grade lower than "C" in Spanish 2, and by students with two semesters of Spanish in high school. No student may receive credit for both Spanish 3 and 21. No credit for 21 until 4 or equivalent has been completed. Staff

†To be arranged.

34, 35, 36. Comparative Literature. (3, 3, 3) See Romance Languages 34, 35, 36. Goggio

101, 102, 103. Advanced Composition and Conversation. (3, 3, 3) Pr., 6 or equivalent. W. Wilson

104, 105, 106. Survey of Spanish Literature. (2, 2, 2) From early times to the present. Pr., 12, which may be taken concurrently with 104.

115, 116, 117. Latin-American Literature and Culture (in English). (2, 2, 2) 115: The pre-Hispanic and Colonial periods; 116, the 19th century; 117, the contemporary period.

127, 128, 129. Advanced Conversation. (2, 2, 2) Pr., 102 or permission. A required course for teaching majors.

151, 152, 153. Spanish Literature Since 1700. (3, 3, 3) Pr., 106 or equivalent. Staff

158, 159. Advanced Syntax. (2, 2) Elementary principles of philology and their application to teaching; difficulties of Spanish grammar from the teacher's point of view. Pr., 102 or equivalent. W. Wilson

161, 162, 163. Spanish Literature of the Golden Era. (3, 3, 3) Poetry, drama, historical narrative, prose fiction. Pr., 106 or equivalent. W. Wilson

171, 172, 173. Individual Spanish Authors. (3, 3, 3) Each course will be devoted to one representative Spanish author of any period, according to the needs of the students. Pr., 106 or equivalent.

181, 182, 183. Spanish-American Literature. (3, 3, 3) General survey of the literature of Spanish America. 181: The Colonial Period and Early Years of Independence; 182: The Middle Years of the Nineteenth Century; 183: The Twentieth Century. Pr., 106 or equivalent.

190. Supervised Study. (†) Staff
Teachers' Course in Spanish. (See Education 75Y.)

Courses for Graduates Only

221. Old Spanish Literature. (5) Study of the origins and early development of various types of literature.

231. Epic Poetry. (5) The epic material in Old Spanish literature and its later treatment in poetry and drama. Special investigations and reports.

241. Spanish Historical Grammar. (5)

290. Conferences and Special Studies. (†) Staff

Not offered in 1949-1950: 118, 119, 120, Survey of Spanish Culture; 131, Lyric Poetry; 141, 142, 143, Spanish Drama; 184, 185, 186, 187, Spanish-American Literature; 231, Epic Poetry; 252, 253, Graduate Spanish Studies.

SCANDINAVIAN LANGUAGES AND LITERATURE

Professor Emeritus Vickner; Associate Professors Arestad and Johnson; Acting Instructor Thomle

For information about majoring in Swedish, Norwegian, or Danish, see page 138.

The department will place each student in whatever course for which he is ready and which meets his needs.

Fifteen quarter credits or the equivalent in any one of the four Scandinavian languages will satisfy the entrance deficiency of two high-school units.

1-2, 3. Elementary Swedish. (3-3, 3) The fundamentals of oral and written Swedish. Course 3 is primarily devoted to conversational Swedish and reading. Courses 1-2, 3 may be taken with 4-5, 6 to make 5 credit courses. 1, 2, 3 are hyphenated if 4-5 are not taken. Johnson

4-5, 6. Swedish Reading Course for Beginners. (2-2, 2) A student who registers for this course should also be enrolled in 1-2, 3. No knowledge of Swedish is necessary for registration in 4. Johnson

9. Swedish Literature. (2) Reading in Swedish. Pr., 3. Johnson

10-11, 12. Elementary Norwegian or Danish. (3-3, 3) The fundamentals of oral and written Norwegian or Danish. Course 12 is primarily devoted to conversation and reading. Courses 10-11, 12 may be taken with 13-14, 15 to make five-credit courses. 10, 11, 12 are hyphenated if 13-14 are not taken. Danish will be taught in a separate section by Mr. Kjaer. Arestad, Thomle

13-14, 15. Norwegian or Danish Reading Course for Beginners. (2-2, 2) A student who registers for this course should also be enrolled in 10-11, 12. No knowledge of Norwegian or Danish necessary for registration in 13. Danish will be taught in a separate section by Mr. Kjaer. Arestad, Thomle

16-17-18. Elementary Modern Icelandic. (3-3-3) The fundamentals of oral and written modern Icelandic. Taught by Mr. Sigman.

20, 21, 22. Norwegian or Danish Literature. (2, 2, 2) An introduction to modern drama and prose fiction. Pr., ability to read easy Norwegian or Danish. Danish taught separately. Arestad, Thomle

23, 24, 25. Swedish Literature. (2, 2, 2) An introduction to modern Swedish drama and prose fiction. Pr., ability to read easy Swedish. Johnson

103, 104, 105. Modern Swedish Writers. (2 to 4 credits each quarter) The reading of representative works of Strindberg, Fröding, Heidenstam, Lagerlöf, Söderberg, and other recent and contemporary writers. Pr., 23, 24, 25 or fair reading knowledge of Swedish. Johnson

†To be arranged.

106, 107, 108. Modern Norwegian and Danish Writers. (2 to 4 credits each quarter) The reading of representative works of Ibsen, Bjornson, Hamsun, Lie, Garborg, Bojer, Overland, and others for Norwegian, and Hans Christian Andersen, Nexo, Oehlenschläger, Holberg, and others for Danish. (Danish taught separately.) Pr., 20, 21, 22 or fair reading knowledge of Norwegian or Danish. Arestad

Courses in English

30. Scandinavian Culture and Institutions. (2) Arestad

99. Outline of Modern Scandinavian Culture. (1) Upper-division credit to upper-division students. Arestad

109, 110, 111. The Scandinavian Novel. (2, 2, 2) A study of the Sagas and representative novels by Hans Christian Andersen, Kielland, Strindberg, J. P. Jacobsen, Hjalmar Bergman, Hamsun, Undset, Nexo, Lagerlöf, and Gunnarsson. Arestad, Johnson

180. Ibsen and His Major Plays. (2) Pr., junior standing. Arestad, Johnson

181. Strindberg and His Major Plays. (2) Pr., junior standing. Johnson

182. Recent and Contemporary Scandinavian Drama. (2) A study of outstanding twentieth-century plays with an introductory consideration of Ibsen and Strindberg. Johnson

Courses for Graduates Only

201-202, 203. Old Icelandic. (2-2, 2) Johnson

205-206. Scandinavian Literature in the Nineteenth Century. (2-4 ea.) 205, Ibsen; 206, Strindberg. Arestad, Johnson

208. Scandinavian Lyric Poetry. (2)

209. History of Scandinavian Literature. (2-4)

Not offered in 1949-1950: 190-191, Introduction to Science of Language; 192, Life of Words.

SOCIAL WORK, GRADUATE SCHOOL OF

Professor Ferguson; Assistant Professors Brown, Jonquet, McCullough, Mills; Lecturers Hielbrunn, Hoedemaker, Hollenbeck; Field Work Supervisors Bradford, Hoskins, Macdonald, Reiss

Permission of School of Social Work Required Before Registration

Preprofessional Undergraduate Courses

192. Field of Social Work. (3) Survey course of the principles and practices in the total field of social work, with a comprehensive picture of available services and future needs. Pr., permission. Brown and Lecturers

193. Introduction to Public Welfare. (3) Changing concepts as reflected in reports and legislation for the care and treatment of dependent, delinquent, and handicapped persons; development and present responsibility of welfare agencies with special reference to Washington State. Pr., permission. McCullough

195. Problems of Child Welfare. (3) A survey of the social welfare programs relating to the well-being of children, including standards and objectives of foster home care, adoptions and institutional placement, as well as measures affecting children in their own homes. Pr., permission. Bradford

200. Social Case Work. (3) Introductory survey of the generic theory covering basic principles in the philosophy, psycho-social theory of behavior, and the methods of treatment in social case work. Study of the case work process through the analysis and discussion of case records, with emphasis on the interview and interviewing techniques as illustration and demonstration of the basic principles.

201. Social Case Work. (3) A continuation of generic case work theory, with intensive study of diagnosis, treatment, the treatment relationship (including rapport, transference, and counter-transference), common types of case situations, use of special treatment resources, use of supervision and consultation, and agency function as it affects selection of cases and treatment procedures. Pr., 200. Jonquet

202. Social Case Work. (3) Continuation of generic case work theory. Intensive drill in the use of basic theory in the analysis of case material, with further study of the processes of diagnosis, tentative diagnosis at intake, the comprehensive diagnostic formulation, diagnostic review, definition of the aims of treatment, differentials of treatment, selection of treament techniques. Jonquet

203. Growth and Development of the Individual. (2) The development and structure of the human personality as derived from psychoanalytic psychology and as presented by the field of dynamic psychiatry. Pr., professional students only. Orr

204. Growth and Development of the Individual. (2) Continuation of dynamic theory of emotional development, and factors which disturb that development. Physical growth and development of the individual as correlated with factors in emotional and social development, particularly in the first six years of life. Pr., 203. Hoedemaker, Ferguson, and Medical Lecturers

205. Growth and Development of the Individual. (2) The viewpoint and approach of dynamic psychiatry in relation to the causation and treatment of neurotic behavior patterns. Pr., 204. Hoedemaker, Ferguson, and Medical Lecturers

206. Introduction to Public Welfare. (3) Care of needy under poor laws, emergency relief and modern public assistance programs; characteristics of state assistance plans; administration of work relief; federal grants-in-aid; adult probation and parole; vocational rehabilitation services. Pr., permission. McCullough

207. **Statistics in Social Work.** (3) Elementary statistical method applied to social welfare problems; sources for continuing statistical reports; interpretation and use of statistics in welfare administration. Pr., permission. McCullough

208. **The Child and The State.** (3) The development of the rights of the child in relation to those of parents, the responsibility of the state in safeguarding those rights through laws and their administration by agencies; and their significance to family and children's social agencies. Pr., 200. Staff

209. **Social Group Work.** (3) Professional group work as a method and process within the total field of social work; its objectives, techniques, skills and media; criteria for evaluation of results. Pr., 200, 203. Hollenbeck

210. **Administration of Social Insurances.** (3) The social insurance movement in the U. S. and selected countries. Present legislation and administrative problems in unemployment compensation and the insurances for the aged, survivors, disabled, and sick. Pr., 206. McCullough

211. **Law and Social Work.** (3) The basis of law, its philosophy and development, its broad principles, and the procedure by which it operates, and specific aspects pertinent to social work orientation, including law in relation to the family, children, guardianships, acts against society and property laws. Pr., 200, 203. Linville

213. **Social Welfare Organization: Public Assistance and Related Services.** (3) Administrative aspects of a public welfare agency program as related to case work services. The development and effective use of policy in agency planning and provision of individualized services as applied to practice. Pr., permission. Brown

214. **Community Organization for Social Welfare.** (3) The problems involved in bringing about an adjustment between social welfare needs and resources, understanding the social forces of the community, and the methods used by public and private agencies to organize to meet these needs; the interpretation of agency programs to the community, and the place of boards and committees. Pr., 206. Brown

215, 216, 217, 218. **Field Work: Family Social Case Work.** (4, 4, 4, 4) Pr., permission. Jonquet, Staff

220. **Family Case Work.** (3) Introduction to family case work as a specialized field of practice. Study of family case work agencies; auspices, functions, programs, structure, personnel relations, research, and public relations. Study of family case work, its specific nature, operational concepts of the family, and common types of cases. Pr., second-year students only. Jonquet

222. **Seminar: Family Social Work.** (3) Intensive study of treatment in cases of disturbed marital relationship through analysis of case records and review of the literature. Re-examination of generic principles as applied in family case work with adults in conflict. Principles and procedures in treatment of two individuals in conflict with each other, management of treatment by one case worker, managements of the divided case in treatment. Pr., second-year students only. Jonquet

223. **Seminar: Family Social Work.** (3) Intensive study and treatment of adolescent children through analysis of case records and review of the literature. Review of puberty and adolescence as periods in the growth and development of the individual. Drives and fears deriving from sexual development in adolescence. The struggle to throw off parental controls and to achieve independent adult standards. The role of the case worker in helping child and parent in this period of growth, with emphasis on the normal and near-normal child. Pr., second-year students only. Jonquet

226, 227, 228, 229. **Field Work: Family Social Work.** (4, 4, 4, 4) Pr., permission. Jonquet, Staff

234, 235, 236. **Seminar: Social Work with Children.** (3 each) Pr., permission. Staff

238, 239, 240, 241. **Field Work: Social Work with Children.** (4, 4, 4, 4) Pr., permission. Staff

244. **Medical Social Case Work.** (3) The generic aspects of case work in the medical setting; the integration of dynamic psychiatric theory of human behavior with medicine and case work; the role of the case worker in relation to that of the physician and other professional persons in the study and treatment of the social, emotional, and physical aspects of the ill person. Extensive use of case material. Pr., completion of first year. Ferguson

246. **Seminar: Medical Social Work.** (3) Continuation of 244, with emphasis on analysis of student's own case material, and correlated with original papers based on integration of data from current professional literature in case work and related fields. Participation in clinical demonstration emphasizing the integration of case work, medicine, dentistry, nursing, and dietetics, as presented in the hospital setting and in the clinics. Pr., 244. Ferguson

247. **Seminar: Medical Social Work.** (3) Continuation of 246. Additional study of the role of the case worker in extra-mural practice, as case worker, counselor, supervisor, or consultant. Observation, participation, and original papers. Pr., 246. Ferguson

248. **Seminar: Medical Social Work.** (3) Organization and administration of medical social work programs within hospitals, health centers; in health departments; in departments of public welfare; and in national voluntary agencies and federal health and welfare programs. Methods of evaluation of medical social work practice; clarification of areas needing study and research based on original papers. Pr., 247. Ferguson

250, 251, 252, 253. **Field Work: Medical Social Work.** (4, 4, 4, 4) Pr., 244. Ferguson, Staff

258. **Psychiatric Social Case Work.** (3) Course content is a general introduction and orientation to the field of psychiatric social work. The relationship of psychiatric social work to generic case work is brought out, emphasizing the relationship of the psychiatric social worker to the psychiatrist and, in addition, the role of the psychiatric social worker in the clinical child guidance team. How the social worker practices psychiatric case work treatment within the area of his professional competence in the hospital, clinic or other psychiatric auspice, will be discussed. Case material selected by the instructor and when possible from student's field work placement will be utilized. Pr., permission. Staff

261. Seminar in Psychiatric Social Work. (3) Through the seminar method, the content of previous courses and field work experience is synthesized into a concept of psychiatric social work and a philosophy of social case work through the use of material chosen by the instructor and supplemented by students. Pr., 203, 204, 205, 258. Staff

264, 265, 266, 267. Field Work: Psychiatric Social Work. (4, 4, 4, 4) Pr., 258. Staff

270. Public Welfare Administration. (3) Administrative structure at federal, state, and local levels; federal and state responsibilities in supervision; financing welfare services; research and reporting by welfare departments. Pr., 206. McCullough

272, 273, 274. Seminar: Public Welfare Administration. (3 each) Seminar content varies but is planned to cover areas in public welfare of particular significance to students enrolled. Pr., 270. McCullough

276, 277, 278, 279. Field Work: Public Welfare Administration. (4, 4, 4, 4) Pr., 270. McCullough, Staff

280. Social Welfare Administration. (3) Pr., 214. McCullough

282, 283, 284. Seminar: Community Organization for Social Welfare. (3 each) Pr., permission. Brown

286, 287, 288, 289. Field Work: Community Organization for Social Welfare. (4, 4, 4, 4) Pr., permission. Brown, Staff

300. Social Work Research. (3) Methods used in the study of social work practice, program evaluation and community needs and resources; procedures in collection, analysis and presentation of data. Pr., 207, or equivalent. McCullough

305. Administration of Social Agencies. (3) Problems of administration that confront the administrator and his staff in any public or private agency; relations with board, staff; problems of finance and budget-making, office management. The dynamic principles of the administrative process will be emphasized. Pr., 270. Brown

308. Seminar: Supervision. (3) Functions of the supervisor in case work agencies, as teacher, case consultant, and adminstrative officer. Review of literature. Study of supervisory processes and techniques through analysis of case material illustrating the three functions of the supervisor. The supervisory relationship, transference and counter-transference in supervision. Management of supervisory load. Pr., permission. Jonquet

310, 311, 312, 313. Field Work: Supervision. (4, 4, 4, 4) Pr., 308. Jonquet

320. Readings in Social Work. (2-3, max. 6) Pr., permission. Staff

334. Seminar: History of Social Work. (3) Pr., permission. Ferguson

Not offered in 1949-50: 280, Social Welfare Administration; 340, Seminar: Social Work as a Profession.

SOCIOLOGY

Professors Lundberg, Dodd, Faris, Hayner, Schmid; Professors Emeriti Steiner, Woolston; Associate Professors Inglis, Miller; Assistant Professors Bowerman, Cohen, Miyamoto, O'Brien, Sabagh; Instructors Jahn, Schrag; Acting Instructors Carpenter, Parks

1. Survey of Sociology. (5) Basic principles for understanding social relationships. (Juniors and seniors take 100 rather than 1.) O'Brien and Staff

16. Housing in the American Community. (5) A survey of housing needs, conditions, production, problems, and policies. Emphasis is placed upon the interrelation between the house, neighborhood, and community. Primarily for Architecture students, but open to others. Cohen

27. Survey of Contemporary Social Problems. (5) Analysis of processes of social and personal disorganization and reorganization in relation to suicide, crime, population, unemployment, mental deficiency, mental diseases, family disorganization, and similar social problems. Pr., 1 or 100. Cohen, Faris, Schrag

31. Social Statistics. (5) Methods and sources for quantitative investigation as applied to sociology and related fields. Pr., 1 or 100. Miyamoto, Cohen, Carpenter, Jahn, Sabagh

55. Human Ecology. (5) Factors and forces which determine the distribution of people and institutions. (Juniors and seniors take 155.) Pr., 1 or 100. Schmid, Sabagh, Cohen

60. Group Behavior. (5) Socialization of the individual, social processes, and interactions of persons in groups. Pr., 1 or 100, Psych. 1. Inglis, Miyamoto, Bowerman

100. General Sociology. (5) Major concepts of sociology and the scientific point of view in dealing with social phenomena. (Juniors and seniors are advised to take this course in place of 1, if possible. Credit cannot be received for both 1 and 100.) O'Brien and Staff

110. Contemporary American Institutions. (5) Study of origins and development of major social institutions. The sociology of economic structure, political organization, religion, education, recreation, and other institutionalized patterns. Pr., 1 or 100. Miller

111. Social Change and Trends. (5) Forces causing social change, basic trends in American life. Pr., 15 credits in social science. Miller

112. The Family. (5) The family as a social institution; personality development within the family; marriage adjustment; changing family patterns; disorganization and reorganization. Pr., 1 or 100. Miyamoto, Bowerman

114. Social Factors in Marriage. (3) Analysis of courtship and marriage interaction; marital adjustments; specific problems of marriage and family life. Pr., 1 or 100. Bowerman

116. Housing in the American Community. (5) (16 primarily for Architecture students.) A survey of housing needs, conditions, production, problems, and policies. Emphasis is placed upon the interrelation between the house, the neighborhood, and community. Pr., 1 or 100. Cohen

117. **Japanese Social Institutions.** (3) Pr., 1 or 100. Carpenter

119. **Institutional Forms and Processes.** (5) The process of institutionalization and the general nature of institutions; relation of institutions to persons; institutions and social control; social change and institutional disorganization. Pr., 1 or 100. Faris

120. **Criminology.** (5) Individual and social factors in delinquency; history and methods of criminal justice. Field trips to local penal institutions. Pr., 1 or 100. Schrag

121. **Penology.** (5) Social treatment of adult offenders. Pr., 120 or approved equivalent. Hayner

122. **Juvenile Delinquency.** (5) Family and community backgrounds; institutional treatment; juvenile court and probation; programs for prevention. Pr., 120 or approved equivalent. Schrag

131. **Advanced Social Statistics.** (5) The application of statistical methods to the analysis of sociological data. Pr., 31. Jahn

132. **Methods of Sociological Research.** (5) Investigation of communities, institutions, and social conditions. Field and laboratory work. Pr., 31 or approved equivalent. Faris

135. **Graphic Techniques in Sociology.** (3) Theory and practice of constructing maps and graphs used in sociological research and exhibits. Pr., 31. Schmid

136. **Machine Techniques in Research.** (5) Theory and practice of tabulating and calculating machines, including mechanical and electronic, in statistics and research. Pr., 10 credits in statistics. Jahn

137. **Scale Analysis.** (3) Principles and methods of scale analysis applied to social attitudes, opinions, and behavior. Pr., 1 or 100, 60, 31, or approved equivalents. Jahn

138. **Advanced Social Statistics.** (5) Pr., 131. Jahn

140. **Social Differentiation.** (3) Analysis of societal divisions; class, race, caste. Pr., 15 credits in social science. O'Brien

142. **Race Relations.** (5) Study of interracial contacts and conflicts. Pr., 10 credits in social science. O'Brien

143. **American Negro Community.** (3) Internal structure, class and caste patterns; resultant personality and institutional development. Pr., 1 or 100. O'Brien

144. **Rural Community.** (5) Social and economic problems. Pr., 1 or 100. O'Brien

146. **Industrial Sociology.** (5) Social analysis of work plants such as factory, office, and store, with special reference to work group behavior; the processes of personality. Socialization in work plants. Laboratory practice. Pr., 1 or 100 and upper-division standing. Miller

149. **Latin-American Social Institutions.** (3) Social gradients and changing institutional patterns in representative Latin-American communities. Pr., 1 or 100. Hayner

150. **Population Problems.** (5) Major quantitative and qualitative problems of population in our contemporary society. Pr., 1 or 100. Sabagh

151. **Human Migration.** (5) Determining factors and problems arising therefrom. Pr., 5 credits in sociology or economics. Sabagh

155. **Human Ecology.** (5) Factors and forces which determine the distribution of people and institutions. Pr., 1 or 100. Cohen, Schmid, Sabagh

160. **Primary Interaction and Personal Behavior.** (5) Social sources of cooperative motives; social basis of the self; nature of primary groups; institutional relations in roles; exceptional and unconventional roles; methodology. Pr., 60 or approved equivalent.

162. **Public Opinion.** (3) The nature of public opinion, how it is formed, and how it is measured. The operation of public opinion polls. Pr., 60 or approved equivalent. Inglis

163. **Mass Communication.** (3) Control, structure, and functioning of the mass media of communication as a force in social life, and methods of research in this field. Pr., 60 or approved equivalent. Inglis

166. **Social Adjustment of the Worker.** (3) Adjustments worker makes during span of work life; cultural background of work values; transition from school to work. Pr., 60 or approved equivalent. Miller

167. **Social Control.** (5) Analysis of the technique and process by which changes in individual and collective actions are effected. Pr., 1 or 100. Miyamoto

174. **History of Sociological Thought.** (5) Background and trends in social thought from Comte to the present. Pr., 1 or 100. Sabagh

178. **Sociological Theory.** (5) Modern scientific theory applied to social behavior. Sociology as a natural science. Pr., 20 credits in social science. Lundberg

181, 182, 183. **Reading and Research in Selected Fields.** (2 to 5 ea.) Open only to qualified undergraduate students by consent of instructor. Staff

200, 201, 202. **Departmental Seminar.** (No credit) Attendance required of graduate students. Reports on independent research by graduate students and staff members. Meets once each month during regular school-year. Staff

210, 211, 212. **Marriage and the Family.** (3, 3, 3) Analysis of marriage and family patterns and problems. Initial emphasis on research findings and methods. Individual research on selected projects. Bowerman

220. **Correctional Institutions.** (3) Prisons and juvenile reformatories as communities. Pr., 120 or approved equivalent. Hayner

221. **Analysis of Criminal Careers.** (3) Personal and social factors in criminal maturation and reformation. Pr., 120 or approved equivalent. Hayner

222. **Basic Crime Prevention.** (3) Critical consideration of programs for delinquency prevention. Pr., 120 or approved equivalent. Hayner

232, 233. **Seminar in Methods of Sociological Research.** (3, 3) Pr., 31, 132, and 178, or approved equivalents. Lundberg

235. Methodology: Quantitative Techniques in Sociology. (3) Pr., 31, 131 or 132, or approved equivalent. Bowerman

236. Methodology: Case Studies and Interviewing. (3) Pr., 31 and 132. Inglis

242. World Survey of Race Relations. (3) Pr., 25 credits in social science. O'Brien

246, 247. Industrial Sociology Seminar. (3, 3) Research training in industrial sociology. Readings and field projects. Pr., 146 or approved equivalents. Miller

250. Demography. (3) Population and vital statistics. Pr., 150 and 15 credits in social science, or approved equivalents. Schmid

255. Advanced Human Ecology. (3) Pr., 155 and 15 credits in social science. Schmid

263. Communication Seminar. (3) Research problems in mass communication. Pr., 25 credits in social science. Inglis

277. Systematic Sociology Seminar. (3) Research problems in dimensional analysis and synthesis. Pr., 176. Dodd

281, 282, 283. Reading in Selected Fields. (2 to 5 ea.) Open only to qualified graduate students by consent of instructor. Staff

291, 292, 293. Field Studies in Sociology. (2 to 5 ea.) Original field projects, carefully planned and adequately reported. Certain projects can be carried on in connection with the Public Opinion Laboratory. Open only to qualified graduate students by consent of instructor. Staff

Not offered in 1949-50: 145, Urban Community; 147, Chinese Social Institutions and Social Change; 176 and 177; 231; 251, World Migration; 260, Social Movements.

SPEECH

Professors Rahskopf, Carrell; Professor Emeritus Orr; Associate Professors Bird, Franzke; Assistant Professors Baisler, Bangs, Baskerville, Hile, Hosbor, Nelson, Pence; Instructors Brown, Enquist, Gormley, Grayum, Jenks, Miner, Murphy, Starr, Tiffany, Vinocour, Wagner; Associates Hogan, McKee, Shapley, Smid; Fellows Cox, Gannon, Gordanier, McGrath, Mitchell, Morrison, Poorman, Wigley, Wilkin; Lecturer Phillips

General Courses

1-2. Basic Speech Improvement. (3-3) A training course in fundamental elements of good speech. such as orderly thinking, emotional adjustment, adequate voice, distinct articulation, effective oral use of language. A study of speech as man's primary means of social interaction, with emphasis on the more informal uses of speech in daily life. Frequent conferences with instructor. Required for major or minor in speech. Hoshor in charge

100. Backgrounds in Speech. (5) Consideration of the nature of speech as an activity of daily life and as a field of study. Required for major or minor in speech. Not open to students who received credit for 186 prior to September 1948. Rahskopf

198. Senior Seminar in Speech. (2) Required for major. Rahskopf

199. Undergraduate Research. (2 to 5 ea. qtr.) Sec. A. Public Address. Sec. B. Voice and Phonetics. Sec. C. Oral Interpretation. Sec. D. Radio Speech. Sec. E. Speech Correction and Hearing. Pr., permission. Staff

Voice and Phonetics

10. The Speaking Voice. (5) A fundamental training course in voice and articulation. Not open to students who received credit for 43 prior to September 1948. Baisler in charge

110. Advanced Voice and Phonetics. (5) Continuation of 10, with emphasis on the physiology of voice production, the sound system of English, and the improvement of articulation. Pr., 10 (43 if taken prior to September 1948) or permission. Baisler

112. Experimental Methods in Voice and Phonetics. (5) A survey of experimental methods and findings. Lectures and demonstrations. Baisler

Public Address

20. Essentials of Public Speaking. (5) Audience analysis, choice and organization of material, oral style, and delivery. Frequent speeches before the class, followed by conference with instructor. Upper-division credit for upper-division students. Not open to students who received credit for 40 prior to September 1948. Franzke in charge

21. Advanced Public Speaking. (3) Continuation of 20 with special emphasis on organization and delivery. Not open to students who received credit for 41 prior to September 1948. Pr., 20 (40 if taken prior to September 1948). Franzke

25. Forms of Public Address. (3) Practice in the preparation and delivery of a variety of types of public speeches based on study of their structure and form. Not open to students who received credit for 139 prior to September 1948. Upper-division credit for upper-division students. Pr., 20.

27. Extempore Speaking. (3) Primarily for students in Engineering. Not open to students in the College of Arts and Sciences, nor to students who have credit for 20 (Speech 40 prior to September 1948). Upper-division credit for upper-division students. Franzke

120. Advanced Problems in Speaking. (5) Study of purposes, proof, organization, style, and delivery in public address, with emphasis on the speaker's personal problems and on psychological factors involved in public speaking. Not open to students who received credit for 188 prior to September 1948. Pr., 20. Hoshor

125. Public Speaking in America. (5) An historical and critical study of principal speakers and speeches from 1765 to 1900 and of their relation to American political, social, and intellectual life. A lecture, discussion, and reading course. Baskerville

Argument and Discussion

30. **Essentials of Argument.** (5) Bibliographies; briefs; methods of analysis, proof and refutation. Practice in argumentative speaking. Upper-division credit for upper-division students. Not open to students who received credit for 38 prior to September 1948. Pence

35. **Parliamentary Procedure.** (3) Methods of organizing and conducting public meetings. Based on Robert's *Rules of Order*. Upper-division credit for upper-division students. Vinocour

39. **Public Discussion.** (3) Open only to members of the University discussion groups. No more than 3 credits may be earned in one year, and the total credits may not exceed 9 (including credits for 101 earned prior to September 1948). Upper-division credit for upper-division students. Pr., permission.

130. **Advanced Argument.** (5) Continuation of 30. Not open to students who received credit for 138 prior to September 1948. Pr., 30. Pence

136. **Discussion Techniques Applied to Current Problems.** (5) Study of the various types of public discussion and practice in their use. Pr., 20 or 30. Franzke

Oral Interpretation

42. **Oral Interpretation.** (5) Development of fundamental techniques for analysis and reading aloud of prose and poetry. Includes directed listening projects of artists' speech recordings. Required of students seeking a secondary certificate in English. Upper-division credit for upper-division students. Not open to students who received credit for 79 prior to September 1948.

49. **Oral Interpretation Workshop.** (2) Selection, integration, and presentation of materials for specific occasions, purposes, and audiences. Involves performance before audiences on and off campus. No more than 2 credits may be earned in one year, and the total cannot exceed 6 credits. Open only to members of the Oral Interpretation Program Workshop. Upper-division credit for upper-division students. Pr., 42 (79 prior to September 1948) and permission. Hile

142. **Advanced Oral Interpretation.** (3) Study and practice in interpretation of problems peculiar to various types of literature, the needs and interests of specific audiences, and definite themes or points of view. Includes directed listening projects. Not open to students who received credit for 179 prior to September 1948. Pr., 42 (79 prior to September 1948) or permission. Hile

145. **Interpretation of Dialect.** (3) Study of the phonetic, vocal, and dictional changes in the common dialects of English found in America and the British Isles; and practice in the interpretation of poetic, dramatic, and narrative material employing them. Pr., 10 (43 prior to September 1948) and 42 (79 prior to September 1948) or permission. Hile

Teaching of Speech

50. **Introduction to the Teaching of Speech.** (2) Deals with the viewpoints, methodology, and curricula of speech education. Observation of teaching procedures. Required of candidates for the Three-year Secondary Teaching Certificate with a major or minor in Speech, and of those preparing for special speech and hearing rehabilitation work in the public schools. Nelson

See also Education 75X. **Special Methods in Speech.** (3) Required for Three-year Secondary Certificate with major or first minor in speech. For upper-division students only. Nelson

Radio Speech

61. **Radio Speech.** (3) Basic microphone techniques, reading of script, announcing, interviews, and talks. Special attention to voice and diction. Upper-division credit for upper-division students. Pr., 10 (43 prior to September 1948) or 42 (79 prior to September 1948). Bird, Hogan

62. **Advanced Radio Speech.** (3) Analysis of audience situations, group discussions, audience participation programs. Upper-division credit for upper-division students. Pr., 61. Bird, Hogan

162. **Radio Production Methods.** (3) Sound effects, music in broadcasts, studio set-up, timing, cutting of scripts, direction of programs. Pr., 61, 62. Bird

163. **Radio Program Building.** (3) Adaptation of literary, informational, and persuasive material for radio. Pr., 61, 62. Bird

See also Radio Education 70, Backgrounds (2), and other radio courses listed in the Department of Radio Education, the School of Drama, and the School of Journalism.

Speech Correction

A. **Speech Clinic.** No credit.
Sec. A. Articulation Problems.
Sec. B. Foreign Dialect.
Sec. C. Stuttering.
Sec. D. Voice Problems.
Sec. E. Hearing Problems.

170. **Introduction to Speech Correction.** (5) Nature and etiology of disorders of speech. Carrell

171. **Methods of Speech Correction.** (5) Pr., 170. Carrell

173. **Diagnostic Methods in Speech Correction.** (2) Pr., 171. Bangs

174. **Clinical Training in Speech Correction.** (1-5) May be repeated for total not to exceed 15

credits. Total undergraduate credits in Speech 174 and 184 together cannot exceed 20. Pr., 171, (191 if taken prior to September 1948), 173 (173 may be taken concurrently). Staff

175. Stuttering. (2) Nature, etiology, and treatment of stuttering. Pr., 170 (190 if taken prior to September 1948) or permission. Carrell

Hearing

180. Introduction to Hearing. (5) Description of normal audition; elementary structure and functioning of the hearing mechanism; deficiency types of hearing; effects on speech; considerations of hearing education. Bangs

181. Methods in Aural Rehabilitation. (5) Pr., 180. Gormley

184. Clinical Practice in Aural Rehabilitation. (1-3) May be repeated for total not to exceed 9 credits. Total undergraduate credits in Speech 174 and 184 together cannot exceed 20. Pr., 180, 181 (194 if taken prior to September 1948).

185. Medical Backgrounds for Audiology. (2) Discussion of diseases and injuries of the ear resulting in reduced audition.

189. Audiometry. (2) Theory and practice of audiometry and other methods of measuring hearing. Bangs

Courses for Graduates Only

201. Introduction to Graduate Study in Speech. (2) Required of all graduate students in speech. Rahskopf

209. Studies in Greek and Roman Rhetoric. (5) Critical analysis of the writings on rhetoric by Plato, Aristotle, Cicero, Quintilian, and others. Rahskopf

210. Studies in Modern Rhetoric. (5) Critcial analysis of the writings on rhetoric by Cox, Wilson, Bacon, Campbell, Blair, Whately, and others. Pr., 209. Pence

271. Organic Disorders of Speech. (5) The course covers the anatomy, neurology, etiology, symptoms, and principles of correction related to the following disorders: cerebral palsy, cleft palate, aphasia, idiopathic language retardation, esophageal speech, and significant neurological diseases in which speech disorders constitute a major symptom. Pr., 171 (191 prior to September 1948) or permission. Bangs

300. Research. (†)

ZOOLOGY

Professors Hatch, Svihla; Professor Emeritus Kincaid; Associate Professor Martin; Assistant Professors Edmondson, Fernald, Hsu, Osterud, Ray, Whiteley; Instructor Easton

1, 2. General Zoology. (5, 5) The structure of protoplasm, cell theory, structure and function of a typical vertebrate, cell division and lineage. Second quarter—survey of the animal kingdom. Three lectures, four hours laboratory. 1, or equivalent, prerequisite to 2.

8. Elementary Human Physiology. (5) Three lectures, four hours laboratory. Pr., freshman chemistry. Not open to students who received credit for 7 prior to September 1949.

14. Evolution. (2) Two lectures. Not open to students who received credit for 16 prior to September 1949.

18. Survey of Physiology. (5) Five lectures, no laboratory. Not open to students who received credit for 11 prior to September, 1949.

58. Physiology. (6) Foundation work for physiology of exercise. Not open to students who have received credit for 8 or for 7 or 50 prior to September 1949. Students who expect to take Anatomy 103 should do so before registering for this course. Four lectures, four hours laboratory. Pr., high school or freshman chemistry, Zool. 2 or Biol. 2.

100. Introductory Physiology. (5) For majors in biological sciences. Pr., Chem. 132; 10 units of biological science, Physics 6, or high school physics. Easton

101. Cytology. (5) The cell in structure and function. Three lectures, four hours laboratory. Pr., permission. Hsu

108. Cellular Physiology. (3) Functional aspects of protoplasmic structures. Three lectures. Not open to students who received credit for 115 prior to September 1949. Pr., 100 or permission. Whiteley

108L. Cellular Physiology Laboratory. (2) Must be accompanied by 108. Six hours laboratory. Not open to students who received credit for 115L prior to September 1949. Pr., permission.

116, 117. Chemical Embryology. (3, 3) An experimental analysis of the mechanics of development on the cytochemical and biochemical level. Three lectures. Pr., 108 or 157 (may be taken concurrently. Whiteley

116L, 117L. Chemical Embryology Laboratory. (2, 2) Must be accompanied by 116, 117. Six hours laboratory. Pr., permission.

133, 134. Invertebrate Zoology. (5, 5) Morphology and phylogeny of invertebrates exclusive of terrestrial arthropods. Not open to students who received credit for 125, 126 prior to September 1949. Two lectures, six hours laboratory, field work. Pr., 1, 2. Ray

135. Parasitology. (5) Animal parasites. Three lectures, six hours laboratory. Not open to students who received credit for 107 prior to September 1949. Pr., 1, 2.

138. Comparative Invertebrate Physiology. (3) Not open to students who received credit for 114 prior to September 1949. Three lectures. Pr., 100, 134.

138L. Comparative Invertebrate Physiology Laboratory. (2) Must be accompanied by 138. Six hours laboratory. Pr., permission.

144. **Entomology.** (5) Structure, classification and economic relations of insects. Not open to students who received credit for 111 prior to September 1949. Three lectures, six hours laboratory. Pr., 1, 2. Hatch

153-154. **Comparative Anatomy of Chordates.** (5-5) Not open to students who received credit for 127-128 prior to September 1949. Three lectures, six hours laboratory. Pr., 1, 2.

156. **Vertebrate Embryology.** (5) Not open to students who received credit for 105 prior to September 1949. Three lectures, six hours laboratory. Pr., 1, 2. Fernald

157. **Experimental Morphogenesis.** (3) An experimental analysis of the mechanics of development on the morphological level. Not open to students who received credit for 110 prior to September 1949 Three lectures. Pr., 156. Fernald

157L. **Experimental Morphogenesis Laboratory.** (2) Not open to students who received credit for 110L prior to September 1949. Pr., permission. Fernald

163. **Natural History of Amphibia and Reptiles.** (5) Not open to students who received credit for 129 prior to September 1949. Three lectures, six hours laboratory, field work. Pr., 1, 2. Svihla

164. **Natural History of Birds (Ornithology).** (5) Three lectures, six hours laboratory, field work. Pr., 1. 2. Svihla

165. **Natural History of Mammals.** (5) Three lectures, six hours laboratory, field work. Not open to students who received credit for 130 prior to September 1949. Pr., 1, 2. Svihla

173. **Limnology.** (5) Freshwater biology. Not open to students who received credit for 108 prior to September 1949. Three lectures, six hours laboratory, field work. Pr., 1, 2, high school or freshman chemistry. Edmondson

174. **Plankton.** (5) Not open to students who received credit for 106 prior to September 1949. Three lectures, six hours laboratory, field work. Pr., 1, 2. Edmondson

175. **Vertebrate Zoogeography.** (3) Not open to students who received credit for 132 prior to September 1949. Pr., 5 hours of natural history. Three lectures. Svihla

181. **Micro-technique.** (4) Not open to students who received credit for 121 prior to September 1949. One lecture, six hours laboratory. Pr., 1, 2, and permission.

183. **Museum Technique.** (3) Preparation of museum specimens Not open to students who received credit for 135 prior to September 1949. Six hours laboratory. Pr., permission. Flahaut

199. **Special Problems in Zoology.** (3 or 5) Pr., 30 hours of Zoology and permission. Staff

Courses for Graduates Only

200. **History of Zoology.** (3) Not open to students who received credit for 131 prior to September 1949. Three lectures. Pr., 20 credits in Zoology or permission. Hatch

206*. **Topics in Experimental Embryology.** (6, may be repeated) Pr., permission.

210, 211, 212. **Seminar.** (1, 1, 1) Staff

233*. **Advanced Invertebrate Zoology.** (6) Marine invertebrate animals from the point of view of biological Oceanography. Not open to students who received credit for 225 prior to September 1949. Pr., Invertebrate Zoology.

236*. **Advanced Invertebrate Embryology.** (6) Not open to students who received credit for 213 prior to September 1949. Pr., 133, 134, 156.

239*. **Advanced Invertebrate Physiology.** (6) Pr., permission.

258. **Comparative Vertebrate Physiology.** (6) Not open to students who received credit for 118 prior to September 1949. Pr., 100 Martin

274*. **Advanced Studies of Plankton.** (6) Not open to students who received credit for 216 prior to September 1949. Pr., permission.

300. **Research.** (†) Staff

General Biology

1-2. **General Biology.** (5-5) Principles of biology applying to all living forms, illustrated by representatives of major plant and animal groups and introducing man's place in nature. Recommended for teaching majors and for nonmajors in the biological sciences. Three lectures, one quiz, and three hours laboratory. Blaser and Martin

* Offered only at Friday Harbor in cooperation with the oceanographic laboratories.
† To be arranged.

SUMMARY OF DEGREES AND CERTIFICATES AWARDED 1947-1948

Bachelor's Degrees

B.A. (College of Arts and Sciences)	733	B.S. in Commercial Engineering	1
B.A. (College of Education)	93	B.S. in Electrical Engineering	118
B.A. in Economics and Business	482	B.S. in Fisheries	12
B.A. in Education	1	B.S. in Food Technology	2
B.A. in Home Economics	5	B.S. in Forestry	40
B.A. in Librarianship	25	B.S. in Home Economics	23
B.A. in Mathematics	5	B.S. in Industrial Engineering	20
B.A. in Music	21	B.S. in Law	57
Bachelor of Architecture	15	B.S. in Mathematics	9
Bachelor of Laws	83	B.S. in Mechanical Engineering	128
B.S. (College of Arts and Sciences)	245	B.S. in Metallurgical Engineering	8
B.S. (College of Education)	14	B.S. in Microbiology	4
B.S. in Aeronautical Engineering	30	B.S. in Mining Engineering	3
B.S. in Basic Medical Science	12	B.S. in Nursing	93
B.S. in Ceramic Engineering	2	B.S. in Pharmacy	52
B.S. in Chemical Engineering	27	B.S. in Zoology	16
B.S. in Chemistry	22		
B.S. in Civil Engineering	57	Total	2458

Advanced and Professional Degrees

Master of Arts	83	Master of Science in Electrical Engineering	9
Master of Arts in Music	3	Master of Science in Forestry	1
Master of Arts in Regional Planning	1	Master of Science in Home Economics	4
Master of Business Administration	5	Master of Science in Mechanical Engineering	2
Master of Fine Arts	4	Master of Science in Mining Engineering	2
Master of Education	16	Master of Science in Nursing	1
Master of Forestry	6	Master of Science in Pharmacy	1
Master of Nursing	5	Master of Science in Physical Education	5
Master of Science	23	Professional Degree, Ceramic Engineer	1
Master of Social Work	8	Doctor of Education	1
Master of Science in Aeronautical Engineering	5	Doctor of Philosophy	22
Master of Science in Ceramic Engineering	1		
Master of Science in Chemical Engineering	14	Total	228
Master of Science in Civil Engineering	5		

Certificates

Certificate in Nursing Supervision	10	Three-Year Secondary Certificate	113
Certificate in Public Health Nursing	34		
		Total	157

SUMMARY OF ENROLLMENT — TOTALS

EXTENSION STUDENTS

Classes		3948
Men	1932	
Women	2016	
Home Study		3535
Men	2203	
Women	1332	
Total		7483

STUDENTS IN RESIDENCE

Academic Year		18047
Summer Quarter (Entire)		6524
Summer a First Term only		510
Summer b Second Term only		225
Short Courses		263
Education	117	
Nursing	86	
Medicine	1	
Forestry	59	
Deduct Summer Duplicates		4864
Total (Academic Year and Summer)		20705

SUMMARY OF ENROLLMENT BY CLASSES, UNIVERSITY OF WASHINGTON, YEAR 1947-1948

CLASSES	Summer a First Term	Summer b Second Term	Entire Summer Qtr.	Total Individuals	Autumn	Winter	Spring	Total Individuals* Academic Year
FRESHMEN	6	5	838	849	4017	3428	2996	4945
Men	3	3	654	660	2836	2356	2012	3526
Women	3	2	184	189	1181	1072	984	1419
SOPHOMORES	14	8	1233	1255	4227	4005	3507	4571
Men	4	4	1026	1034	3317	3168	2766	3572
Women	10	4	207	221	910	837	741	999
JUNIORS	21	18	1178	1217	3049	3248	3349	3274
Men	7	9	885	901	2110	2371	2521	2268
Women	14	9	293	316	939	877	828	1006
SENIORS	58	24	1232	1314	2576	2738	2838	2737
Men	18	11	866	895	1784	1938	2036	1875
Women	40	13	366	419	792	800	802	862
GRADUATES	209	87	1174	1470	1388	1355	1378	1731
Men	77	42	799	918	971	947	977	1173
Women	132	45	375	552	417	408	401	558
SPECIALS	3	1	51	55	106	125	108	158
Men	..	1	40	41	92	114	93	140
Women	3	..	11	14	14	11	15	18
TRANSIENTS	199	82	574	855	..	..	..	..
Men	28	24	302	354	..	..	..	..
Women	171	58	272	501	..	..	..	..
TOTALS	510	225	6280	7015	15363	14899	14176	17416
Men	137	94	4572	4803	11110	10894	10405	12554
Women	373	131	1708	2212	4253	4005	3771	4862

*The Totals are based upon the classification of the Autumn Quarter, to which is added the number of 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.

COLLEGE or SCHOOL	Summer a First Term	Summer b Second Term	Entire Summer Qtr.	Total Individuals	Autumn	Winter	Spring	Total Individuals Academic Year
Arts and Sciences	177	75	2645	2897	8129	7876	7439	9168
Men	32	30	1838	1900	5032	4972	4713	5759
Women	145	45	807	997	3097	2904	2726	3409
Dentistry	..	..	..	..	95	95	94	95
Men	..	..	..	..	95	95	94	95
Women	..	..	..	..	..	..	..	..
Economics and Business	11	11	1033	1055	2652	2639	2511	2952
Men	2	7	974	983	2445	2447	2347	2723
Women	9	4	59	72	207	192	164	229
Education	100	41	203	344	209	229	256	227
Men	15	15	105	135	129	144	160	140
Women	85	26	98	209	80	85	96	87
Engineering	11	..	659	670	1943	1824	1679	2115
Men	11	..	655	666	1931	1817	1672	2103
Women	..	..	4	4	12	7	7	12
Forestry	..	..	63	63	365	341	303	394
Men	..	..	63	63	364	340	302	393
Women	..	..	..	..	1	1	1	1
Graduate School	209	87	1174*	1470*	1388†	1355‡	1378§	1731#
Men	77	42	799	918	971	947	977	1173
Women	132	45	375	552	417	408	401	558
Law	..	..	244	244	436	406	373	440
Men	..	..	240	240	424	395	362	428
Women	..	..	4	4	12	11	11	12
Medicine	..	..	..	..	96	96	94	96
Men	..	..	..	..	87	87	85	87
Women	..	..	..	..	9	9	9	9
Mines	1	..	21	22	Now a school within the College of Engineering.			
Men	..	..	20	20				
Women	1	..	1	2				
Nursing	1	10	345	356	368	347	318	495
Men	..	..	..	..	..	1	1	1
Women	1	10	345	356	368	346	317	494
Pharmacy	..	1	137	138	309	288	292	334
Men	..	..	118	118	238	226	233	262
Women	..	1	19	20	71	62	59	72
TOTALS	510	225	6524	7259	15990	15496	14737	18047
Men	137	94	4812	5043	11716	11471	10946	13164
Women	373	131	1712	2216	4274	4025	3791	4883

The Totals are based upon the classification of the Autumn Quarter, to which is added the number of 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.

*To this number add 111 Graduates in the Law School.

†To this number add 262 Graduates in the Law, Dentistry, and Medicine Schools.

‡To this number add 248 Graduates in the Law, Dentistry and Medicine Schools.

§To this number add 226 Graduates in the Law, Dentistry, and Medicine Schools.

#To this number add 263 Graduates in the Law, Dentistry, and Medicine Schools.

SUMMARY OF ENROLLMENT BY CLASSES—DENTISTRY, LAW, MEDICINE—UNIVERSITY OF WASHINGTON, YEAR 1947-1948

YEAR	Summer a First Term	Summer b Second Term	Summer Qtr.	Total Individuals	Autumn	Winter	Spring	Total Individuals Academic Year
FIRST	.. ..	.. ..	1 1	1 1	268 257 11	251 240 11	229 218 11	268 257 11
SECOND	.. ..	.. ..	137 136 1	137 136 1	245 239 6	207 202 5	214 209 5	246 240 6
THIRD	.. ..	.. ..	66 65 1	66 65 1	71 70 1	77 75 2	60 58 2	72 71 1
FOURTH	.. ..	.. ..	33 31 2	33 31 2	42 39 3	62 60 2	57 55 2	43 40 3
GRADUATE	.. ..	.. ..	111 {110 1}*	111 {110 1}*	262 {246 16}*	248 {233 15}*	226 {210 16}*	263 {247 16}*
SPECIALS	.. ..	.. ..	.. ..	.. ..	1 1 ..	.. .. ..	1 1 ..	2 2 ..
TRANSIENTS	.. ..	.. ..	7 7 ..	7 7 ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..
TOTALS	.. ..	.. ..	244 240 4	244 240 4	627 606 21	597 577 20	561 541 20	631 610 21
G RAND TOTALS	510	225	6524	7259	15990	15496	14737	18047
Men	137	94	4812	5043	11716	11471	10946	13164
Women	373	131	1712	2216	4274	4025	3791	4883

*Graduate Students included in enrollment as First Year, Second Year, Third Year, and Fourth Year.

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