# FOR INFORMATION ON



## CORRECTION OF A.S.U.W. FEES—pp. 56, 57, 59

Since this catalogue went to press, A.S.U.W. fees have been increased as follows:

Winter Quarter—from $2.50 to $5.00
Spring Quarter—from $2.50 to $5.00
Athletic Admissions—from $1.25 to $2.50

## *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—Regulations," page 62 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
## 1947-1948

GENERAL SERIES JUNE 7, 1947 No. 810

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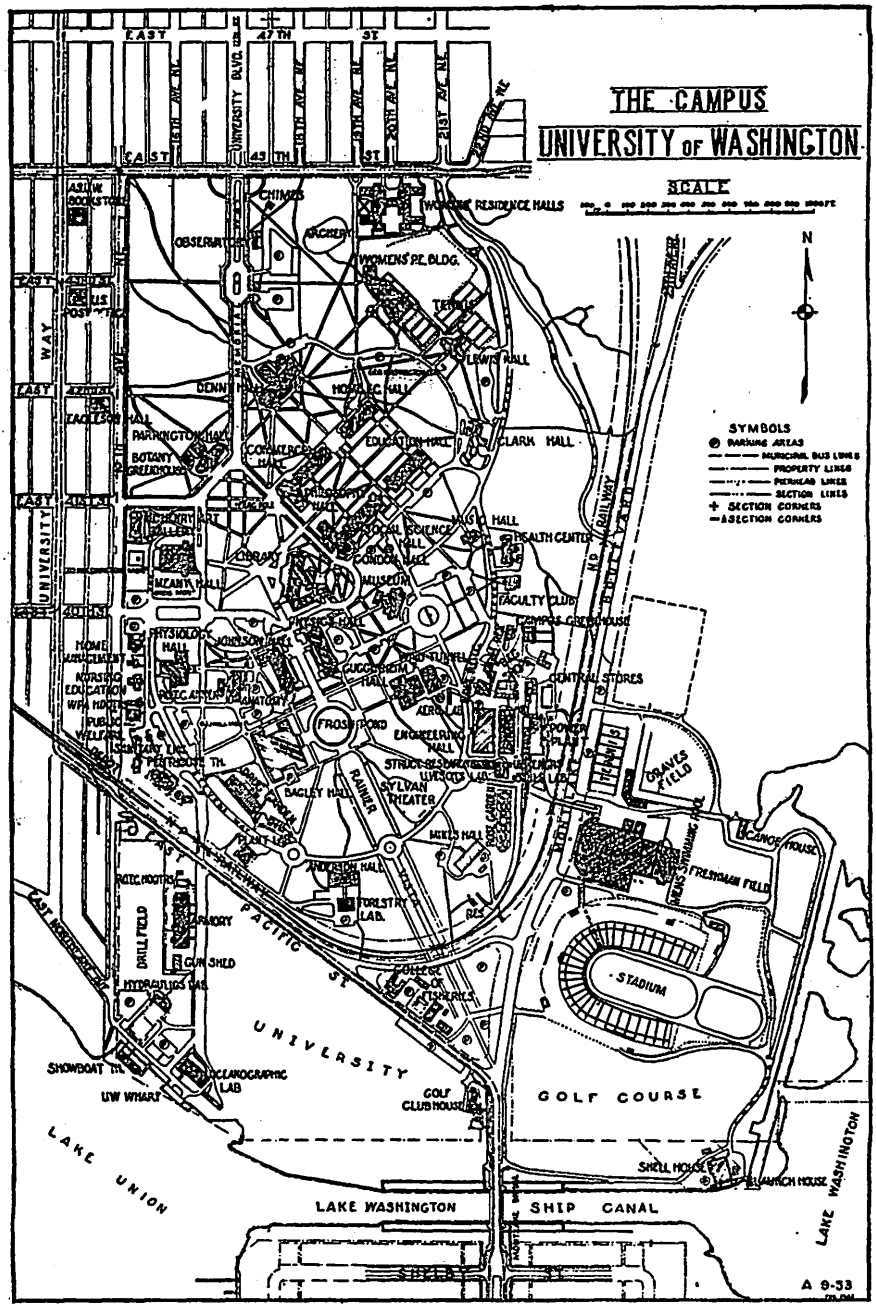


THE UNIVERSITY CAMPUS, composed of 605 acres, lies between Fifteenth Avenue Northeast and Lake Washington, and East Forty-fifth Street and Lake Union. The 15th Ave. N.E., Ravenna, and Montlake trolley coach lines run one block west of the campus; Laurelhurst-Sand Point motor coach line passes the campus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

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## Section II. Announcement of Curricula

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## CONTENTS—*(Continued)*

### Section III. Announcement of Courses

# UNIVERSITY OF WASHINGTON CALENDAR—1947-1948

## SUMMER QUARTER, 1947

General registration in person (by appointment only).....June 2 to June 21, 12 m.

*All fees must be paid at time of registration*

Instruction begins:
- University courses.....June 23, 7:30 a.m.
- Nursing: Hospital Division and Public Health Field Work only.....June 9, 8:00 a.m.

Independence Day (holiday).....Friday, July 4
First term ends.....July 23, 6:00 p.m.
Second term begins.....July 24, 7:30 a.m.
Last day to add a University course:
- First term.....June 25, 4:30 p.m.
- Full quarter.....June 28, 12 m.
- Second term.....July 26, 12 m.

Instruction ends:
- University courses.....August 22, 6:00 p.m.
- Nursing: Hospital Division and Public Health Field Work only.....August 30, 6:00 p.m.

## AUTUMN QUARTER, 1947

Registration dates:
- For students in residence, Spring, 1947.....September 2 to September 30, 4:30 p.m. Appointments may be obtained at Registrar's Office upon presentation of A.S.U.W. card.
- For former students not in residence, Spring, 1947..September 11 to September 30, 4:30 p.m. Appointments may be obtained by writing or calling at the Registrar's Office.
- For new students.....September 11 to September 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.....Tuesday, September 30
Special instruction for new students.....Begins 10 a.m. Monday, September 29, ends September 30
Instruction begins.....Wednesday, October 1, 8 a.m.
The President's Convocation.....Friday, October 3, 10:50 a.m.
Last day to register with a late fee and to add a course.....Tuesday, October 7, 4:30 p.m.
Armistice and Admission Day (Holiday).....Tuesday, November 11
Thanksgiving recess begins.....Wednesday, November 26, 6 p.m.
Thanksgiving recess ends.....Monday, December 1, 8 a.m.
Instruction ends.....Friday, December 19, 6 p.m.

## WINTER QUARTER, 1948

Registration dates:
- For students in residence, Autumn Quarter, 1947.....November 17 to December 12 Appointments will be issued, by classes only, on presentation of A.S.U.W. card, beginning October 24, 8 a.m.
- For former students not in residence, Autumn Quarter, 1947.....December 29 to January 3, 12 m. Appointments will be issued beginning October 15.
- For new students.....December 29 to January 3, 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, January 3, 12 m.
Instruction begins.....Monday, January 5, 8 a.m.
Last day to register with a late fee and to add a course.....Saturday, January 10, 12 m.
Washington's Birthday (Founder's Day and Legal Holiday).....Monday, February 23
Instruction ends.....Friday, March 19, 6 p.m.

## SPRING QUARTER, 1948

Registration dates:

For students in residence, Winter Quarter, 1948.....February 16 to March 12
Appointments will be issued, by classes only, on presentation of A.S.U.W. card, beginning January 23, 8 a.m.

For former students not in residence, Winter Quarter, 1948..March 22 to March 27, 12 m.
Appointments will be issued beginning January 15.

For new students.....March 22 to March 27, 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 27, 12 m.
Instruction begins.....Monday, March 29, 8 a.m.
Last day to register with late fee and to add a course.....Saturday, April 3, 12 m.
Governor's Day.....Thursday, May 20
Honors Convocation.....Wednesday, May 26, 10 a.m.
Memorial Day (Holiday).....Monday, May 31
Baccalaureate Sunday.....Sunday, June 6
Instruction ends.....Friday, June 11, 6 p.m.
Commencement.....Saturday, June 12

## SCHEDULE OF UNIVERSITY SENATE AND EXECUTIVE COMMITTEE MEETINGS FOR THE YEAR 1947-1948

### Autumn Quarter 1947

Senate (Election of Executive Committee).....Thursday, October 2
Executive Committee.....Monday, October 13
Senate.....Thursday, October 23
Executive Committee.....Monday, November 24
Senate.....Thursday, December 4

### Winter Quarter 1948

Executive Committee.....Monday, January 12
Senate.....Thursday, January 22
Executive Committee.....Tuesday, February 24
Senate.....Thursday, March 4

### Spring Quarter 1948

Executive Committee.....Monday, April 5
Senate.....Thursday, April 15
Executive Committee.....Monday, May 17
Senate.....Thursday, May 27

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VICE-PRESIDENT ..... Armand Marion, Jr., B.A., 1925
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SECRETARY ..... R. Bronsdon Harris, B.S.F., 1931

† Revised as of May 1, 1947.

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*Graduation*—Chairman, Grondal; Coombs, O. E. Draper, A. V. Eastman, Munro, Ordal, Plein, V. Ray, Clotilde Wilson; Registrar, ex officio.

*Honors*—Chairman, Densmore; Church, F. S. Eastman, Irvine, Jacobs, Loughridge, Wm. R. Wilson; Registrar, ex officio.

*Interdepartmental and Intercollegiate Relations*—Chairman, Svihla; Christian, Demmery, Hughes, Lundberg, McIntyre, Sivertz.

*Library*—Chairman, C. W. Smith; Benham, Guthrie, Hayner, Jessup, Marckworth, Moritz, Munro, E. J. Nelson, Preston, Thomson, Uehling.

*Medical School*—Chairman, C. E. Martin; Carpenter, Falknor, Guthrie, D. C. Hall, Rising, Roman, Spellacy, Tartar, Weiser; Comptroller, ex officio; Medical Dean, ex officio; Dental Dean, ex officio.

*Museum*—Chairman, Gunther; H. Burns, Hatch, Katz, Mackin, Payne, V. Ray, W. F. Thompson; Curator, Henry Art Gallery, ex officio; Director, Museum, ex officio.

*Public Exercises*—Chairman, Lindblom; Chessex, Corbally, Franzke, Hamack, Jerbert, Kingston, Lawrence, Michael, A. L. Miller, Powell.

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

*Public Relations*—Chairman, Tyler; Burd, T. R. Cole, Eby, Everest, C. E. Martin; Comptroller, ex officio; Director, Bureau of Business Research, ex officio; Director of University News Service, ex officio; Executive Secretary, Alumni Association, ex officio.

*Relations with Secondary Schools and Colleges*—Chairman, T. R. Cole; Arestad, Beaumont, O. E. Draper, Emery, Gates, Hitchcock, Lawson, Utterback, Warner; Dean of the College of Education, ex officio; Registrar, ex officio.

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

*Rules*—Chairman, Stirling; Bostetter, H. C. Douglas, Helen Hall, Hennes, Thomson; Registrar, ex officio; University Editor, ex officio.

*Schedule and Registration*—Chairman, Griffith; Butterbaugh, Lutey, Obst, Powell, R. Roberts, Van Horn, Woodcock; Registrar, ex officio; Assistants to the Dean of the College of Arts and Sciences, ex officio.

*Student Campus Organizations*—Chairman, A. L. Miller; E. H. Adams, Baisler, Dwinnell, Redford, F. R. Simpson, Zillman; Counselor for Men, ex officio; Associate Director of Student Affairs, ex officio.

*Student Discipline*—Chairman, Horton; K. C. Cole, Cramlet, Leahy, Reeves, Wilcox, R. Wilson, Winger.

*Student Welfare*—Chairman, Hutchinson; Carrell, E. M. Draper, Engel, Foote, Garfield, Guberlet, Hermans, Kidwell, Marckworth; Director of Student Affairs, ex officio; Registrar, ex officio.

*Tenure and Academic Freedom*—Chairman, Winther; Goodspeed, Harsch, Harrison, Mund, Pearce, R. J. Robinson, Rowntree, C. T. Williams, G. Wilson.

*Special Committee to Study Annuities*—Chairman, Birnbaum; Barksdale, M. Benson, Eby, Falknor, D. H. Mackenzie, A. W. Martin, Winger.

*Special Committee to Study and Define the Duties and Functions of Each Standing Faculty Committee*—Chairman, Holt; Dille, Harrison, Munro, Nelson.

*Special Committee to Review and Restudy the Administrative Code* and to make a report with recommendations to the Executive Committee and then to the Senate with the understanding that whatever is recommended by the Senate shall then be presented at a General Faculty meeting for consideration and vote—Chairman, Harrison; Beaumont, Cross, Austin Eastman, Goodspeed, Charles E. Martin, Windle.

## Graduate School Committees

*Graduate Publications*—Guthrie, Carpenter, K. C. Cole, Goodspeed, Griffith, Gunther, Mund, Ordal, Rigg, Savage, C. W. Smith; University Editor, ex officio.

*University Research*—Carpenter, Guthrie, Lauer, Preston, Weaver.

## UNIVERSITY SENATE FOR 1946-1947

I. LETTERS. ***Terms expire spring, 1949:*** Donald Cornu, *English;* Harvey Densmore, *Classics;* Joseph Barlow Harrison, *English.* ***Terms expire spring, 1948:*** Helen Kahin, *English;* Jane Sorrie Lawson, *English;* Sophus K. Winther, *English.* ***Terms expire spring, 1947:*** Brents Stirling, *English;* David Thomson, *Classics;* William C. E. Wilson, *Romanic Languages.*

II. ARTS. ***Term expires spring, 1949:*** Lionel Henry Pries, *Architecture.* ***Term expires spring, 1948:*** Demar B. Irvine, *Music.* ***Term expires spring, 1947:*** George F. McKay, *Music.*

III. SCIENCE. ***Terms expire spring, 1949:*** Edward Clay Lingafelter, *Chemistry;* Erling J. Ordal, *Microbiology.* ***Terms expire spring, 1948:*** Ross A. Beaumont, *Mathematics;* Howard A. Coombs, *Geology.* ***Terms expire spring, 1947:*** George Goodspeed, *Geology;* Rex Robinson, *Chemistry.*

IV. TECHNOLOGY. ***Terms expire spring, 1949:*** Everett Owen Eastwood, *Mech. Engr.;* Robert B. Van Horn, *Civil Engr.;* Elgin Roscoe Wilcox, *General Engr.* ***Terms expire spring, 1948:*** Robert Q. Brown, *General Engr.;* Bror Grondal, *Forestry;* Fred H. Rhodes, *Civil Engr.* ***Terms expire spring, 1947:*** Fred S. Eastman, *Aero. Engr.;* Bryan T. McMinn, *Mech. Engr.;* Gordon Shuck, *Elec. Engr.*

V. SOCIAL STUDIES. ***Term expires spring, 1949:*** William Stull Holt, *History.* ***Term expires spring, 1948:*** Phil Church, *Geography.* ***Term expires spring, 1947:*** Verne Ray, *Anthropology.*

VI. APPLIED SOCIAL STUDIES. ***Terms expire spring, 1949:*** Henry Alfred Burd, *E.&B.;* Blanche Payne, *Home Econ.;* Harry M. Cross, *Law.* ***Terms expire spring, 1948:*** William E. Cox, *E.&B.;* Jennie Rowntree, *Home Econ.;* Robert L. Taylor, *Law.* ***Terms expire spring, 1947:*** R. E. Belshaw, *Physical Education for Men;* Donald Mackenzie, *E.&B.;* Rudolph Nottelmann, *Law.*

## ALPHABETICAL LIST OF THE UNIVERSITY FACULTY

### 1946-47‡

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, The Tulane University of the State of Louisiana; LL.D., 1946, University of Illinois; LL.D., 1946, Lake Forest University; D.Sc., 1947, Whitman

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

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

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

ALFORD, HAROLD, 1946.....Acting Associate in English
B.A., 1938, Washington

ALLISON, MARY, 1945.....Associate in Romanic Languages
B.A., 1926, College of Idaho; M.A., 1928, Northwestern

ALPS, GLEN EARL, 1945.....Acting Associate in Art
B.A., 1940, Colorado State College of Education

ANDERSON, ARTHUR G., 1946.....Instructor in Chemistry
B.S., 1940, Illinois; M.S., 1942, Ph.D., 1944, Michigan

ANDERSON, CLARENCE L., 1946.....Lecturer in Fisheries
B.S., 1917, M.S., 1924, Washington

ANDERSON, ELAM D., 1940.....Lecturer in Nursing
A.B., 1928, Utah; M.D., 1932, Northwestern

ANDERSON, FRED, 1945.....Acting Associate in Art
B.A., 1941, Washington

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

ANDERSON, O. A., 1946.....Clinical Professor of Dentistry; Executive Officer of Crown and Bridge Department
D.M.D., 1918, University of Oregon College of Dentistry; F.A.C.D. Honorary

ANDERSON, SYLVIA FINLAY, 1920 (1943).....Instructor in English
B.A., 1919, M.A., 1923, Washington

ANDERSON, VICTORIA, 1937.....Associate in English
B.A., 1914, M.A., 1917, Washington

†ANDREWS, MARY JANE, 1945.....Associate Professor of Physical Education
M.A., 1937, Columbia Teachers College

ANKELE, FELICE CHARLOTTE, 1926 (1936).....Instructor in German
B.A., 1925, M.A., 1926, Ph.D., 1936, Washington

ARESTAD, SVERRE, 1937 (1945).....Ass't Prof. of Scandinavian Languages and Literature
B.A., 1929, Ph.D., 1938, Washington

ARMSTRONG, HAROLD C., 1946.....Acting Associate in English
A.B., 1935, Brigham Young University; M.A., 1946, Washington

ARRIGONI, LOUIS, 1943 (1945).....Assistant Professor of Pharmaceutical Chemistry
B.S., 1938, M.S., 1940, Ph.D., 1945, Washington

ASTEL, GEORGE B., 1943.....Assistant Professor of Journalism
B.A., 1923, Washington

AUERNHEIMER, AUGUST A., 1928 (1937).....Assistant Professor of Physical Education
B.P.E., Normal College; M.A., 1932, Columbia

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

AVERY, DONALD EDWARD, 1945 (1946).....Instructor in General Engineering
B.S. in M.E., 1937, Washington

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

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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.

‡ Revised as of March 1, 1947.

† On leave.

BACKSTROM, MAJOR BERT H., 1946...Assistant Professor of Military Science and Tactics

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

BAILEY, Lieut. Comdr. CHARLES A. (D) U.S.N.R., 1946.Assistant Professor of Naval Science
B.S., 1942, University of California

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

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

BALLARD, ARTHUR C., 1929..... .....Research Associate in Anthropology
B.S., 1932, Washington

BANGS, NAN J., 1944.....Acting Associate in Art
B.F.A., 1937, Nebraska State Teachers College

BANNICK, EDWIN GEORGE, 1947.....Clinical Professor of Medicine
B.S., 1916, Iowa; M.D., 1920, Iowa School of Medicine

BARBER, THEODORE M., 1946.....Lecturer in Nursing
B.S., 1925, Iowa; M.D., 1927, Nebraska Medical School

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

BARNABY, JOSEPH THOMAS, 1934.....Lecturer in Fisheries
B.S., 1929, Washington; M.S., 1932, Stanford

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

BARRY, FRANCES EVELYN, 1945.....Instructor in Nursing
R.N., B.S., 1938, Wisconsin; M.S., 1943, Chicago

BASSETT, RAYMOND E., 1946.....Acting Instructor and Research Assistant in Sociology
B.A., 1928, Yale College; M.A., University of Vermont

BASSETTI, MARY WILSON, 1946.....Acting Associate in Art
B.A., 1944, Washington

BAUER, HARRY C., 1945 (1946).....Lecturer in Librarianship; Associate Librarian
B.A., 1927, M.S., 1929, Washington University; Certificate of Librarianship, 1931, St. Louis Library School

BEAL, MAUD L., 1933 (1941).....Instructor in English
B.A., 1926, M.A., 1929, Washington

BEARD, HARRY RANDALL, 1945.....Lecturer in Fisheries
B.A., 1917, Colorado; M.S., 1920, Wisconsin

BEAUMONT, ROSS A., 1940 (1944).....Assistant Professor of Mathematics
A.B., 1936, M.S., 1937, Michigan; Ph.D., 1940, Illinois

BECK, ELEANOR N., 1932.....Associate in Music
Pupil of Marcel Grandjany, Harpist, America School, Fontainebleau, Paris

BECKER, ROLAND FREDERICK, 1946.....Assistant Professor of Anatomy
B.S., 1935, M.S., 1937, Massachusetts State College; Ph.D., 1940, Northwestern

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

BELL, MARJORIE, 1946.....Acting Associate in English
B.A., 1931, Washington

BELSHAW, ROLAND E., 1930 (1943).....Professor of Physical Education
B.A., 1927, Oregon; M.A., 1930, Columbia

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

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

BENNIE, DOROTHY SANGER, 1946.....
Field Work Supervisor in Graduate School of Social Work
B.A., 1933, Washington

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

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

BENSON, HENRY KREITZER, 1904 (1912).....Professor of Chemical Engineering; Executive Officer, Departments of Chemistry and Chemical Engineering
A.B., 1899, A.M., 1902, Franklin and Marshall; Ph.D., 1907, Columbia; D.Sc., 1926, Franklin and Marshall

† On leave

BENSON, MERRITT E., 1931 (1937).....Associate Professor of Journalism
LL.B., 1930, Minnesota

BERRY, DONNA MAY, 1946.....Associate in Physical Education
B.S., 1944, Utah; M.A., 1946, Stanford

BERTRAM, JOHN, 1946.....Acting Associate in General Engineering

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

BIRNBAUM, WILLIAM ZYGMUNT, 1939 (1945).....Associate Professor of Mathematics
LL.M., 1925, Ph.D., 1929, University of Lwow

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

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

BLASER, H. WESTON, 1946.....Assistant Professor of Botany
B.S., 1931, A.M., 1933, Temple; Ph.D., 1940, Cornell

BLISS, A. 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

BOEHMER, HERBERT, 1937 (1945).....Assistant Professor of General Engineering
Dipl. Ing. Braunschweig, 1928, Germany; M.S. in A.E., 1934, Washington

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

BONIFAS, PAUL, 1946.....Acting Associate Professor of Art

BONSACK, DANIEL, 1946.....Instructor in Music
B.A., 1941, California

BOSELLY, SHIRLEY, 1946.....Acting Instructor in Mathematics
B.S., 1922, Whitman College

BOSTETTER, EDWARD E., 1940.....Assistant Professor of English
A.B., 1935, Franklin and Marshall; Ph.D., 1938, Princeton

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

BOTZER, WILLIAM H., 1946.....Lecturer in Economics and Business
B.A., 1935, LL.B., 1938, Washington

BOWERMAN, CHARLES E., 1946.....Assistant Professor of Sociology
A.B., 1935, Denison University; M.A., 1941, University of Chicago

BOYER, HARVEY KINSEY, 1944.....Acting Instructor in Mathematics
A.B., 1902, Wheaton

BOYER, HELEN ELOISE, 1946.....Instructor in Nursing
R.N., 1932, Swedish Hospital; B.S., 1934, Washington

BOYLE, JEAN ELIZABETH, 1942 (1946).....Assistant Professor of Nursing
R.N., B.S. in Nursing, 1936, Master of Nursing, 1941, Washington

BRAKEL, HENRY LOUIS, 1905 (1936).....Professor of Engineering Physics
B.S., 1902, Olivet College; M.A., 1905, Washington; Ph.D., 1912, Cornell

BRAUER, JOHN CHARLES, 1947.....Professor of Dentistry for Children;
Director of Postgraduate Dental Education

BRAZEAU, WENDALL P., 1945.....Acting Associate in Art
B.A., 1933, Washington

BREWER, STANLEY H., 1946.....Instructor in Economics and Business
B.A., 1942, M.B.A., 1943, Washington

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

BROWN, MALCOLM, 1946.....Instructor in English
B.A., 1931, Washington

BROWN, ROBERT QUIXOTE, 1919 (1941).....Associate Professor of General Engineering
B.S. in E.E., 1916, Washington

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

BRUENNER, BERTRAM F., 1938.....Lecturer in Nursing
B.S., 1925, M.D., 1929, Minnesota

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

BUECHEL, HENRY, 1946.....Assistant Professor of Economics and Business

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

BURGESS, JANNA P., 1937 (1943).....Instructor in English
B.A., 1918, Iowa; M.A., 1928, Washington

BURKE, AGNES EVELYN, 1943.....Instructor in Nursing
R.N., 1930, Western Reserve University; B.S., 1930, Akron Municipal University; M.A., 1941, Western Reserve

BURNAM, TOM, 1946.....Acting Associate in English
B.A., 1936, M.A., 1937, University of Idaho

BURNS, HARRY H., 1934 (1943).....Assistant Professor of English
B.A., 1928, Ph.D., 1935, Washington

BURNS, K. L., 1946.....Acting Associate in Mathematics
B.S., 1943, U. S. Naval Academy

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

BUTLER, CHARLES, 1946.....Lecturer in Fisheries
B.S., 1929, Monmouth

BUTLER, RALPH H. R., 1942 (1943).....Acting Instructor in Physics
B.S., 1940, M.S., 1945, Washington

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

BUTTERWORTH, JOSEPH, JR., 1929.....Associate in English
B.A., 1919, M.A., 1921, Brown

CADY, GEORGE H., 1938 (1943).....Associate Professor of Chemistry
A.B., 1927, A.M., 1928, Kansas; Ph.D., 1931, California

CALDWELL, MILDRED, 1946.....Instructor in Nursing
R.N., 1928, Lakeview Hospital, Chicago; B.S., 1940, Central Y.M.C.A. College, Chicago

CAMPBELL, ALEXANDER D., 1946.....Lecturer in Nursing
B.S., 1930, Whitman; M.D., 1934, Johns Hopkins School of Medicine

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

CARLSON, CARL B., 1945.....Lecturer in Fisheries
B.S. in Chem. Eng., 1935, Washington

CARLSON, LOREN D., 1945.....Instructor in Zoology
B.S., 1937, St. Ambrose; Ph.D., 1941, Iowa

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

CARR, KENNETH M., 1944 (1945).....Associate in Drama
B.A., 1942, Eastern Washington College of Education

CARRELL, JAMES AUBREY, 1939 (1941).....Associate Professor of Speech
A.B., 1927, Nebraska Wesleyan; M.A., 1929, Ph.D., 1936, Northwestern

CARTER, DOUGLAS B., 1947.....Acting Associate in Geography
B.A., 1944, Eastern Washington College of Education

CASKEY, THOMAS, 1947.....Acting Associate in Mechanical Engineering
B.S. in E.E., 1930, University of California

CEDERBERG, MARTHA, 1947.....Acting Associate in English
A.B., 1929, Washington

CHAMBERS, WILLIAM WALLACE, 1946.....Instructor in Anatomy
B.S., 1938, State Teachers College, Tenn.; Ph.D., 1946, Vanderbilt

CHEEVER, BRUCE B., 1946.....Associate in Economics and Business
B.A., 1938, Washington

†CHENG, CHENG-K'UN, 1942 (1945).....Assistant Professor of Sociology
B.A., 1931, Yenching University (Peiping); M.A., 1937, Washington

CHENOWETH, HARRY H., 1946.....Acting Instructor in Civil Engineering
B.S., 1937, Washington

CHESSEX, JEAN CHARLES WILLIAM, 1928 (1934).....Associate Professor of Romanic Languages
B.A., 1920, B.D., 1922, M.A., 1925, Lausanne (Switzerland)

† On leave

CHI WEN-SHUN, 1947.....Acting Associate in the Far Eastern Department
B.A., 1932, Tsing Hua University

CHIPPS, H. DAVIS, 1947.....Assistant Professor of Pathology
B.S., 1930, Alabama; M.D., 1934, University of Louisville School of Medicine

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

CHRISTENSEN, HARVEY D., 1947.....Acting Associate in Mechanical Engineering
B.S. in M.E., 1943, Washington

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

CHU, S. C., 1947.....Instructor in the Far Eastern Department
A.B., 1928, A.M., 1931, Yenching University

CHURCH, PHIL E., 1935 (1943).....Associate Professor of Geography and Meteorology
B.S., 1923, Chicago; M.A., 1932, Ph.D., 1937, Clark University

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

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

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

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

CLEMENS, LOIS G., 1947.....Acting Associate in English
A.B., 1935, University of Nebraska

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

CLOUGH, RAY WILLIAM, 1946.....Lecturer in Fisheries
B.A., 1908, M.A., 1909, Tufts; Ph.D., 1922, Washington

CLUCK, ERNEST ROY, 1947.....Lecturer in Economics and Business
LL.B., 1934, Washington

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

CODD, JAMES E., 1947.....Acting Associate in History
B.A., 1938, Washington

COE, HERBERT E., 1935.....Lecturer in Nursing
A.B., 1904, M.D., 1906, Michigan

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

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

COLE, KENNETH C., 1924 (1936).....Professor of Political Science; Special Associate in the Bureau of Public Administration
B.Lit., 1924, Oxford; Ph.D., 1930, Harvard

COLE, RICHARD J., 1946.....Acting Instructor in General Engineering
B.S., 1942, Washington; M.S., 1943, M.I.T.

COLE, THOMAS RAYMOND, 1930.....Professor of Educational Administration and Supervision
M.A., 1902, Upper Iowa; Ph.B., 1904, DePauw; LL.D., 1931, Upper Iowa

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

COLLINGWOOD, LILLIAN REID, 1946 (1947).....Associate in English
B.A., 1942, Texas College of Mines; M.A., 1943, University of Michigan

COLTON, AGNES LOUISE, 1941 (1946).....Instructor in English
B.A., 1925, Whitman; M.A., 1928, Oregon; Ph.D., 1939, Washington

CONDON, JUSTIN J., 1946.....Associate in Economics and Business
A.B., 1939, Cornell

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

COOK, THOMAS I., 1939 (1945).....Professor of Political Science
B.S., 1928, London University; Ph.D., 1938, Columbia

COOMBS, HOWARD A., 1935 (1943).....Associate Professor of Geology
B.S., 1929, M.S., 1931, Ph.D., 1935, Washington

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

† On leave

COOPEY, RAYMOND W., 1945.....Associate in Zoology
B.S., 1930, M.S., 1938, Oregon State College

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

CORNU, DONALD, 1928 (1945).....Associate Professor of English
LL.B., 1922, M.A., 1926, Ph.D., 1928, Washington

COSTIGAN, GIOVANNI, 1934 (1942).....Associate Professor of History
A.B., 1926, Oxford; M.A., 1928, Wisconsin; M.A., 1930, Oxford; Ph.D., 1930, Wisconsin

COUNTRYMAN, VERN A., 1946.....Instructor in Law
B.A., 1939, LL.B., 1942, Washington

COVINGTON, DUANE MONROE, 1945.....Instructor in Forestry;
Resident Manager at Pack Forest

COX, EDWARD GODFREY, 1911 (1926).....Professor of English
B.A., 1899, Wabash College; M.A., 1901, Ph.D., 1906, Cornell

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

CRAIG, JOSEPH A., 1931.....Lecturer in Fisheries
B.A., 1923, M.A., 1931, Stanford

CRAIN, RICHARD W., 1936.....Instructor in Mechanical Engineering
B.S. in E.E., 1930, B.S. in M.E., 1931, Colorado State College

CRAMLET, CLYDE M., 1920 (1934).....Associate Professor of Mathematics
A.B., 1916, Walla Walla; M.S., 1920, Ph.D., 1926, Washington

CRANE, CLAYTON HERBERT, 1946.....Acting Associate in Mechanical Engineering
B.S., 1945, Washington

CRAWFORD, MARY LOUISE, 1946.....Instructor in Nursing
R.N., B.S., 1946, Washington

CREEL, WILHELMINE SCHAEFFER, 1940 (1944).....Assistant Professor of Music
B.M., 1927, M.M., 1929, American Conservatory of Music; work with Bela Bartok and Zolton Kodaly

CREORE, ALVIN EMERSON, 1940.....Instructor in Romanic Languages
A.B., 1934, M.A., 1936, Rochester; Ph.D., 1939, Johns Hopkins

CROSS, HARRIET, 1932 (1941).....Assistant Professor of Nursing
R.N., 1921, Columbia Hospital, Wisconsin; B.S., 1922, Minnesota; M.N., 1940, Washington

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

CRYSTAL, DEAN K., 1947.....Clinical Associate in Physiology
B.S., 1936, Washington; B.A., 1938, Oxford University; M.D., 1941, Johns Hopkins

CURTIS, ELIZABETH, 1930 (1943).....Instructor in Art
B.F.A., 1929, M.F.A., 1933, Washington

CUTLER, RUSSELL K., 1946.....Acting Assistant Professor of Physical Education
B.Ed., 1930, U.C.L.A.; M.S., 1934, Oregon

DAHLGREN, EDWIN HAROLD, 1934.....Lecturer in Fisheries
B.S., 1931, Washington

DAKAN, CARL SPENCER, 1919 (1923).....Professor of Corporation Finance and Investments
B.S., 1909, Missouri

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

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

DAUBEN, HYP JOHNSON, 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 Romanic Languages
A.B., 1924, Sorbonne, Paris; B.A., 1927, M.A., 1931, Saskatchewan;
Ph.D., 1936, Johns Hopkins

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

DAVIS, ERMA NELSON, 1926.....Associate in History
B.A., 1918, Denver; M.A., 1924, Utah

DAVIS, JOHN B., 1946.....Acting Associate in Art
B.A., 1936, M.A., 1937, Washington

DAVIS, JOHN M., 1945.....Lecturer in Law
B.A., 1936, LL.B., 1940, Washington

DE GRACE, ROBERT FOREST, 1946.....Acting Associate in General Engineering

DEHN, WILLIAM MAURICE, 1907 (1919).....Professor of Organic Chemistry
A.B., 1893, A.M., 1896, Hope; Ph.D., 1903, Illinois

DELACY, ALLAN C., 1946.....Acting Instructor in Fisheries
B.S., 1931, M.S., 1933, Ph.D., 1941, Washington

DEMMERY, JOSEPH, 1928 (1934).....Professor of Business Fluctuations and Real Estate
Ph.B., 1920, M.A., 1924, Chicago

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

DENNY, KATHERINE E., 1945.....Instructor in Ceramics
B.A., 1941, Washington; M.S., 1943, Ohio State

DENSMORE, HARVEY BRUCE, 1907 (1933)..Professor of Greek; Chairman, General Studies; Executive Officer of the Dept. of Classical Languages and Literature
A.B., 1903, Oregon; A.B., 1907, Oxford

deVRIES, 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., 1921, M.D., 1928, University of Nebraska

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

DIRSTINE, MORRIS J., 1946.....Clinical Associate in Anatomy
B.S., 1932, Washington; M.D., 1937, Northwestern

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

DOCTER, JACK MERTON, 1947.....Lecturer in Nursing
B.S., 1937, Washington; M.D., 1941, Columbia

DONALDSON, LAUREN R., 1935 (1945).....Associate Professor of Fisheries
B.S., 1926, Intermountain Union College; M.S., 1931, Ph.D., 1939, Washington

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

DONOGHUE, LORRAINE, 1946.....Associate in Music
B.A., 1939; M.A., 1946, Washington

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

DORWART, ROBERT J., 1947.....Acting Associate in Electrical Engineering

DOUGLAS, HOWARD CLARK, 1941 (1943).....Assistant Professor of Microbiology
A.B., 1936, Ph.D., 1942, California

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

DRAPER, EDGAR MARION, 1925 (1936).....Professor of Secondary Education and Curriculum
B.A., 1916, M.A., 1925, Ph.D., 1927, Washington

DRAPER, OSCAR E., 1920 (1934).....Lecturer in Economics and Business
M.Acct., 1902, Vories Business College

DRESSLAR, MARTHA ESTELLA, 1918 (1937).....Associate Professor of Home Economics
A.B., 1913, Southern California; B.S., 1917, Washington; M.S., 1918, Columbia

DUCHOW, ESTHER, 1940.....Associate in Microbiology
B.S., 1934, Washington

DUNLOP, HENRY A., 1931 (1946).....Acting Professor of Fisheries; Executive Assistant in the School of Fisheries
B.A., 1919, M.A., 1922, British Columbia

DuPEN, EVERETT, 1945.....Instructor in Art
B.F.A., 1937, Yale

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

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

†DVORAK, AUGUST, 1923 (1937).....Professor of Educational Research and Statistics
B.A., 1920, Ph.D., 1923, Minnesota

DWINNELL, JAMES HERBERT, 1941 (1945).....Ass't Professor of Aeronautical Engineering
B.S. in A.E., 1939, Washington

† On leave

EARLE, FRANCES M., 1931 (1941).....Associate Professor of Geography
B.A., 1918, Winthrop; 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., 1929, Washington

EASTMAN, FLOREEN G., 1943.....Associate in Mathematics
A.B., 1923, Nebraska

EASTMAN, FRED S., 1927 (1946).....Professor of Aeronautical Engineering; Executive Officer of the Aeronautical Engineering Department
B.S. in E.E., 1925, Washington; M.S., 1929, Massachusetts Institute of Technology

EASTWOOD, EVERETT OWEN, 1905.....Professor of Mechanical Engineering; Director of Guggenheim Laboratories
C.E., 1896, A.B., 1897, A.M., 1899, Virginia;
B.S., 1902, Massachusetts Institute of Technology

EBY, EDWIN HAROLD, 1927 (1942).....Associate Professor of English
Ph.B., 1923, Chicago; Ph.D., 1927, Washington

†ECKELMAN, ERNEST O., 1911 (1934).....Professor of Germanic Literature
B.A., 1897, Northwestern; B.L., 1898, Wisconsin; Ph.D., 1906, Heidelberg

EDMONDS, HENRY W., 1947.....Clinical Instructor in Pathology
A.B., 1931, M.D., 1936, Washington University

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

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

EGGERS, ROLF VAN KERVAL, 1942.....Lecturer in Nursing
B.A., B.S., 1930, North Dakota; M.D., 1933, Chicago

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

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

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

ELMENDORF, WILLIAM W., 1946.....Acting Instructor in Anthropology
B.A., 1934, M.A., 1935, Washington

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

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

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

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

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

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

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

ESTEVES, NELSON G., 1946.....Associate in Romanic Languages
B.A., 1945, California

ETHEL, GARLAND, 1927.....Instructor in English
B.A., 1923, M.A., 1927, Ph.D., 1928, Washington

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

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

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

EVEREST, HAROLD P., 1940 (1945)...Professor of Journalism; Director, School of Journalism
B.A., 1939, Washington

EVERETT, NEWTON B., 1946.....Assistant Professor of Anatomy
B.S., 1937, M.S., 1938, North Texas State College; Ph.D., 1942, Michigan

† On leave

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

FANG CHAO-YING, 1947.....Research Associate in the Far Eastern Department
B.S., 1928, Yenching University

FANG LIEN-CHI TU, 1947.....Research Associate in the Far Eastern Department
B.A., 1924, M.A., 1926, Yenching University

FARNER, L. M., 1946.....Clinical Assistant Professor of Public Health and Preventive Medicine
A.B., 1930, M.D., 1936, 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, Commander RAYMOND FORREST, U.S.N., 1921 (1940) .....
Professor of Transportation; Associate Professor of Naval Science
B.A., 1920, California; M.A., 1926, Washington

FEATHERSTONE, MARIAN, 1946.....Assistant Professor of Home Economics
B.S., 1925, Idaho; M.A., 1931, U.C.L.A.

FELTON, VIRGINIA ELLEN, 1943.....Instructor in Nursing
R.N., 1936, Toronto General Hospital; B.S. in Nursing, 1942, Washington

FERGUSON, FREDERICK F., 1946.....Assistant Professor of Zoology
A.B., 1932, M.A., 1934, Tennessee; Ph.D., 1938, Virginia

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

FERNALD, ROBERT L., 1946.....Instructor in Zoology
A.B., 1937, Monmouth College; Ph.D., 1941, California

FIDEL, Lieut. Comdr. JOHN A., U.S.N., 1946.....Assistant Professor of Naval Science
B.S., 1939, U. S. Naval Academy

FINLEY, JACK, 1946.....Instructor in Metallurgy
B.S. in Engineering, 1939, Michigan College of Mines

FISCHER, LOUIS, 1935 (1945).....Professor of Pharmaceutical Chemistry
B.S., Ph.C., 1926, M.S., 1928, Ph.D., 1933, Washington

FISHER, JAMES H., 1945.....Acting Associate in General Engineering
B.S. in M.E., 1944, Washington

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

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

FLOYD, EDITH, 1946.....Associate in Economics and Business
B.A., 1944, Washington; M.A., 1946, Radcliffe

FLOYD, MYRTLE LEE, 1947.....Instructor in Nursing
B.S., 1943, Florida State College for Women

FOLEY, BARBARA, 1946.....Associate in Drama

FOOTE, HOPE LUCILLE, 1923 (1937).....Associate Professor of Interior Design
A.B., 1920, Iowa State; M.A., 1923, Columbia

FOOTE, L. LAVERNE, 1946.....Clinical Professor and Special Lecturer in Nomenclature
B.S., D.M.D., 1929, University of Oregon College of Dentistry

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

FORREST, CHARLES DORSEY, 1946.....Assistant Professor of Marketing
B.S., 1933, Northwestern; M.B.A., 1940, U.S.C.

FOSTER, FREDERIC JOHN, 1935.....Lecturer in Fisheries

FOUTS, JOHN D., 1947..Clinical Assistant Professor of Public Health and Preventive Medicine
B.S., 1932, E. Kentucky State Teachers College; M.D., 1936, University of Louisville

FOX, KATHERINE S., 1945.....Instructor in Physical Education
B.S., 1938, Washington; M.S., 1943, University of Oregon

FRANCHERE, HOYT C., 1947.....Lecturer in English
A.B., 1928, M.A., 1931, Iowa

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

FRANZKE, ALBERT L., 1936 (1939).....Associate Professor of Speech
B.A., 1916, M.A., 1933, Lawrence

FREEMAN, GEORGE WILLIAM, 1942.....Lecturer in Nursing
B.S., 1924, Washington; M.D., 1928, Johns Hopkins

†On leave

FREIN, PIERRE JOSEPH, 1903.....Professor of Romanic Languages
A.B., 1892, Williams College; Ph.D., 1899, Johns Hopkins

FRITTER, Commander CHARLES T., U.S.N., 1946.....Associate Professor of Naval Science
B.S., 1933, U.S. Naval Academy

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

FRYE, THEODORE CHRISTIAN, 1903.....Professor of Botany
B.S., 1894, Illinois; Ph.D., 1902, Chicago

FULLER, RICHARD E., 1930 (1940).....Research Professor of Geology
B.S., 1924, M.S., 1925, Ph.D., 1930, Washington

FULLER, STEVEN D., 1946.....Acting Associate in Art
B.A., 1939, Washington

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

GANZER, VICTOR MARTIN, 1947.....Assistant Professor of Aeronautical Engineering
B.A., 1933, Augustana College; B.S., 1941, Washington

GARCIA-PRADA, CARLOS, 1925 (1939).....Professor of Spanish
A.B., 1918, Colombia (South America); A.M., 1924, Michigan;
Ph.D., 1929, Bogota (South America)

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

†GATES, CHARLES M., 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

GERMAN, WILLIAM M., 1946....Clinical Instructor in Operative and Crown and Bridge Depts.
B.S., D.D.S., 1943, University of Southern California

GERSHEVSKY, NOAH DAVID, 1943.....Instructor in Russian Language
B.S., 1930, Montana School of Mines

GIEDT, WALVIN R., 1946.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1932, University of South Dakota; M.D., 1937, Rush Medical College, University of Chicago; M.P.H., 1941, Johns Hopkins

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

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

GLENN, DAVID LEONARD, Jr., 1946.....Acting Associate in General Engineering
B.S., 1945, Washington

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

GOODRICH, FOREST JACKSON, 1914 (1934).....Professor of Pharmacognosy;
State Chemist; Dean of the College of Pharmacy
Ph.C., 1913, B.S., 1914, M.S., 1917, Ph.D., 1926, Washington

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

GORMLEY, GENEVA, 1946.....Acting Associate in Speech
B.A., 1944, Washington

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

GOWEN, HERBERT HENRY, 1909 (1914).....Professor Emeritus of Oriental Studies
St. Augustine's College (Canterbury); D.D., 1912, Whitman College

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

GRAF, HUBERT ARTHUR, 1936.....Associate in Music
Theoretical work with H. J. Williams, London, England; Enrico Tramonti, Chicago;
Graduate, Holy Names Academy

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

GRAY, ROBERT SIMPSON, 1939.....Associate in Drama
B.A., 1936, M.A., 1938, Washington

† On leave

GREEN, D. M., 1946.....Associate Professor of Medicine and Pharmacology
A.B., 1931, Fordham; M.S., 1935, New York University; M.D., 1938, New York Medical College

GREEN, MILTON D., 1944.....Professor of Law
B.A., 1926, J.D., 1928, University of Michigan; LL.M., 1938, J.D.Sc., 1943, Columbia

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

GREGORY, NORMAN W., 1946.....Instructor in Chemistry
B.S., 1940, M.S., 1941, Washington; Ph.D., 1944, Ohio State University

GREVSTAD, BARNEY E., 1946.....Acting Instructor in Architecture
B.A., 1936, Washington

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

GRISWOLD, MANZER, 1946.....Acting Associate in Sociology
B.S., 1940, Montana

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

GROVES, ELIZABETH ALICE, 1945.....Assistant Professor of Librarianship
B.A., 1929, British Columbia; B.S. in L.S., 1930, Washington

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

GUIDON, MICHAEL, III, 1946.....Acting Instructor in Mechanical Engineering
B.S. in M.E., 1942, Lehigh University

GULLIKSON, ALBERT CLARENCE, 1942.....Instructor in General Engineering
B.S. in M.E., 1924; M.E., 1938, Washington

GUNDLACH, RALPH, 1927 (1937).....Associate Professor of Psychology
B.A., 1924, M.A., 1925, Washington; Ph.D., 1927, Illinois

GUNN, ELIZABETH, 1946.....Assistant Professor of Physical Education
B.S., 1923, Washington; M.D., 1927, University of Oregon Medical School

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

GUTHRIDGE, JANE, 1947.....Instructor in Nursing
B.S., 1942, Washington

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

HALD, EARL C., 1946.....Assistant Professor of Economics and Business
B.S., 1931, A.M., 1932, Nebraska; Ph.D., 1939, California

HALL, AMY VIOLET, 1924 (1945).....Associate Professor of English
B.A., 1920, M.A., 1923, Ph.D., 1940, Washington

HALL, DAVID CONNOLY, 1908.....Professor of Hygiene
Ph.B., 1901, Brown; Sc.M., 1903, Chicago; M.D., 1907, Rush Medical College; Fellow, American College of Physicians

HALL, GEORGE D., 1947.....Acting Associate in Electrical Engineering
B.S., 1946, Washington

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

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

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

HALVORSEN, CLIFFORD, 1946.....Lecturer in Nursing
A.B., 1930, Utah; M.D., 1932, Colorado

HAMACK, FRANK HARTMOND, 1921.....Lecturer in Economics and Business
LL.B., 1916, Georgetown University

HAMPSON, ROBERT E., 1946.....Clinical Professor of Operative Dentistry; Executive Officer of the Department of Operative Dentistry
D.M.D., 1917, University of Oregon College of Dentistry; F.A.C.D. Honorary

†HANSEN, THOMAS LOUIS, 1941.....Instructor in Architecture
B.Arch., 1930, Oregon; M.Arch., 1939, M.I.T.; M.S., 1934, Columbia

† On leave

HAPP, MAURINE, 1945.....Lecturer in Economics and Business
B.A., 1930, Northwestern; M.B.A., 1937, University of Chicago School of Business Administration

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

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

HARRINGTON, DONAL FRANCIS, 1938 (1943).....Assistant 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

HARRIS, GLEN, 1946.....Acting Associate in English
B.S., 1923, M.A., 1924, Colgate

HARRIS, MARKHAM, 1946.....Associate in English
A.B., 1929, M.A., 1931, Williams

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

HARRISON, ROGER W., 1946.....Lecturer in Fisheries
B.S., 1925, Washington State; M.S., 1928, George Washington

HARSCH, ALFRED E., 1930 (1940).....Professor of Law
B.A., 1926, LL.B., 1928, Washington

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

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

HAVILAND, JAMES WEST, 1946.....Lecturer in Nursing
A.B., 1932, Union College; M.D., 1936, Johns Hopkins

HAWES, EVELYN J., 1946.....Acting Associate in Speech
B.A., 1937, Washington

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

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

HEARST, JOSEPH A., 1947.....Research Associate in Political Science
B.A., 1940, Washington

HEATHERS, LOUISE, 1945.....Assistant Professor of Psychology
B.A., 1933, Washington; Ph.D., 1940, Yale

HELBERG, BRUCE FREDERICK, 1943.....Associate in Journalism
B.A., 1936, Washington

HELMLINGE, CHARLES LOUIS, 1911 (1940).....Professor Emeritus of Romanic Languages
B.Ph., 1911, Berea; M.A., 1915, Washington

HEMENWAY, ISABEL, 1946.....Acting Associate in English
B.A., 1909, Nebraska; M.A., 1912, Chicago

HENDERSON, JOSEPH E., 1929 (1942).....Professor of Physics
B.S., 1922, Wooster; Ph.D., 1928, Yale

HENNES, ROBERT G., 1934 (1941).....Associate Professor of Civil Engineering
B.S. in C.E., 1927, Notre Dame; M.S.(C.E.), 1928, Massachusetts Institute of Technology

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

HENRY, DORA PRIAULX, 1932.....Research Associate in Oceanography
Ph.D., 1931, California

HENSLEY, MERCEDES H., 1939 (1945).....Instructor in Art
B.F.A., 1930, M.F.A., 1938, Washington

HERMANS, THOMAS G., 1929 (1940).....Assistant Professor of Psychology
B.S., 1923, M.A., 1927, Washington

HERRMAN, ARTHUR PHILIP, 1923 (1937).....Professor of Architecture; Executive Officer of the School of Architecture
B.A.(Arch.), 1920, Carnegie Institute of Technology

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

HILDEBRAND, ALICE G., 1946.....Lecturer in Nursing
B.S. in Medicine, 1934, M.D., 1936, Nebraska;
M.Sc. in Medicine, 1940, Minnesota (Mayo Clinic)

HILDEBRAND, J. L., 1946.....Acting Associate in Mathematics
B.A., 1938, M.A., 1940, N. Texas State Teachers College

HILE, FREDERIC W., 1946.....Acting Assistant Professor of Speech
A.B., 1935, M.A., 1937, Denver University

HILEN, ANDREW, 1945.....Instructor in English
B.A., 1937, Washington; Ph.D., 1943, Yale

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

HILL, WILLIAM RYLAND, Jr., 1941.....Assistant Professor of Electrical Engineering
B.S. in E.E., 1934, Washington; M.S. in E.E., 1938, E.E., 1941, California

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

HOAG, ALBERT LYNN, 1946.....Acting Associate in General Engineering
B.S., 1941, Washington

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

†HOFFMAN, KATHERINE JANET, 1942 (1945).....Assistant Professor of Nursing
B.A., 1929, College of Puget Sound; R.N., 1934, Tacoma General School of Nursing; M.N., 1945, Washington

HOFFSTADT, RACHEL EMILIE, 1923 (1939).....Professor of Microbiology
B.S., 1908, Hanover; M.S., 1913, Chicago; Ph.D., 1915, D.Sc., 1921, Johns Hopkins

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

HOLMES, HARLAN B., 1931.....Lecturer in Fisheries
B.A., 1922, M.A., 1931, Stanford

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

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

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

HORSFALL, FRANK, 1935.....Associate in Music

HORTON, GEORGE P., 1934 (1946).....Associate Professor of Psychology
B.S., 1926, M.A., 1930, Ph.D., 1932, Princeton

HORWOOD, EDGAR MILLER, 1946.....Acting Instructor in Civil Engineering
B.S., 1942, Georgia School of Technology

HOTSON, JOHN WILLIAM, 1911 (1936).....Professor of Botany
A.B., 1901, A.M., 1902, McMaster; Ph.D., 1913, Harvard

HOYE, FRANCIS W., 1946.....Instructor in Mechanical Engineering
B.S., 1931, U. S. Naval Academy

HSU, W. SIANG, 1944.....Instructor in the Far Eastern Department
B.S., 1922, Illinois; M.S., 1923, D.Sc., 1928, Harvard

HUBER JOHN RICHARD, 1939 (1942).....Associate Professor of Economics
B.A., 1931, Wooster; M.A., 1933, Ph.D., 1937, Princeton

†HUDSON, ALFRED EMMONS, 1940.....Associate in Anthropology
Ph.B., 1927, Ph.D., 1937, Yale

HUGHES, GLENN, 1919 (1930).....Professor of English; Director of the School of Drama
B.A., 1916, Stanford; M.A., 1921, Washington

HUMPHREY, JAMES L., 1946.....Acting Associate in Mechanical Engineering
B.S. in M.E., 1946, Washington

HUMPHREY, ROBERT CARL, 1946.....Acting Associate in Mechanical Engineering
B.S. in M.E., 1944, Washington

HUMPHREYS, LLOYD G., 1946.....Associate Professor of Psychology; Director of the Division of Testing
B.S., 1935, Oregon; M.A., 1936, Indiana; Ph.D., 1938, Stanford

HUNNER, WESLEY LOUIS, 1946.....Associate in English
B.A., 1935, M.A., 1938, Washington

HUNT, ROSEMARY LONGWOOD, 1945.....Associate in Psychology
B.S., 1943, Washington

HUSTON, FRANCES, 1944.....Acting Associate in English
B.A., 1931, Reed College

† On leave

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

HUTCHINSON, J. CARL, 1946.....Clinical Associate in Anatomy
B.S., 1927, University of Idaho; M.D., 1933, Northwestern; M.S., 1945, Minnesota

HUTCHINSON, MARY GROSS, 1919 (1936).....Professor of Physical Education; Executive Officer, Department of Physical Education for Women
A.B., 1912, Goucher College; M.A., 1915, Columbia

INGLIS, RUTH, 1946.....Assistant Professor of Sociology
A.B., 1935, M.A., 1937, Stanford University; Ph.D., 1945, Bryn Mawr College

IRVINE, DEMAR B., 1937 (1938).....Assistant Professor of Music
B.A., 1929, M.A., 1931, California; Ph.D., 1937, Harvard

ISAACS, WALTER F., 1922 (1929).....Professor of Fine Arts; Director of the School of Art
B.S.(F.A.), 1909, James Millikin

JACKSON, GEORGE B., 1946.....Instructor in German
A.B., 1901, A.M., 1905, Leander Clark College; A.B., 1902, Yale

JACKSON, RICHARD VERNON, 1946.....Acting Associate in General Engineering
B.S. in M.E., 1944, Washington

JACOBER, GORDON E., 1946.....Instructor in Geology
A.B., 1942, Johns Hopkins

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

JACOBSEN, ANDREW B., 1946.....Acting Instructor in Electrical Engineering
B.S. in E.E., 1941, Washington

JACOBSEN, BERNE SELVIG, 1943.....Associate in Journalism
B.A., 1931, Washington

JACOBSEN, PHILIP A., 1927 (1939).....Assistant Professor of General Engineering
B.S., 1926, Washington

JACOBSEN, THEODOR S., 1928 (1941).....Associate Professor of Astronomy and Mathematics; Executive Officer of the Department of Astronomy
B.A., 1922, Stanford; Ph.D., 1926, California

JACOBSON, BERTHE P., 1937 (1939).....Associate Professor of Music
Graduate Conservatory of Geneva; Diploma Schola Cantorum, Paris; Diploma Dalcroze Institute of Geneva

JACOBSON, TECKLA H., 1945.....Instructor in Nursing
R.N., 1927, Washington University; B.S., 1939, Washington

JAHN, JULIUS A., 1946.....Acting Instructor in Sociology
B.A., 1938, M.A., 1942, Minnesota

JAHNCKE, GLADYS, 1947.....Lecturer in Nursing
R.N., 1929, Michael Reese Hospital; B.S., 1943, Teachers College, Columbia University

JAMES, JOHN, 1946.....Acting Associate in Sociology
B.A., 1936, Connecticut; M.A., 1942, Washington

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

JARVI, ALBERT O., 1945.....Instructor in Civil Engineering
B.S. in C.E., 1938, Washington; M.S. in C.E., 1939, Massachusetts Institute of Technology

JENSEN, ALFRED, 1930 (1939).....Assistant Professor of General Engineering
B.S. in C.E., 1925, M.S. in C.E., 1937, Washington

JENSEN, CLYDE R., 1947.....Clinical Assistant Professor of Pathology
A.B., 1923, Dartmouth; M.D., 1925, Rush Medical College

JENSEN, EMIL C., 1946.....Clinical Instructor in Sanitation
B.S. in C.E., 1936, Washington; M.S. in Eng., 1938, Harvard

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

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

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

JOHNSON, CHARLES WILLIS, 1903 (1904).....Professor of Pharmaceutical Chemistry; Dean Emeritus of the College of Pharmacy
Ph.C., 1896, B.S., 1900, Ph.D., 1903, Michigan

JOHNSON, LAWRENCE EGON, 1946.....Acting Associate in Civil Engineering
B.S. in C.E., 1945, Washington

JOHNSON, MARY EVANS, 1946.....Instructor in Music
B.M., 1946, Michigan

JOHNSON, MARY LOUISE, 1945.....Instructor in Home Economics
B.A., 1940, Hardin-Simmons; M.S., 1942, Wisconsin

JOHNSON, ROBERT J., 1946.....Instructor in Anatomy
B.S., 1937, Iowa State Teachers College; M.D., 1943, U. of Iowa

JOHNSTON, KATHLEEN, 1946.....Instructor in Home Economics
B.A., 1933, British Columbia; B.S., 1940, Washington; Ph.D., 1946, Cornell

JONES, AMARETTA, 1944.....
Assistant Professor of Community Organization, Graduate School of Social Work
B.A., 1921, Wisconsin; M.A., 1938, Chicago

JONES, CLAYTON C., 1946.....Research Associate in Political Science

JONES, ERNEST M., 1945 (1946)....Prof. of Operative Dentistry; Dean of School of Dentistry
D.D.S., 1916, Northwestern

JONES, MARSHALL, 1946.....Clinical Associate in Anatomy
B.S., Washington; M.D., Northwestern

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

JONES, Colonel WILLIAM H., Jr., 1946.....Professor of Military Science and Tactics
B.A., 1908, Ogden College; B.S., 1913, U. S. Military Academy

JONQUET, EUGENE MAURICE, 1940 (1946).....
Assistant Professor in Graduate School of Social Work
B.A., 1932, James Millikin University; M.A., 1933, M.S., 1938, Washington University

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

KAHL, JOHN, 1946.....Clinical Assistant Professor of Public Health and Preventive Medicine
M.P.H., 1940, Johns Hopkins University

KANOFF, EVALYN ERWIN, 1944.....Associate in Nursery School
B.S., 1934, Iowa State; M.S., 1938, Tennessee

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

KAUFMAN, S. HARVARD, 1945.....Lecturer in Social Work
B.A., 1934, M.D., 1936, Wisconsin

KELLER, JEAN PAUL, 1945.....Instructor in Romanic Languages
B.A., 1933, Heidelberg, Ohio; M.A., 1940, Ohio State

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

KENNEDY, FRED WASHINGTON, 1909 (1939).....Associate Professor of Journalism

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

KERBY, CHARITY C., 1946.....Instructor in Nursing
B.A., 1934, Seattle Pacific College; R.N., 1946, Swedish Hospital

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

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

KINCAID, STERLING, 1946.....Instructor in English
B.A., 1932, M.A., 1934, Ph.D., 1939, University of Southern California

KINCAID, TREVOR, 1899 (1901).....Professor of Zoology
B.S., 1899, M.A., 1901, Washington; D.Sc., 1938, College of Puget Sound

KING, ARDEN ROSS, 1944 (1945).....Instructor in Anthropology
B.A., 1938, Utah

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

KINNAMAN, ESTHER HELEN, 1946.....Instructor in Nursing
B.A., 1940, Santa Barbara State College; R.N., 1944, Knapp College of Nursing

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
R.N., B.S., 1940, Washington

KIRCHNER, GEORGE, 1919 (1939).....Assistant Professor of Music
Grad., 1911, Leipzig

KIRSTEN, FREDERICK K., 1915 (1923).....Professor of Aeronautical Engineering
B.S. in E.E., 1909; E.E., 1914, Washington

KLIMA, JOAN ROBERTS, 1946.....Associate in Economics and Business
A.B., 1940, C.P.S.; M.S., 1941, New York University

KNISELEY, WADE A., 1942 (1946).....Instructor in Speech
B.A., 1936, Washington

KOCHER, PAUL, 1938 (1942).....Assistant Professor of English
B.A., 1926, Columbia; J.D., 1929, M.A., 1932, Ph.D., 1936, Stanford

KOLESAR, JOHN, S.Sgt., U.S.M.C., 1947.....Instructor in Naval Science

KORNGOLD, JANET FENIMORE, 1944.....Honorary Assistant Professor of Nursing
A.B., 1910, Earlham College; R.N., 1924, Presbyterian Hospital, Chicago;
M.A., 1929, Northwestern University

KUETHER, CARL A., 1946.....Assistant Professor of Biochemistry
A.B., 1936, Miami; M.S., 1940, Wayne; Ph.D., 1943, George Washington

KUHN, BERTHA M., 1940 (1945).....Instructor in English
B.A., 1916, M.A., 1917, North Dakota; Ph.D., 1940, Washington

KUNDE, NORMAN F., 1930 (1937).....Assistant Professor of Physical Education
B.S., 1928, M.A., 1932, Washington; D.Ed., 1946, New York University

LAMBERTY, ELIZABETH REGINA, 1941.....Instructor in Nursing
R.N., 1934, B.S., 1938, Minnesota

LANKFORD, MARGARET ALICE, 1946.....Instructor in Nursing
R.N., 1943, St. Mary's School of Nursing; B.S., 1944, College of St. Teresa

LASHER, EARL, 1946.....Clinical Associate in Anatomy in the School of Medicine
B.A., 1931, M.D., 1934, Cornell University

LAUBE, WILLIAM T., Jr., 1946.....Acting Assistant Professor of Law
B.A., 1934, Arizona; Juris Doctor, 1937, Washington

LAUER, EDWARD HENRY, 1934.....Professor of Germanic Languages and Literature;
Dean of the College of Arts and Sciences
A.B., 1906, A.M., 1909, Ph.D., 1916, Michigan

LAVASKA, ANNA, 1946.....Acting Associate in the Far Eastern Department
B.A., 1946, Washington

LAWRENCE, CHARLES WILSON, 1926 (1934).....Associate Professor of Music
B.M., 1918, Oberlin; M.A.(Music), 1930, Washington

LAWSON, JANE SORRIE, 1922 (1939).....Associate Professor of English
M.A., 1906, St. Andrews (Scotland)

LEAHY, KATHLEEN M., 1927 (1943).....Associate Professor of Nursing
R.N., 1921, Stanford; A.B., 1926, Oregon; M.S., 1932, Washington

LEE, ALBERT FRANCIS, 1943.....Lecturer in Nursing
B.S., 1935, College of Puget Sound; M.D., 1937, Duke

LEMERE, FREDERICK, 1946.....Lecturer in School of Medicine
M.A., 1930, M.D., 1932, Nebraska

LEVY, ERNST, 1937.....Professor of History, Law, and Political Science
D.J.U., 1906, Berlin

LEWIS, LAUREL J., 1946.....Assistant Professor of Electrical Engineering
A.B., 1933, E.E., 1935, Stanford

LEWIS, LEONARD, 1946.....Clinical Instructor in Oral Anatomy
B.S., 1938, Washington; D.M.D., 1943, University of Oregon College of Dentistry

LINDBLOM, ROY ERIC, 1924 (1945).....Professor of Electrical Engineering
B.S. in E.E., 1922, M.S. in E.E., 1929, Washington

LINDELL, HARRY WALTER, 1946.....Acting Associate in Mechanical Engineering
B.S. in M.E., 1944, Washington

LINDEN, EUGENE, 1947.....Instructor in Music

LINGAFELTER, EDWARD CLAY, 1939 (1945).....Assistant Professor of Physical Chemistry
B.S., 1935; Ph.D., 1939, California

LIPPINCOTT, STUART W., 1946.....Professor of Pathology;
Executive Officer of the Pathology Department
A.B., 1929, Clark University; M.D., 1934, C.M., 1935, McGill University

LISLE, RUTH, 1946.....Acting Associate in Classics
B.A., 1938, Washington

LLOYD, FLORENCE, 1944.....Instructor in Home Economics
B.S., 1932, M.S., 1934, Montana State

†LOCKLING, WILLIAM BRUCE, 1939.....Assistant Professor of Economics
B.A., 1927, U.C.L.A.; M.A., 1929, California; Ph.D., 1933, Illinois

LOEW, EDGAR ALLAN, 1909 (1923).....Professor of Electrical Engineering; Dean of the College of Engineering; Chairman of the Engineering Experiment Station
B.S.(E.E.), 1906, E.E., 1922, Wisconsin

LOOMIS, T. A., 1947.....Assistant Professor of Pharmacology
B.S., 1939, Washington; M.S., 1941, Ph.D., 1943, Buffalo; M.D., 1946, Yale

LORIG, ARTHUR N., 1934 (1941).....Associate Professor of Accounting
B.A., 1922, Wisconsin; C.P.A., 1927; M.A., 1932, Stanford; Ph.D., 1936, Chicago

LOUCKS, ROGER B., 1936 (1946).....Associate Professor of Psychology
B.S. in C.E., 1927, Ph.D., 1930, University of Minnesota

LOUGHRIDGE, DONALD H., 1931 (1942).....Professor of Physics
B.S., 1923, Ph.D., 1927, California Institute of Technology

LOWRY, STELLA MAY, 1944.....Acting Associate in Art
B.A., 1936, Washington

LUCAS, HENRY STEPHEN, 1921 (1934).....Professor of History
A.B., 1913, Olivet; A.M., 1915, Indiana; Ph.D., 1921, Michigan

LUND, PAUL K., 1947.....Clinical Assistant Professor of Pathology
B.A., 1934, Carleton College; M.D., C.M., 1940, McGill University

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

LUNDY, HOWARD W., 1946.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1932, Washington State College; 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

LYNCH, JAMES E., 1931 (1943).....Professor of Fisheries
B.A., 1917, M.A., 1921, Nebraska; Ph.D., 1929, California

McADAMS, LAURA ELIZABETH, 1941 (1945).....Assistant Professor of Home Economics
B.S., 1923, M.S., 1932, Kansas State College

McCARTHY, JOSEPH L., 1941 (1943).....Assistant Professor of Chemical Engineering
B.S. in Chem. E., 1934, Washington; M.S., 1936, Idaho; Ph.D., 1938, McGill

McCONAHEY, JAMES M., 1921 (1945).....Professor of Accounting
B.S., 1896, M.S., 1899, Washington and Jefferson; LL.B., 1899, Northwestern; C.P.A., 1914

McCRERY, LESTER LYLE, 1943.....Instructor in Speech
B.A., 1933, M.A., 1940, Washington

McCULLOUGH, WILLIAM H., 1943.....Assistant Professor of Social Work
A.B., 1932, DePauw University; A.M., 1940, University of Chicago

McDONALD, MARGARET S., 1946.....Instructor in Nursing
R.N., B.S., 1944, Washington

McFARLAN, LEE HORACE, 1927 (1946).....Professor of Mathematics
B.S., 1917, Kansas State Teachers' College; A.M., 1921, Ph.D., 1924, Missouri

McGOWND, JANE, 1924 (1928).....Assistant Professor of Physical Education
B.S., 1917, M.A., 1923, Columbia

McINTOSH, Captain HOWARD D., U.S.N., 1945 (1946).....Professor of Naval Science; Executive Officer of the Department of Naval Science
B.S., 1922, U.S. Naval Academy

McINTYRE, DONALD M., 1946.....Clinical Assistant in Anatomy
B.S., 1939, Washington; M.D., 1943, University of Chicago

McINTYRE, HARRY JOHN, 1919 (1943).....Professor of Mechanical Engineering
B.S. in M.E., 1915, M.B.A., 1923, Washington

McINTYRE, MICHAEL, 1946.....Associate in Geography

McKAY, GEORGE F., 1927 (1943).....Professor of Music
B.Mus., 1923, Rochester

McKENZIE, VERNON, 1928 (1946).....Professor of Public Relations
B.A., 1909, Toronto; M.A., 1914, Harvard

†McKINLAY, FLORENCE, 1937 (1945).....Instructor in English
B.A., 1908, Lombard; M.A., 1931, Washington

McLARNEY, ARTHUR, 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

† On leave

McMAHON, EDWARD, 1908 (1927).....Professor Emeritus of American History
Ph.B., 1898, Washington; M.A., 1907, Wisconsin

McMAHON, THERESA SCHMID, 1901 (1929)....Professor Emeritus of Economics and Labor
B.A., 1899, M.A., 1901, Washington; Ph.D., 1909, Wisconsin

McMINN, BRYAN TOWNE, 1920 (1946).....Professor of Mechanical Engineering;
Executive Officer of Mechanical Engineering Department
B.S. in M.E., 1918, Oregon State; M.S. in M.E., 1926, M.E., 1931, Washington

McNEESE, DONALD C., 1946.....Instructor in General Engineering
B.S. in C.E., 1940, Wyoming

McNEILL, Lieut. Comdr. DAN C., (SC) U.S.N., 1946.....Assistant Professor of Naval Science
A.B., 1940, DePauw University

MACARTNEY, THOMAS H., 1946.....Acting Instructor in General Engineering
B.S. in C.E., 1939, Washington

MACDONALD, CATHERINE JOAN, 1945.....
Supervisor of Field Work, Graduate School of Social Work
B.A., 1936, Washington

MacIVOR, VIRGINIA, 1945.....Instructor in Nursing
R.N., 1933, Montana Deaconess; B.S.N., 1945, Washington

MacKAY, WARDELL, 1946.....Associate in English
B.A., 1938, Washington

MACKENZIE, DONALD H., 1929 (1944).....Professor of Management and Accounting
B.B.A., M.B.A., 1925, Washington; C.P.A.

MACKIN, J. HOOVER, 1934 (1940).....Associate Professor of Geology
B.S., 1930, New York University; M.A., 1932, Columbia

MacLAURIN, WILLIAM A., 1946.....Acting Instructor in Architecture
B.A., 1925, Washington

MacLEAN, DOROTHY, 1936 (1943).....Assistant Professor of Physical Education
B.S., 1933, Oregon; M.S., 1938, Washington

†MAKI, JOHN McGILVREY, 1939.....Associate in the Far Eastern Department
B.A., 1932, M.A., 1936, Washington

MANDER, LINDEN A., 1928 (1937).....Professor of Political Science
M.A., 1921, Adelaide (Australia)

MANGOLD, HENRY R., 1947.....Acting Associate in Mechanical Engineering

MANSFIELD, ROBERT S., 1932 (1937).....Assistant 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; M.F., 1917, Yale

MARK, SARA N., 1937 (1947).....Instructor in English
B.A., B.S., 1911, M.A., 1929, Washington

MARKHAM, MARGARET OGDEN, 1946.....Instructor in Nursing
B.A., 1943, Wellesley; R.N., M.N., 1946, Yale

MARSH, HAROLD, Jr., 1947.....Assistant Professor of Law
B.A., 1939, Rice Institute; B.L., 1942, University of Texas

MARTIN, ARTHUR W., 1937 (1943).....Associate Professor of Physiology
B.S., 1931, College of Puget Sound; Ph.D., 1936, Stanford

MARTIN, CHARLES EMANUEL, 1924.....Professor of Political Science;
Executive Officer of the Department of Political Science
B.L., 1914, A.M., 1915, California; Ph.D., 1917, Columbia; LL.D., 1942, Southern California

MARTIN, CHARLOTTE HELEN, 1947.....Instructor in Nursing
B.S., 1945, Seattle College

MARTIN, Chief Yeoman H. F., U.S.N., 1947.....Instructor in Naval Science

MARTIN, HOWARD HANNA, 1930 (1940).....Professor of Geography;
Executive Officer of the Department of Geography
B.S., 1922, Pennsylvania; M.A., 1923, Ph.D., 1929, George Washington;
Sc.D., 1937, Monmouth

MARTIN, JOHN PIERRE, 1947.....Acting Instructor in Civil Engineering
B.S., 1941, I.I.T., Armour College of Engineering

MARTIN, VICTOR J., 1937 (1942).....Associate Professor of Aeronautical Engineering
B.S., 1934, California; M.S. in M.E., 1935, M.S. in A.E., 1936,
California Institute of Technology

MARTIN, WALTER T., 1946.....Acting Associate in Sociology
B.A., 1943, Washington

MASON, ALDEN, 1946.....Acting Associate in Art
B.A., 1942, Washington

† On leave.

MASON, DAVID G., 1947.....Clinical Instructor in Pathology
B.A., 1930, Oregon; M.D., 1935, University of Oregon Medical School

MASON, MARY L., 1943.....Acting Associate in English
B.A., 1923, Grinnell

MASON, WILLIAM R., 1946.....Acting Instructor in Civil Engineering
B.S., 1940, Washington; M.S., 1941, Massachusetts Institute of Technology

MATHIES, JAMES, 1946.....Associate in Biochemistry
B.S., 1942, Washington; M.S., 1946, Wayne

MATHY, LEONARD G., 1946.....Assistant Professor of Economics and Business
A.B., 1941, M.A., 1943, Illinois

MATSUSHITA, IWAO, 1946.....Acting Associate in the Far Eastern Department

MATTSON, JOHN, 1946.....Acting Instructor in Architecture
B.A., 1925, Washington

MAULDIN, CHARLES W., 1947.....Acting Associate in Mechanical Engineering

MAXEY, LOUISE HENRIETTA, 1944.....Instructor in Nursing
R.N., 1930, Seattle General Hospital; B.S., 1944, Washington

MAY, CHARLES CULBERTSON, 1912 (1929)..Professor of Civil Engineering and Architecture; Superintendent of Buildings and Grounds
B.S. in C.E., 1910, Washington

MEESE, RICHARD H., 1946.....Instructor in Civil Engineering
B.S. in C.E., 1939, Washington; M.S. in C.E., 1941, Harvard

MEISNEST, FREDERICK WILLIAM, 1906.....Professor of Germanic Literature
B.S., 1893, Ph.D., 1904, Wisconsin

MELDEN, A. I., 1946.....Assistant Professor of Philosophy
A.B., 1931, U.C.L.A.; A.M., 1932, Brown; Ph.D., 1938, California

MELDER, FRANK S., 1946.....Acting Instructor in General Engineering
B.S. in M.E., 1936, Washington

MENDENHALL, AUDREY K., 1946.....Instructor in Pharmacy
B.S., 1938, Washington

MERRICK, Captain ARTHUR W., 1946.....Assistant Professor of Military Science and Tactics

MESSER, ROWLAND E., 1946.....Acting Instructor in General Engineering
B.S. in M.E., 1935, Washington

MEYER, HERMAN CARL H., 1934 (1942).....Associate Professor of Germanic Languages
B.A., 1924, Capital University (Ohio); Ph.D., 1936, Chicago

MICHAEL, FRANZ HENRY, 1942 (1943).....Associate Professor of Far Eastern History
D.J.U., 1933, Freiburg

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
B.B.A., 1922, M.B.A., 1927, Washington

MILLER, DELBERT, 1947.....Acting Associate Professor of Sociology
B.S., 1934, M.A., 1937, Miami; Ph.D., 1940, Minnesota

MILLER, M. MERCEDES, 1946.....Acting Associate in English
B.A., 1934, M.A., 1939, Washington

MILLS, BLAKE D., 1946.....Associate Professor of Mechanical Engineering
B.S. in M.E., B.S. in E.E., 1934, Washington; M.S. in M.E., 1935, Massachusetts Institute of Technology

MILLS, CASWELL ALBERT, 1942 (1943).....Instructor in Physical Education
B.A., 1935, Minot Teachers College; M.A., 1943, Washington

MILNE, Maj. HARRY T., 1946.....Assistant Professor of Naval Science
B.A., 1940, University of Oregon

MILROY, LYLA PECK, 1947.....Instructor in Nursing
R.N., B.S., 1944, Washington

MITTET, HOLGER, 1946.....Instructor in Civil Engineering
B.S. in C.E., 1937, Washington; M.S. in C.E., 1938, Massachusetts Institute of Technology

MIX, Maj. STANLEY M., 1946.....Assistant Professor of Military Science and Tactics
B.S., 1940, South Dakota State College

MIYAMOTO, SHOTARO FRANK, 1941 (1945).....Assistant Professor of Sociology
B.A., 1936, M.A., 1938, Washington

MOORE, VANCE, 1946.....Associate in Economics and Business
B.A., 1944, Westminster College

MORE, CHARLES CHURCH, 1900 (1912).....Professor of Structural Engineering
C.E., 1898, Lafayette; M.C.E., 1899, Cornell; M.S., 1901, Lafayette

MORITZ, HAROLD KENNEDY, 1928 (1939).....Associate Professor of Civil Engineering
B.S.(M.E.), 1921, Massachusetts Institute of Technology

MORRISON, JAMES B., 1946.....Acting Associate in General Engineering
B.S. in M.E., 1943, Virginia Polytechnic Institute

MORRISON, JOHN, 1946 (1947).....Associate in English
B.A., 1937, Washington

MORSE, JOHN M., 1946.....Acting Instructor in Architecture
A.B., 1934, Harvard College; B.Arch., 1940, Harvard Architectural School

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

MULLEMEISTER, HERMANCE, 1918 (1945).....Associate Professor of Mathematics
Ph.D., 1913, Royal University of Utrecht (Holland)

MUND, VERNON A., 1932 (1937).....Professor of Economics
B.B.A., 1928, M.B.A., 1929, Washington; Ph.D., 1932, Princeton

MUNRO, KATHLEEN, 1929 (1947)..Professor of Music; Acting Director of the School of Music
B.M., 1924, Washington; M.A., 1929, Columbia; Ph.D., 1937, Washington

MURPHY, CAMPBELL GARRETT, 1945.....Lecturer in Social Work
B.A., 1936, Swarthmore; M.A., 1943, Washington

MURPHY, HERTA A., 1946.....Lecturer in Economics and Business
B.B.A., 1930, M.A., 1942, Washington

MURPHY, RALPH M., 1946.....Acting Instructor in Speech
B.A., 1924, Franklin College; M.A., 1929, Wisconsin University

MURTON, CLARENCE CHARLES, 1943.....Associate in Journalism
B.A., 1924, Washington

NAYLOR, AUBREY WILLARD, 1946.....Assistant Professor of Botany
B.S., 1937, M.S., 1938, Ph.D., 1940, Chicago

NEDDERMEYER, S. H., 1946.....Associate Professor of Physics
A.B., 1929, Stanford; Ph.D., 1935, California Institute of Technology

NEFF, ELIZABETH, 1945.....Acting Associate in English
B.A., 1934, M.A., 1941, Oklahoma

NELSEN, ROBERT J., 1947.....Assistant Professor of Dental Materials
D.D.S., 1940, Minnesota

NELSON, EVERETT J., 1930 (1941).....Professor of Philosophy
B.A., 1923, M.A., 1925, Washington; M.A., 1928, Ph.D., 1929, Harvard

NELSON, OLIVER, 1945.....Instructor in Speech
B.A., 1933, M.A., 1939, Washington

NERO, WILLIAM E., 1947.....Acting Associate in Mechanical Engineering

NESLIN, MILAN A., 1947.....Acting Associate in Mechanical Engineering

NEWKIRK, PAUL RICHARD, 1944.....Lecturer in Nursing
M.D., 1909, Heidelberg

NILSEN, TOM, 1946.....Acting Associate in Speech
B.A., 1940, Washington

NIX, MARTHA J., 1928 (1947).....Assistant Professor of English
B.A., 1922, M.A., 1925, Washington

NOREEN, Captain EUGENE L., 1946.....Assistant Professor of Military Science and Tactics
B.A., 1939, University of Montana

NORGORE, MARTIN, 1946.....Clinical Associate in Anatomy
B.S., 1921, Washington; M.D., 1926, University of Oregon

NORMANN, THEODORE F., 1940.....Associate Professor of Music
B.A., 1925, Macalaster College; M.A., 1928, Columbia

NORRIS, ANNA CHURCH, 1938.....Research Associate in Oceanography
B.S., 1924, M.S., 1927, Ph.D., 1931, Washington

NORRIS, EARL R., 1927 (1940).....Professor of Chemistry;
Acting Executive Officer of Department of Biochemistry
B.A., 1919, Montana State; Ph.D., 1924, Columbia

NORTHROP, CEDRIC, 1947.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1930, Oregon; M.D., 1936, Oregon Medical School

NORTHROP, MARY, 1931.....Instructor in Nursing
A.B., 1920, Vassar; M.S., 1923, Columbia

NORTON, RODERICK ARTHUR, 1946.....Lecturer in Nursing
A.B., 1934, M.D., 1937, Michigan

†NOSTRAND, HOWARD L., 1939.....Professor of Romanic Languages; Executive Officer of the Department of Romanic Languages
B.A., 1932, Amherst; M.A., 1933, Harvard; Dr. of University of Paris, 1934

NOTTELMANN, RUDOLPH H., 1927.....Professor of Law
A.B., 1912, Monmouth; M.A., 1913, Illinois; LL.B., 1922, Yale

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 (1927).....Professor of Law
B.A., Jesuit College (Denver); LL.D., 1928, Regis College

OBST, FRANCES, 1944.....Assistant Professor of Home Economics
B.S., 1934, M.A., 1938, Minnesota

OLCOTT, VIRGINIA, 1931 (1945).....Associate Professor of Nursing
R.N., 1926, Peter Bent Brigham Hospital; B.S., 1927, M.S., 1931, Washington

OLSEN, BJARNE C., 1946.....Acting Instructor in Architecture
B.A., 1938, Washington

ORDAL, ERLING J., 1937 (1943).....Associate Professor of Microbiology
A.B., 1927, Luther; Ph.D., 1936, Minnesota

ORR, FREDERICK WESLEY, 1925 (1928).....Professor of Speech; Executive Officer of the Department of Speech
B.L., 1901, Drury; G.C.D., 1905, Boston School of Expression; M.A., 1925, Lawrence College

OSBURN, WORTH J., 1936.....Professor of Remedial and Experimental Education
A.B., 1903, Central College; A.M., 1904, Vanderbilt; B.S.(Educ.), 1908, Missouri; Ph.D., 1921, Columbia

OTTMAN, ELEANOR MAY, 1943.....Associate in Journalism
B.A., 1934, Whitman

OWEN, DONALD B., 1946.....Acting Associate in Mathematics
B.S., 1945, M.S., 1946, Washington

OWLEY, ARTHUR N., 1946.....Acting Instructor in General Engineering
B.S. in C.E., 1935, Washington

PACQUER, ROBERT E., 1946.....Acting Associate in Mechanical Engineering

PAGET, FRANCIS KING, 1946.....Acting Associate in Mechanical Engineering
B.S. in M.E., 1930, Lehigh University

PAHN, V., 1946.....Acting Instructor in the Far Eastern Department
B.A., 1935, B.F.A., 1938, British Columbia

PALMER, LESTER J., 1947.....Clinical Professor of Medicine
M.D., 1914, Northwestern

PALMER, VINSON LE ROY, 1943 (1947).....Instructor in Electrical Engineering
B.S. in E.E., 1940, Washington

PALMQUIST, EMIL EUGENE, 1944 (1946).....Clinical Assistant Professor of Public Health and Preventive Medicine
B.A., 1930, Gustavus Adolphus College; M.D., 1937, Northwestern; M.P.H., 1942, Michigan

PARKS, DORIS H., 1947.....Instructor in Home Economics
B.S., 1940, University of Illinois

PARKS, FRANK L., 1946.....Acting Instructor in Sociology
B.A., 1929, B.E., 1929, M.A., 1931, Colorado University

PATTERSON, AMBROSE, 1919 (1939).....Professor of Painting
Melbourne National Gallery, Victoria, Australia; Julien, Colorossi and Delocluse Academies, Europe

PATTERSON, LILLIAN, 1944.....Assistant Professor of Nursing
R.N., 1923, Presbyterian College, Chicago; B.A., 1941, M.A., 1942, Washington

PATTERSON, MARVIN R., 1946.....Acting Instructor in Architecture

PAYNE, BLANCHE, 1927 (1942).....Professor of Home Economics
B.S., 1916, Kansas State Teachers College; M.A., 1924, Columbia

PEACOCK, ALEXANDER H., 1935.....Lecturer in Nursing
M.D., 1903, Pennsylvania

PEARCE, JOHN KENNETH, 1921 (1943).....Professor of Forestry
B.S.F., 1921, Washington

PEEK, CLIFFORD, 1938.....Assistant Professor of Physical Education
B.S., 1929, Washington; M.A., 1931, Columbia

PELLEGRINI, ANGELO M., 1930 (1945).....Assistant Professor of Speech
B.A., 1927, Ph.D., 1942, Washington

† On leave

PENCE, ORVILLE, 1941 (1946).....Assistant Professor of Speech
B.A., 1935, M.A., 1939, Washington

PENDLETON, JAMES LAKE, 1946.....Acting Instructor in Civil Engineering
B.S., 1938, B.S., 1940, Carnegie Institute of Technology

PENINGTON, RUTH, 1928 (1943).....Associate Professor of Design
B.F.A., 1927, M.F.A., 1929, Washington

PENNELL, DOROTHY, 1946.....Acting Associate in Mathematics
A.B., 1923, M.A., 1939, Washington

PENZIEN, JOSEPH, 1946.....Acting Associate in General Engineering
B.S. in C.E., 1945, Washington

PERKS, LILIAN CHARLOTTE, 1942.....Associate in Mathematics
B.S., M.A., 1906, St. Andrews, Scotland

PERROTT, MURIEL, 1945.....Acting Associate in Art
B.A., 1935, Washington

PERSON, HENRY, 1937 (1947).....Assistant Professor of English
B.A., 1927, Ph.D., 1942, Washington

PETERSON, CLAIRE G., 1944.....Associate in Music

PETERSON, EINAR M., 1946.....Acting Instructor in General Engineering
B.S. in C.E., 1939, Washington State

PETTIBONE, MARIAN, 1945.....Acting Associate in Zoology
B.S., 1931, Linfield; M.A., 1932, Oregon

PHILLIPS, HERBERT JOSEPH, 1920 (1934).....Assistant Professor of Philosophy
B.A., 1920, Ph.D., 1933, Washington

PHILLIPS, RONALD, 1935.....Associate in Music

PIFER, DRURY AUGUSTUS, 1945.....Acting Associate in Mines
B.S. in Mining Engineering, 1930, M.S. in Mining Engineering, 1931, Washington

PITT, CARL A., 1946.....Associate in Speech
B.A., 1933, Intermountain Union College; M.A., 1946, W.S.C.

PITTENGER, MABEL W., 1947.....Associate in English
B.A., 1932, M.A., 1934, Western Reserve University

PLATT, VIRGINIA, 1945.....Acting Instructor in Physics
B.S. in M.E., 1945, Washington

PLEIN, ELMER M., 1938 (1945).....Associate Professor of Pharmacy
Ph.C., B.S., 1929, M.S., 1931, Ph.D., 1936, Colorado

POSELL, EDWARD A., 1938.....Lecturer in Nursing
B.S., 1923, City of New York; M.D., 1927, Boston

POWELL, SARGENT, 1919 (1943).....Professor of Chemistry
B.S., 1913, M.S., 1916, Washington; Ph.D., 1919, Illinois

POWERS, FRANCIS FOUNTAIN, 1928 (1939).....Professor of Educational Psychology; Dean of the College of Education
B.A., 1924, Washington; M.A., 1927, Oregon; Ph.D., 1928, Washington

POWERS, LELAND E., 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, 1938, Michigan

PRATT, FRANK, 1946.....Associate Professor of Oral Anatomy; Executive Officer of Oral Anatomy Department
D.M.D., 1916, University of Oregon College of Dentistry

PRESTON, HOWARD HALL, 1920 (1922).....Professor of Money and Banking; Dean of the College of Economics and Business
B.S., 1911, Coe College (Iowa); M.A., 1914, Ph.D., 1920, Iowa; LL.D., 1938, Coe College

PRIES, LIONEL HENRY, 1928 (1938).....Associate Professor of Architecture
A.B., 1920, California; M.Arch., 1921, Pennsylvania

PULLEN, ROSCOE L., 1947....Associate Professor of Medicine; Director of Hospital Planning
B.A., 1935, Knox College; B.M., 1939, M.D., 1940, Northwestern

PURDUE, ROBERT A., 1946.....Lecturer in Economics and Business
B.A., 1939, LL.B., 1942, Washington

QUAINTON, C. EDEN, 1924 (1936).....Associate Professor of History
A.B., 1918, Univ. of Manitoba; B.A., 1924, Cambridge

RADER, MELVIN MILLER, 1930 (1944).....Associate Professor of Philosophy
B.A., 1925, M.A., 1927, Ph.D., 1929, Washington

RAHSKOPF, HORACE G., 1928 (1944).....Professor of Speech
B.A., 1920, Willamette; M.A., 1927, Ph.D., 1935, Iowa

RANKIN, ESTELLE, 1946.....Acting Instructor in Geography
B.S., 1932, Washington; M.A., 1935, Columbia

RASANEN, PAUL R., 1947 ..... Instructor in Pharmacy
B.S., 1940, Washington State; M.S., 1942, Nebraska

RAY, DIXIE LEE, 1945 ..... Instructor in Zoology
B.A., 1937, M.A., 1938, Mills College; Ph.D., 1945, Stanford

RAY, VERNE F., 1933 (1945) ..... Associate Professor of Anthropology
B.A., 1931, M.A., 1933, Washington; Ph.D., 1937, Yale

READ, WILLIAM MERRITT, 1927 (1945) .. Professor of Classical Languages; University Editor
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, 1945 ..... Assistant Professor of English
B.S., 1937, Utah State College; M.A., 1940, Iowa

REED, CARROLL E., 1946 ..... Instructor in German
B.A., 1936, M.A., 1937, Washington; Ph.D., 1941, Brown University

REEVES, GEORGE SPENCER, 1935 (1939) ..... Assistant Professor of Physical Education
B.S., 1933, Oregon State College; M.S., 1938, Oregon

REICHART, NATALIE, 1945 ..... Acting Instructor in Physical Education
B.S., 1924, Columbia; M.A., 1928, New York

REISS, GRACE DEWEY, 1945 ..... Field Work Supervisor in Graduate School of Social Work
B.A., 1932, Iowa; M.A., 1940, Minnesota

RHINES, RUTH, 1947 ..... Visiting Assistant Professor of Anatomy
B.P.E., B.S., M.S., 1940, Ph.D., 1942, Northwestern

RHODES, FRED H., Jr., 1927 (1943) ..... Associate Professor of Civil Engineering
B.S. (C.E. and M.E.), 1926, C.E., 1935, Washington

RICHARDS, JOHN W., 1931 (1937) ..... Professor of Law
B.A., 1933, Wisconsin; LL.B., 1926; LL.M., 1930, S.J.D., 1931, Harvard

RICHINS, WILLIAM DWAINE 1946 ..... Associate in Economics and Business
B.A., Brigham Young University; M.A., Louisiana State University

RICKER, WALTER A., 1946 ..... Assistant Professor of Pathology
M.D., 1938, Marquette

RIGG, GEORGE BURTON, 1909 (1928) ..... Professor of Botany
B.S., 1896, Iowa; A.M., 1909, Washington; Ph.D., 1914, Chicago

RILEY, WALTER L., 1946 ..... Acting Assistant Professor of Political Science
B.A., 1933, Adams State Teachers College, Colorado; M.A., 1935, Stanford

RINGLE, ARTHUR L., 1946 ..... Clinical Associate Professor of Public Health and Preventive Medicine
M.D., 1935, Colorado

RINGLEE, ROBERT J., 1947 ..... Acting Associate in Electrical Engineering
B.S., 1946, Washington

RISEGARI, EILEEN, 1945 ..... Instructor in Music
B.A., 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., Ph.D., 1929, Washington

RIVENBURGH, VIOLA K., 1944 ..... Acting Associate in English
A.B., 1919, Nebraska; M.A., 1925, Hawaii

ROBBINS, FLOYD DAVID, 1946 ..... Acting Instructor in Electrical Engineering
B.S. in E.E., 1925, Washington

ROBERTS, J. RUSSELL, 1946 ..... Assistant Professor of English
B.A., 1930, Washington State; Ph.D., 1940, Washington

ROBERTS, MILNOR, 1901 .. Professor of Mining and Metallurgy; Dean of the College of Mines
B.A., 1899, Stanford

ROBERTSON, J. C. H., 1945 ..... Associate Professor of Forest Management
B.S.F., 1927, Washington; M.S.F., 1933, California

ROBINSON, BRUCE A., 1946 ..... Acting Associate in Mathematics
B.S., 1937, Seattle Pacific College; M.S., 1940, Washington

ROBINSON, FRANK J., 1946 ..... Assistant Professor of Industrial Management
B.S., 1937, U.C.L.A.; M.B.A., 1940, Harvard Graduate School of B.A.

ROBINSON, REX J., 1929 (1945) ..... Professor of Chemistry
B.A., 1925, DePauw; M.A., 1927, Ph.D., 1929, Wisconsin

ROGERS, WALTER E., 1946 (1947) ..... Instructor in General Engineering
B.S. in E.E., 1944, California

ROJAS, CARLOS A., 1946 ..... Associate in Romanic Languages
A.B., 1924, M.A., 1925, Pomona College

ROLLER, JULIUS A., 1945 ..... Assistant Professor of Accounting
B.B.A., 1934, Washington

ROMAN, HERSCHEL, 1942 (1944).....Assistant Professor of Botany
A.B., 1936, Ph.D., 1942, Missouri

ROSE, THELMA, 1946.....Acting Instructor in Home Economics
B.S., 1940, Washington

ROSEN, MORITZ, 1909 (1928).....Professor of Music
Graduate, Warsaw Conservatory, Russia

ROSSMAN, EDWARD A., 1946.....Associate in Aeronautical Engineering
B.S. in A.E., 1938, Washington

ROWLANDS, THOMAS McKIE, 1928 (1943).....Associate Professor of General Engineering
B.S. (Nav. Arch. and Marine Engr.), 1926, Massachusetts Institute of Technology

ROWNTREE, JENNIE IRENE, 1925 (1932).....Professor of Home Economics; Director of the School of Home Economics
B.S., 1918, Wisconsin; M.S., 1924, Chicago; Ph.D., 1929, Iowa

RUCH, THEODORE C., 1946.....Professor of Physiology; Executive Officer of the Department of Physiology
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., 1935, Washington

RUPP, NATALIE, 1947.....Acting Associate in English
B.A., 1946, U.C.L.A.

RUST, PAUL, 1947.....Acting Associate in English
B.A., 1935, M.A., 1937, Idaho

RUTHERFORD, FREDERICK WARNER, 1942.....Lecturer in Nursing
A.B., 1930, Illinois; M.D., 1935, Harvard

RUTHERFORD, ROBERT N., 1946.....Lecturer in Nursing
A.B., 1932, Illinois; M.D., 1936, Harvard

RUTLEDGE, IVAN C., 1947.....Assistant Professor of Law
B.A., 1934, Carson-Newman College; M.A., 1940, LL.B., 1946, Duke

RYAN, MILO, 1946.....Acting Assistant Professor of Journalism
B.A., 1928, Michigan; M.A., 1934, Minnesota

RYKKEN, ESTHER, 1946.....Instructor in Nursing
B.S., 1944, R.N., 1944, Minnesota

SAIBEL, LAURA F., 1946.....Field Work Supervisor in Graduate School of Social Work
B.A., 1939, M.A., 1941, Minnesota

ST. CLAIR, LAURA P., 1937.....Associate in English
A.B., 1915, West Lafayette; M.A., 1917, Adrian College, Michigan

SANDERMAN, LLEWELLYN ARTHUR, 1928 (1944).....Assistant Professor of Physics
B.S., 1923, Linfield; M.S., 1931, Ph.D., 1943, Washington

SANDERS, JENNINGS B., 1947.....Acting Professor of History
A.B., 1923, Franklin College; M.A., 1925, Ph.D., 1928, University of Chicago

SANDIN, WANDA N., 1947.....Acting Instructor in Home Economics
B.S., 1930, Iowa State College

SAVAGE, GEORGE MILTON, Jr., 1935 (1945).....Associate Professor of English
B.A., 1928, M.A., 1928, Ph.D., 1935, Washington

SAVELLE, MAX, 1947.....Professor of History
A.B., 1924, M.A., 1926, Ph.D., 1932, Columbia

SCHAEFFER, ROBERT, 1946.....Acting Assistant Professor of Psychology
B.A., 1937, M.A., 1939, Pennsylvania

SCHALLER, GILBERT SIMON, 1922 (1937).....Professor of Mechanical Engineering
B.S., 1916, Illinois; M.B.A., 1925, Washington

SCHARDT, L. ALVIN, 1944.....Associate in Music

SCHEFFER, VICTOR B., 1938.....Lecturer in Oceanography
B.S., 1930, M.S., 1932, Ph.D., 1936, Washington

SCHERTEL, MAX, 1931 (1938).....Instructor in German
B.A., 1923, M.A., 1928, Ph.D., 1938, Washington

SCHEYER, FREDERICK L., 1946.....Lecturer in Anatomy
M.D., 1928, Temple

SCHMID, CALVIN F., 1937 (1941).....Professor of Sociology
B.A., 1925, Washington; Ph.D., 1930, Pittsburgh

SCHMIDT, FRED H., 1946.....Assistant Professor of Physics
B.S.E., 1937, Michigan; M.A., 1940, University of Buffalo; Ph.D., 1945, California

SCHRADER, O. H., Jr., 1936 (1945).....Associate Professor of Forestry
B.S.F., 1931, Washington; M.S., 1932, Wisconsin; Ph.D., 1942, Yale

SCHRAG, CLARENCE, 1944 (1946).....Instructor in Sociology
B.A., 1939, Washington State College

SCHRAM, LLOYD W., 1940 (1945).....Instructor in Political Science; Director, Division of Adult Education and Extension Services
B.A., 1934, LL.B., 1937, Washington; LL.M., 1938, Harvard

SCHULTHEIS, FREDERIC D., 1938 (1947).....Associate Professor in the Far Eastern Department; Assistant Director of Far Eastern Institute
B.A., 1929, Washington; M.A., 1931, Columbia

SCHULTZ, ARTHUR G., 1946.....Associate Clinical Professor of Prosthetics
D.M.D., 1924, University of Oregon College of Dentistry

SCOTT, DAVID B., 1943.....Acting Instructor in Physics
B.S., 1938, Seattle Pacific; B.S., 1940, Washington

SERGEV, SERGIUS I., 1923 (1946).....Professor of Civil Engineering
B.S. in M.E., 1923, M.E., 1931, Washington

SETZER, GENE W., 1946.....Associate in Political Science
B.A., 1941, Wichita

SETZER, KATHLEEN, 1946.....Acting Associate in English
B.A., 1942, University of Wichita

SHANNON, LYLE, 1946.....Acting Associate in Sociology
B.A., 1942, Cornell College

†SHATTUCK, WARREN L., 1935 (1941).....Professor of Law
B.A., LL.B., 1934, Washington; J.S.D., 1936, Yale

SHERMAN, JOHN CLINTON, 1942 (1943).....Instructor in Geography
A.B., 1937, Michigan; M.A., 1942, Clark

SHEFELMAN, S. HAROLD, 1930.....Lecturer in Law
Ph.B., 1920, Brown; LL.B., 1925, Yale

SHELDON, CHARLES S., II, 1940 (1946).....Assistant Professor of Transportation
B.A., 1936, M.A., 1938, Washington; A.M., 1939, Harvard

SHERWOOD, D. W., 1945.....Instructor in Chemistry
B.S., 1939, Purdue; Ph.D., 1942, California

SHIH, EDNA, 1946.....Acting Associate in the Far Eastern Department
B.A., 1932, Yenching University

SHIH, YU-CHUNG (VINCENT), 1945.....
Assistant Professor of Chinese Language, Literature and Philosophy
B.A., 1925, Fukien Christian University, Foochow; M.A., 1930, Yenching University, Peking; Ph.D., 1939, University of Southern California

SHIPMAN, GEORGE A., 1946.....Professor of Political Science; Acting Director of the Bureau of Public Administration
B.A., 1925, M.A., 1926, Wesleyan; Ph.D., 1931, Cornell

SHOLLEY, JOHN BURRILL, 1932 (1939).....Professor of Law
LL.B., 1932, Washington; J.S.D., 1937, Chicago

SHUCK, GORDON RUSSELL, 1918 (1937).....Professor of Electrical Engineering
E.E., 1906, Minnesota

SIDEY, THOMAS KAY, 1903 (1927).....Professor Emeritus of Latin and Greek
A.B., 1891, Toronto; Ph.D., 1900, Chicago

SIEG, LEE PAUL, 1934.....President Emeritus of the University
B.S., 1900, M.S., 1901, Ph.D., 1910, Iowa; LL.D., 1934, Pittsburgh, 1941, Iowa

SIMPSON, FLOYD ROBERT, 1943 (1946).....Associate Professor of Economics and Business
B.A., 1933, M.A., 1938, Ph.D., 1943, Minnesota

SIMPSON, LURLINE VIOLET, 1924 (1944).....Associate Professor of French
B.A., 1920, M.A., 1923, Ph.D., 1928, Washington

SIVERTZ, VICTORIAN, 1926 (1936).....Assistant Professor of Chemistry
B.S., 1922, Washington; M.S., 1924, West Virginia; Ph.D., 1926, McGill

SKAHEN, JULIA GOODSELL, 1928 (1945)..Acting Assistant Professor of Physical Education
B.S., 1926, M.S., 1928, Ph.D., 1937, Washington

SKEELS, DELL ROY, 1946.....Acting Associate in English
A.B., 1941, M.A., 1942, University of Idaho

SKINNER, MACY MILLMORE, 1916 (1928).....Professor of Foreign Trade
A.B., 1894, A.M., 1895, Ph.D., 1897, Harvard

SKOKAN, OLGA E., 1945 (1946).....Associate in Romanic Languages
B.S., 1942, Tampa

SLAUGHTER, LOIS ELIZABETH, 1945.....Associate in Physical Education
B.A., 1943, University of Texas; M.S., 1945, Wellesley College

SMITH, BRUCE B., 1946.....Clinical Instructor in Operative Dentistry and Crown and Bridge
D.M.D., B.Sc., 1942, University of Oregon College of Dentistry

SMITH, CHARLES WESLEY, 1905 (1926).....Librarian; Professor of Librarianship
B.A., 1903, B.L.S., 1905, Illinois

† On leave

SMITH, FREDERICK CHARNLEY, 1926 (1941).....Associate Professor of Civil Engineering
B.S. in C.E., 1926, C.E., 1929, Washington

SMITH, GEORGE SHERMAN, 1921 (1941).....Professor of Electrical Engineering
B.S. in E.E., 1916, E.E., 1924, Washington

SMITH, HARRY EDWIN, 1914 (1929).....Professor of Insurance;
Director of Correspondence and Extension Classes
A.B., 1906, DePauw; Ph.D.. 1912, Cornell

SMITH, HAZEL MARTHA, 1944.....Acting Instructor in Home Economics
B.S., 1927, Oregon

SMITH, JANE K., 1943.....Instructor in Nursing
R.N., 1932, Multnomah Hospital; B.S., 1943, Washington

SMITH, JOHN H., 1947.....Associate in Music

SMITH, STEVENSON, 1911 (1916).....Professor of Psychology;
Executive Officer, Department of Psychology; Director of the Gatzert Foundation
A.B., 1904, Ph.D., 1909, Pennsylvania

SMULLYAN, ARTHUR FRANCIS, 1946.....Assistant Professor of Philosophy
A.B., 1935, College of the City of New York; A.M., 1940, Ph.D., 1941, Harvard

SMYTH, THOMAS C., 1947.....Acting Associate in Mechanical Engineering

SNADER, ELIZABETH, 1945.....Instructor in Music
B.A., 1935, New England Conservatory of Music; M.A., 1938, Michigan

SNYDER, WILLIAM ARTHUR, 1940 (1943).....Instructor in Mechanical Engineering
B.S. in M.E., 1939, Minnesota

SOMERS, RAYMOND H., 1935.....Lecturer in Nursing
B.S., 1921, M.D., 1921, Northwestern

SOMMERFELD, FRANZ RENE.....Acting Instructor in Germanics
B.A., 1944, California; M.A., 1946, Columbia

SOULE, ELIZABETH STERLING, 1920 (1934).....Professor of Nursing;
Dean of the School of Nursing
R.N., 1907, Malden Hospital, Massachusetts; B.A., 1926, M.A., 1930, Washington;
D.Sc., Montana State College, 1944

SPECTOR, IVAR, 1931 (1942).....Associate Professor of Russian Language and Literature
B.A., 1915, Yekaterinoslav (Russia); M.A., 1919, Teachers Seminar (Russia);
M.A., 1926, Northwestern; Ph.D., 1928, Chicago

SPECTOR, MARGARET MARION, 1947.....Lecturer in History
B.A., 1926, British Columbia; M.A., 1927, Clark; Ph.D., 1940, Columbia

SPEIR, EDWARD B., 1946.....Lecturer in Nursing
B.A., 1929, M.D., 1933, Kansas

SPERLIN, OTIS BEDNEY, 1921 (1923).....Lecturer in English
A.B., 1903, Indiana; Ph.M., 1908, Chicago

SPRAGG, ARMOREL M., 1944.....Acting Associate in Art
B.A., 1934, Washington

STANISLAWSKI, DAN, 1945.....Assistant Professor of Geography
B.A., 1937, Ph.D., 1943, California

STANSBERY, C. J., 1946.....Clinical Professor of Prosthetics;
Executive Officer of Prosthetics Department
D.D.S., 1905, University of California College of Dentistry; F.I.C.D. Honorary

STANSBY, MAURICE E., 1938.....Lecturer in Fisheries
B.S., 1930, M.S., 1933, Minnesota

STARR, JAMES, 1946.....Acting Associate in Speech
B.A., 1937, M.A., 1943, Washington

STEELE, CORALEE I., 1946.....Instructor in Nursing
R.N., 1929, Multnomah Hospital; B.S. in Nursing, 1933, Washington

STEINBRUECK, VICTOR, 1946.....Acting Instructor in Architecture
B.Arch., 1935, Washington

†STEINER, JESSE FREDERICK, 1931.....Professor of Sociology and Social Work
B.A., 1901, Heidelberg College; M.A., 1913, Harvard; Ph.D., 1915, Chicago

STEVENS, BELLE, 1932.....Research Associate in Oceanography and Zoology
Ph.D., 1931, Washington

STEVENS, EDWIN B., 1910 (1936).....Professor of Higher Education and Guidance
A.B., 1896, Tufts College; A.M. (Educ.), 1899, Harvard

STEVENS, ENID MILLER, 1946.....Instructor in Geography
A.B., 1935, M.A., 1943, Washington

STEVENS, LEONARD W., 1937 (1946).....Instructor in Physical Education
B.S. in P.E., 1933, M.S. in P.E., 1941, Washington

STIPPES, M. C., 1946.....Acting Associate in Mathematics
B.S., 1943, University of Illinois

† On leave

STIRLING, BRENTS, 1932 (1943).....Associate Professor of English
LL.B., 1926, Ph.D., 1934, Washington

STOLESON, HELEN, 1945.....Instructor in Nursing
R.N., 1931, Washington Boulevard Hospital; B.S., 1940, Minnesota

STONE, EDWARD NOBLE, 1910 (1940).....Professor Emeritus of Classical Languages
A.B., 1891, M.A., 1893, Olivet

STROESSLER, JOHN H., 1946.....Associate in Music
B.M., 1934, M.A., 1946, Washington

STUBBS, LUCILE, 1940.....Associate in English
B.A., 1922, Colorado

STULL, FRANKLIN G., 1946.....Lecturer in Economics and Business
B.S., Wharton School of Finance and Commerce, University of Pennsylvania

STUNTZ, DANIEL ELLIOT, 1940 (1945).....Assistant Professor of Botany
B.S., 1935, Washington; Ph.D., 1940, Yale

SULLIVAN, C. L., 1935.....Instructor in Mechanical Engineering

SUNOO, HAROLD W., 1946.....Instructor in the Far Eastern Department
B.A., 1942, Pasadena

SUTERMEISTER, ROBERT ARNOLD, 1940 (1946)....Asst. Prof. of Economics and Business
A.B., 1934, Harvard

SVELANDER, KATHERINE GUSTAFSON, 1946.....Assistant Professor of Nursing
R.N., 1927, Swedish Hospital; B.S., 1928, Washington

SVIHLA, ARTHUR, 1938 (1943).....Professor of Zoology;
Executive Officer of the Department of Zoology
A.B., 1925, Illinois; Ph.D., 1931, Michigan

SVIHLA, RUTH DOWELL, 1940.....Research Associate in Zoology and Botany
A.B., 1920, Smith; M.S., 1923, Illinois; Ph.D., 1930, Michigan

SWANSON, JOHN EDWARD, Jr., 1946.....Acting Associate in General Engineering
B.S., 1945, Washington

SWARNER, RACHEL, 1945.....Associate in Music

SYLVESTER, HOWARD, 1943.....Acting Associate in English
B.A., 1937, M.A., 1941, New Mexico

TARTAR, HERMAN VANCE, 1917 (1927).....Professor of Chemistry;
Director of Chemical Laboratories
B.S., 1902, Oregon State; Ph.D., 1920, Chicago

TATSUMI, HENRY S., 1928 (1946).....Associate Professor in the Far Eastern Department
B.A., 1933, M.A., 1935, Washington

TAUB, ABRAHAM H., 1936 (1946).....Professor of Mathematics
B.S., 1931, Chicago; Ph.D., 1935, Princeton

TAYLOR, EDWARD AYERS, 1929.....Professor of English
B.A., 1909, Denver; M.A., 1918, Ph.D., 1925, Chicago

TAYLOR, GEORGE EDWARD, 1939 (1946).....Professor of Far Eastern History;
Executive Officer of Far Eastern Department; Director of the Far Eastern 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

TEEVAN, THOMAS FOSTER, 1946.....Acting Associate in English
B.A., 1936, College of Puget Sound

TENNANT, HAROLD E., 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; M.A., 1927, Chicago

TERRY, MIRIAM, 1930 (1937).....Assistant Professor of Music
B.M., 1926, Washington

THAYER, RALPH IRA, 1945.....Assistant Professor of Economics and Business;
Assistant Director of the Institute of Labor Economics
B.S., 1937, Northwestern; M.A., 1944, Washington

THIEL, SERRETA, 1945.....Instructor in Music

THOMAS, BERNERD O. A., 1946.....Associate Professor of Oral Pathology;
Acting Executive Officer of the Department of Oral Pathology
D.D.S., 1935, B.A., 1936, M.S., 1939, Minnesota; D.D.S., 1940, Ph.D., 1945, Columbia

THOMAS, DAVID P., 1947.....Acting Associate in Forestry
B.S.F., 1941, Washington

THOMAS, HARLAN, 1926.....Professor of Architecture; Director Emeritus of the School of Architecture
B.S., 1894, Colorado State College

THOMAS, SETH A., 1947.....Acting Associate in Mechanical Engineering

THOMLE, KRISTINE, 1945.....Acting Instructor in Scandinavian
B.A., 1915, M.A., 1934, Washington

THOMPSON, CARLISLE, 1946.....Associate in English
B.S., 1922, U.S. Naval Academy

THOMPSON, JOHN H., 1946.....Acting Instructor in Geography
A.B., 1941, Clark University; M.A., 1943, University of Colorado

THOMPSON, THOMAS G., 1919 (1929).....Professor of Chemistry; Director of Oceanographic Laboratories
A.B., 1914, Clark College; M.S., 1915, Ph.D., 1918, Washington

THOMPSON, WILLIAM F., 1930...Professor of Fisheries; Director of the School of Fisheries
B.A., 1911; Ph.D., 1931, Stanford

THOMSON, DAVID, 1902.....Professor of Latin; Vice-Dean of College of Arts and Sciences; Vice-President Emeritus
B.A., 1892, Toronto; LL.D., 1936, British Columbia

THORNTON, HELEN, 1947.....Research Associate in Pathology
B.S., 1937, M.S., 1939, Washington; Ph.D., 1944, Ohio State University

THORPE, BERENICE, 1946.....Associate in English
B.A., 1924, M.A., 1925, Washington

TILLOTSON, H. GENE, 1945.....Instructor in Nursing
R.N., B.S., 1941, Minnesota

TOBIN, HARRIET, 1946.....Acting Associate in English
B.A., 1932, Colorado University; M.A., 1942, Colorado Teachers College

TORNEY, JOHN A., Jr., 1930 (1937).....Assistant Professor of Physical Education
B.S., 1928, Washington; M.A., 1930, Columbia

TRUAX, ARTHUR, 1924.....Lecturer in Finance

TSCHUDIN, MARY STICKLES, 1942 (1944).....Assistant Professor of Nursing
R.N., B.S., in Nursing, 1935, M.S., 1939, Washington

TURNER, EDWARD L., 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.....Instructor in Librarianship
A.B., 1926, Oregon; B.S. in L.S., 1931, Columbia

TYLER, RICHARD G., 1929.....Professor of Sanitary Engineering
C.E., 1908, Texas; B.S. in C.E., 1910, Massachusetts Institute of Technology

TYMSTRA, SYBREN RUURD, 1929 (1945).....Professor of Mechanical Engineering
M.E., 1905, Zwickau

UEHLING, EDWIN A., 1936 (1947).....Professor of Physics
B.A., 1925, Wisconsin; M.A., 1930, Ph.D., 1932, Michigan

UHRICH, GEORGE E., 1946.....Acting Associate in Mathematics
B.S., 1939, Washington; M.S., 1940, Colorado University

ULBRICKSON, ALVIN M., 1927.....Associate in Physical Education
B.B.A., 1927, Washington

UMPHREY, GEORGE WALLACE, 1911 (1922).....Professor of Romanic Languages; Acting Executive Officer of the Department of Romanic Languages
A.B., 1899, Toronto; A.M., 1901, Ph.D., 1905, Harvard; Litt.D., 1920, San Marios (Lima)

UTTERBACK, CLINTON LOUIS, 1918 (1934).....Professor of Physics; Executive Officer of Department of Physics; Director of Physics Laboratories
B.S., 1908, Purdue; M.S., 1918, Washington; Ph.D., 1926, Wisconsin

VAIL, CURTIS C. D., 1939.....Professor of Germanic Languages and Literature; Executive Officer of the Department of Germanic Languages and Literature
A.B., 1924, Hamilton; M.A., 1929, Ph.D., 1936, Columbia

VAN HORN, ROBERT B., 1925 (1938).....Professor of Hydraulic Engineering; Executive Officer of the Department of Civil Engineering
B.S. in C.E., 1916, C.E., 1926, Washington

VAN OGLE, LOUISE, 1915 (1932).....Associate Professor of Music
Theoretical Work with Dr. Bridge, Chester, England; Richter, Leipzig;
Piano, Godowsky, Lhevinne, Berlin; Harold Bauer, Paris

VAN VACTOR, WILLIAM, 1947.....Acting Associate in English
B.A., 1943, M.A., 1945, University of Oregon

VAREY, EDMUND B., 1945 (1946).....Acting Associate in General Engineering
B.S. in C.E., 1945, Washington

VAUGHN, IRVIN R., 1946.....Clinical Instructor in Vital Statistics
B.A., 1927, Iowa State Teachers College

VICKNER, BERTHA ALMEN, 1920 (1947).....Instructor in English
B.A., 1910, Gustavus Adolphus; M.A., 1917, Washington

VICKNER, EDWIN JOHN, 1912.....Professor of Scandinavian Languages; Executive Officer of the Department of Scandinavian Languages
A.B., 1901, A.M., 1902, Ph.D., 1905, Minnesota

VIGGERS, ROBERT F., 1946.....Acting Instructor in General Engineering
B.S. in M.E., 1944, Washington

VOEGTLIN, W. L., 1947.....Clinical Associate in Physiology in the School of Medicine
B.S., 1929, Washington; M.D., 1934, Northwestern

VON BREVERN, MAXIM, 1934 (1942).....Associate Professor of Political Science
Graduate, Imperial and Royal Maria Theresian Military Academy, Wienerneustadt, Austria, 1907; Ph.D., 1935, Washington

WADE, ARTHUR E., 1928.....Lecturer in Home Economics
B.S., Cornell College; M.D., 1905, Sioux City College of Medicine

WAGNER, CHARLOTTE F., 1940 (1946).....Instructor in Speech
B.A., 1937, Washington

WALDERHAUG, ALBERT J., 1946.....Associate in Economics and Business
B.A., 1942, Washington

WALKER, LAUREN M., 1946 (1947).....Assistant Professor of Economics and Business
B.A., 1939, M.B.A., 1943, Washington

WALTERS, MARGARET C., 1929 (1940).....Instructor in English
B.A., 1917, Mills; M.A., 1919, Yale

WANG, KAN-YU, 1946.....Visiting Professor in the Far Eastern Department
B.A., 1929, National Tsinghua University; M.A., 1930, Harvard University

WARNER, FRANK MELVILLE, 1913 (1937).....Professor of Engineering Drawing
B.S.(M.E.), 1907, Wisconsin

WARNING, MARGARET, 1944.....Instructor in Home Economics
B.A., 1936, Morningside College

WATERS, ELLEN H., 1946.....Assistant Professor of Physical Education
B.A., 1927, Washington; M.A., 1940, Columbia

WATSON, WILBUR, 1946.....Clinical Associate in Anatomy
B.S., Washington; M.D., McGill University

WATTS, CHARLES EDWARD, 1947.....Clinical Professor of Medicine
B.S., 1913, Idaho; M.D., 1918, Rush Medical College

WEAVER, CHARLES EDWIN, 1907 (1921).....Professor of Paleontology
B.S., 1904, Ph.D., 1907, California

†WEBSTER, DONALD H., 1939.....Associate Professor of Political Science; Director of Bureau of Public Administration
B.A., 1929, LL.B., 1931, Ph.D., 1933, Washington

WEISER, RUSSELL S., 1934 (1942).....Associate Professor of Microbiology
B.S., 1930, M.S., 1931, North Dakota State; Ph.D., 1934, Washington

WELANDER, ARTHUR D., 1937 (1943).....Instructor in Fisheries
B.S., 1934, Washington

WELCH, RALPH, 1942.....Associate in Physical Education

WELKE, WALTER, 1929 (1943).....Associate Professor of Music
B.M., 1927, Michigan

WERNER, AUGUST, 1931.....Professor of Music
B.S., 1913, College of Agriculture, Stend, Norway

WESNER, ELENORA, 1924 (1946).....Assistant Professor of German
A.B., 1915, Chicago; M.A., 1923, Northwestern

WEST, FRANK B., 1946.....Assistant Professor of Chemical Engineering
B.S. in Chem.E., 1936, Ph.D., 1939, Minnesota

WESTPHAL, KATHERINE, 1946.....Instructor in Art
A.A., 1941, Los Angeles City College; B.A., 1943, M.A., 1943, University of California

WHITE, EDITH MARY, 1945.....Instructor in Nursing
B.S., 1939, Kansas State College; R.N., M.N., 1942, Western Reserve University

WHITE, MARY ELIZABETH, 1946.....Instructor in Music
B.M.Educ., 1935, Southern California

WHITE, MYRON, 1947.....Acting Associate in English
B.A., 1943, Washington

† On leave

WHITE, NANCY, 1944.....Acting Associate in Drama
B.A., 1933, Washington

WHITE, ROLAND J., 1946.....Lecturer in Aeronautical Engineering
B.S. in M.E., 1933, University of California; M.S. in M.E., 1934, M.S. in A.E., 1935, California Institute of Technology

WHITELEY, ARTHUR H., 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 French
B.A., 1907, M.A., 1909, Washington

WILCOX, ELGIN R., 1921 (1936).....Professor of General Engineering
Executive Officer of the General Engineering Department
B S., 1915, Washington; Met.E., 1919, U.S. Bureau of Mines

WILKIE, RICHARD FRANCIS, 1937 (1943).....Instructor in German
B.A., 1934, M.A., 1936, Washington

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

WILLIAMS, J. E., 1946.....Assistant Professor of Geography
A.B., 1929, California; Ph. D., 1932, Vienna

WILLIS, CLIFFORD L., 1946.....Instructor in Geology
B.S., 1939, University of Kansas

WILLIS, LEOTA SNIDER, 1943 (1946).....Instructor in English
B.A., 1923, California; M.A., 1930, Ph.D., 1931, Pennsylvania; Cert. of Studies, 1932, Sorbonne, Paris, France

WILLIS, Captain PARK WEED, Jr., MC-V(S), U.S.N.R., 1940.....Lecturer in Naval Science
B.S., 1916, M.D., 1931, Pennsylvania

WILLISTON, F. G., 1943.....Associate Professor in the Far Eastern Department
A.B., 1922, Ohio Wesleyan; M.A., 1926; Ph.D., 1935, University of Chicago

WILSON, CLOTILDE, 1929 (1937).....Assistant Professor of Romanic Languages
B.A., 1926, M.A., 1927, Ph.D., 1931, Washington

WILSON, FLORENCE BERGH, 1929 (1930).....Assistant Professor of Music
B.M., 1917, B.A., 1924, Washington; M.A., 1925, Columbia

WILSON, GEORGE SAMUEL, 1906 (1924).....Professor of Mechanical Engineering; Consulting Engineer
B.S., 1906, Nebraska

WILSON, RUTH M., 1936 (1945).....Associate Professor of Physical Education
B.S., 1931, Utah; M.S., 1936, Wisconsin

WILSON, WILLIAM CHARLES EADE, 1926 (1940).....Associate Professor of Spanish
A.B., 1922, Montana; M.A., 1925, Ph.D., 1928, Washington

WILSON, WILLIAM R., 1919 (1929).....Professor of Psychology
B.A., 1917, M.S., 1921, Ph.D., 1925, Washington

WINDLE, WILLIAM F., 1946...Professor of Anatomy; Executive Officer of the Anatomy Dept.
B.S., 1921, Denison; M.S., 1923, Ph.D., 1926, Northwestern

WINGER, ROY MARTIN, 1918 (1925).....Professor of Mathematics
A.B., 1906, Baker; Ph.D., 1912, Johns Hopkins

WINKENWERDER, HUGO, 1909 (1912).....Professor of Forestry; Dean Emeritus of the College of Forestry
B.S., 1902, Wisconsin; M.F., 1907, Yale

WINSLOW, ARTHUR MELVIN, 1918 (1927).....Professor of Mechanical Engineering
Ph.B., 1903, Brown; B.S., 1906, Massachusetts Institute of Technology

WINTHER, SOPHUS KEITH, 1925 (1940).....Professor of English
B.A., 1918, M.A., 1919, Oregon; Ph.D., 1926, Washington

WOLLETT, DONALD H., 1946 (1947).....Acting Assistant Professor of Law; Assistant to the Dean of the Law School
B.A., 1941, University of Chicago; LL.B., 1942, Indiana University

WOODCOCK, EDITH, 1930 (1945).....Associate Professor of Music
B.M., 1925, Rochester; M.M., 1936, Washington

WOOLSTON, HOWARD B., 1919.....Professor of Sociology
A.B., 1898, Yale; S.T.B., 1901, Chicago; M.A., 1902, Harvard; Ph.D., 1909, Columbia

WORCESTER, DEAN A., Jr., 1946.....Assistant Professor of Economics
A.B., 1939, M.A., 1940, Nebraska; Ph.D., 1943, Minnesota

WORCESTER, JOHN LOCKE, 1917 (1922).....Professor of Anatomy
M.D., 1900, Birmingham School of Medicine

WORKS, AMY LOU, 1946.....Associate in Economics and Business
A.B., 1941, MacMurray College

WRIGHT, FLORENCE P., 1943.....Acting Associate in English
B.S., 1926, M.A., 1938, Minnesota

WU, JAMES T. K., 1946.....Research Associate in Far Eastern Institute
B.A., 1934, Soochow University; M.A., 1936, Wa Se-Da University, Tokyo

WULFEKOETTER, GERTRUDE, 1944.....Assistant Professor of Librarianship
B.A., 1917, M.A., 1939, Cincinnati; B.L.S., 1923, Univ. of Illinois Library School

YAFFE, CHARLES DAVID, 1947.....Clinical Associate in Public Health and Preventive Medicine
B.S., 1931, M.S., 1932, Texas

YAGGY, ELINOR M., 1943 (1946).....Instructor in English
B.A., 1929, M.A., 1939, Idaho

YAGI, FUMIO, 1946.....Acting Instructor in Mathematics
B.S., 1938, M.S., 1941, Washington; Ph.D., 1943, M.I.T.

YANG, C. K., 1944 (1945).....Assistant Professor in the Far Eastern Department
B.A., 1933, M.A., 1934, Yenching University; Ph.D., 1939, Michigan

YANG, WINIFRED, 1947.....Associate in Economics and Business
B.A., 1942, M.A., 1944, St. John's University, Shanghai

YATES, ELMER HOWARD, 1943.....Acting Instructor in Mathematics
A.B., 1913, Whitman

YOUNGKEN, HEBER WILKINSON, 1942 (1946).....Assistant Professor of Pharmacy
A.B., 1935, Bucknell; M.S., 1940, Ph.D., 1942, Minnesota

ZEUSLER, Rear Admiral FREDERICK A., U.S.C.G., 1937.....Lecturer in Oceanography
Graduate, Coast Guard School

ZILLMAN, LAWRENCE J., 1930 (1943).....Associate Professor of English
B.A., 1928, Ph.D., 1936, Washington

ZUCKERMAN, HERBERT SAMUEL, 1939 (1943).....Assistant Professor of Mathematics
B.S., 1932, California Institute of Technology; M.S., 1934, Chicago;
Ph.D., 1936, California

ZULCH, CLYDE H., 1946.....Instructor in Music
A.B., 1941, Occidental College; M.M., 1946, University of Southern California

ZWERMANN, CARL HENRY, 1939.....Assistant Professor of Ceramics
B.S., 1929, M.S., 1937, Ph.D., 1939, Illinois

## WALKER-AMES PROFESSORS AND LECTURERS

BEMIS, SAMUEL FLAGG, 1947.....Walker-Ames Professor of History
Farnam Professor of Diplomatic History at Yale University

BOULTON, LAURA, 1947.....Walker-Ames Lecturer in Anthropology
Anthropologist

CLOSS, AUGUST, 1948.....Walker-Ames Lecturer in German
Head of the Department of German, University of Bristol, England

FRAENKEL, A., 1946.....Lecturer in Mathematics

KIZER, BENJAMIN H., 1946.....Walker-Ames Lecturer in Political Science; Lecturer in Adult Education Division
Former Director of UNRRA for China

SHELVANKAR, K. S., 1947.....Lecturer in History

TINBERGEN, NIKOLAAS, 1946.....Walker-Ames Lecturer in Psychology
Professor of Animal Psychology at the University of Leiden, Holland

WITTFOGEL, KARL AUGUST, 1947.....Walker-Ames Lecturer in Far Eastern Department
Director of Chinese History Project, Columbia University

ZEBROWSKA, MARIA, 1946.....Walker-Ames Lecturer in Psychology
Assistant Professor of Psychology at the University of Warsaw, Poland

# 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 year classes were opened in a building erected on a ten-acre tract, then on the outskirts of the pioneer city but which now lies 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 $20,000,000.

Its faculty has increased from one man in 1861 to more than 900 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 Library contains 473,781 bound volumes and receives currently about 8,976 serial publications. The Henry Suzzallo Library building is the most beautiful structure on the campus. It houses the basic collection of books and provides facilities for students and faculty.

Specialized library facilities are provided in the fields of science, the social studies, and Pacific Northwest Americana. A branch in Parrington Hall gives reference service in the field of English language and literature. There are several departmental collections on the campus.

The Pacific Northwest Bibliographic Center, sponsored by the Pacific Northwest Library Association, is located in the library building. It contains a Union Catalog of the books in some thirty libraries of the Pacific Northwest and is used as a basis for interlibrary loans and other forms of cooperative library service.

The Law Library, with 103,712 volumes (December, 1946), 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.

Especially noteworthy in the Drama Library collection (12,776 bound volumes) are 3,000 acting editions of nineteenth-century plays; 500 original manuscript plays; and 1,000 volumes in various fields of drama from the private library of Barrett H. Clark, the well-known editor, critic, and historian. The library also possesses a considerable number of theatrical prints, programs, and masks, and other material of historical importance.

The libraries of the University, together with the Seattle Public Library and other Seattle library agencies, provide more than a million volumes for the use of students and research workers.

*Museum.* The Museum of the University of Washington was created as the Washington State Museum by law in 1899. Its collections are representative of the natural science and anthropology of the Northwest and the Pacific. 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.* The University Press, located in Commerce Hall, 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.), and *Pacific Northwest Industry* (editor, Charles J. Miller, M.B.A.), in addition to various scholarly monographs and other general University publications.

*Engineering and Mines Experiment Stations.* The Department of Commerce maintains at the College of Mines, on the campus, its Northwest Experiment Station which serves the Pacific Northwest and the coast regions of Alaska.

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

*Soil Mechanics Laboratory.* The University has the only Soil Mechanics Laboratory in the Pacific Northwest and one of the finest west of the Mississippi. The Soil Mechanics Laboratory contains apparatus for testing the consolidation, permeability, compaction, shear, triaxial compression, capillarity, plasticity, and grain size of soils. It is also supplied with mixers, grinders, balances, and supplementary equipment for research on a wide variety of problems in foundation and earthwork engineering.

*Structural Research Laboratories.* The University has the only large wind tunnel in the country for the aerodynamic testing of bridges. Its recently completed structural materials laboratory houses a 2,000,000-pound testing machine with 120 inches between screws, a number of smaller machines ranging in capacity from 30,000 to 300,000 pounds, and complete electronic apparatus for stress and strain measurement.

*Oceanographic Laboratories.* The University has one of the leading Oceanographic Laboratories of the world. Situated on a 480-acre tract on San Juan Island, the laboratories are ideally located for the study of many of the problems of the sea—biological, physical, and chemical. In this region the marine flora and fauna are very extensive and diversified, and extreme physical and chemical conditions may be found over a relatively small area.

*School of Fisheries.* The University of Washington School of Fisheries is the only university school of fisheries in the world. Adjacent as it is to both fresh and salt water, the University is ideally located for such a school. 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.

*Wind Tunnel.* One of the few large wind tunnels owned and operated by educational institutions in the United States is located on the University campus. The Guggenheim Aeronautical Laboratory and the Boeing Aerodynamical Laboratory furnish means for carrying on research in the various phases of aeronautical engineering. In addition to wind tunnels for testing air foils and propellors, these laboratories maintain the necessary equipment for testing engines and determining the strength of aeronautical structures.

*Bureau of Business Research.* The University of Washington maintains, in the College of Economics and Business, a Bureau of Business Research which 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.

*Hydraulics Laboratory.* The hydraulics laboratory, located on the shore of Lake Union, offers the latest facilities for investigation of a large number of problems in experimental hydraulics and water power.

*Pack Forest and Lee Field Laboratory.* The Charles Lathrop Pack Forest, a tract of approximately 2,000 acres located at LaGrande, Washington, in the Rainier National Park area, 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 located 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.

*Education.* The public schools of Seattle and adjacent towns afford unexcelled laboratory facilities for various lines of modern research in education.

*Botany.* The Northwest is a most excellent location for botanical work. The rainfall is heavy in winter, and freezing is not sufficient to kill vegetation entirely. Salt water is only four miles from the University, and in 100 miles of horizontal travel, altitude ranges are from sea level to 14,000 feet.

*University Health Center.* The University Health Center is housed in a modern building with offices for the doctors and nurses, 75 beds, and a diet kitchen. Its 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.

*Theatres.* The University's School of Drama operates two theatres on the campus which have won national recognition for their distinctive style and high standard of performance. The *Showboat Theatre,* located 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.

Plays open to the public are produced regularly at both theatres on a non-profit basis.

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

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

*Far Eastern Institute.* The Far Eastern 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.

*Institute of Labor Economics.* The Institute of Labor Economics was established to provide facilities for the study of questions and problems in the field of Labor Economics and Industrial Relations. The personnel and equipment of the Institute are available at all times for assisting those who desire aid in the solution of their problems.

## THE UNIVERSITY ORGANIZATION

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

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

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

A. *The College of Arts and Sciences,* composed of the departments in liberal arts and pure science and the following 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 Economics and Business*

C. *The College of Education*

D. *The College of Engineering*

E. *The College of Forestry*

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

| | |
|---|---|
| G. *The School of Law* | K. *The School of Dentistry* |
| H. *The College of Mines* | L. *The School of Nursing* |
| I. *The College of Pharmacy* | M. *The Far Eastern Institute* |
| J. *The School of Medicine* | |

*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. 51) 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 51.

*Special Curricula within the Schools.* Certain semiprofessional curricula are given for which no special school or college is provided. Such are the curricula in pre-education, 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 11 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, therefore, 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

Owing to large numbers of applicants and to limited facilities, the University of Washington has found it necessary to create a special Admissions Board to supervise admissions. While it is the wish of the University to return to regular admission procedures as rapidly as possible, the following modifications in standard entrance requirements must continue until further notice:

(1) Suspension of the provision for admission on probation (see page 53).

(2) Limitation of enrollment to legal residents of the State of Washington and the Territory of Alaska.

*Only rare exceptions are made to these regulations. An applicant who wishes reconsideration on either score may petition the Admissions Board for a review of his case.*

The limitations upon admissions shall not apply to students heretofore admitted who were thereafter in regular attendance and who have not subsequently attended another collegiate institution except under Army or Navy programs.

### 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

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; for admission to the other sessions they should be sent at least thirty days before the opening of the session. Students seeking admission for the autumn quarter may be disappointed if applications are submitted later than July 15, as those received by that date will have precedence. *The University cannot guarantee prompt attention to credentials and reply to correspondence, especially if the student fails to heed the above warning.*

### 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 a certification of high school 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 exclusive of activity credit in physical education, debate, etc.) with grades certifiable for college entrance and a 2.0 grade-point average.† See chart, page 52.

* 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.

† 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 three-point grading system will find their scholarship average adjusted to our four-point system. See item (2), above.

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

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. *Provisional standing* continues until the student has satisfied the entrance requirements of the college in which he is enrolled. A student in 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 being considered the equivalent of one high school unit. University

## 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.) | 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. Mines..... | 3 | 3 (Elem. & Adv. Alg., Plane & Solid Geom.) | 0 | 1 (Chem.)[4] 1 (Phys.)[1a] | 0 | 1 | 7 |
| 7. Pharmacy..... | 3 | 2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.) | 0 | † | 0 | Minimum of 4 | 7 |
| 8. 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.

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

* 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 and sophomore years, with credit toward graduation.

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

‡ 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 2.5 or better. An entrance deficiency in foreign language may be removed by substituting 20 credits in English literature.

credits earned by removing a deficiency cannot be used to satisfy group requirements (see page 72). 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 and he meets the provisions listed above. 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 if he attains a 2.0 grade-point average in the schedule normally required for a first-quarter student or a cumulative 2.0 grade-point average thereafter. See page 64, item (1).

(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 51, 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 College Entrance Examination Board, 425 West 117th Street, New York, N. Y., 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 61.
   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 59.
   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.
   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 of Washington, unless written permission to register for such courses is obtained by the student 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 104 and 121.
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 122 and 146.

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 residents of the State of Washington 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 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 the course only by enrolling in it as a regular student in a subsequent quarter.

### Advanced Credit

1. *By transfer* of credits earned in residence. See above.
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.* (For advanced credit in Music, see page 88.)
   a. The work covered by the examination must have received no credit from any institution.
   b. An examination may not be taken in a course which the student has audited or in which he has been registered in an accredited institution.
   c. A student may not apply for advanced-credit examination in more hours of credit than he would be permitted to take in regular courses.
   d. Only a student enrolled in the University during the current quarter may apply for such an examination.
   e. Not more than one-half the number of credits required for graduation may be earned by advanced-credit examination and/or by extension.
   f. The student must obtain an application form at the Information Window in the Registrar's office and follow exactly the directions given. The fee is $2 per credit hour.
   g. If the examination is not a comprehensive written one, the dean of the college shall require that a statement of the procedure by which the student was tested be submitted for filing.

### The Division of Adult Education and Extension Services

Through a Department of Correspondence and Extension Classes, 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 home 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. Not more than one-half the number of credits required for graduation may be earned by extension and/or by advanced-

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

credit examination; for use of such credit for an advanced degree, see page 135. See Senior Year Residence Rule, page 61.

No resident student may take an extension course without the consent of his dean, the Registrar, and the Director of Correspondence and Extension Classes. 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 6 for registration dates for each quarter.)

Because of the large enrollment, 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 (108 Education Hall). See page 6 for dates 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 (108 Education Hall) 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 curricula, exclusive of required physical education activity courses.

No student shall be registered for more than twenty credits of work exclusive of required physical education activity courses.

### 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 registration is completed.

### Medical Examinations

All students, regardless of classification, 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 four days immediately preceding the beginning of instruction for the autumn quarter are designated as Welcome Week. This program is directed by the A.S.U.W. Board of Control. 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.

## 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 58 regarding late registration fines.*

| Type of Registration | Tuition Fee | Incidental Fee | Miscl. Fees | A.S.U.W. FEE[2] | | | TOTAL FEES | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Aut. Qtr. | Win. Qtr. | Spr. Qtr. | Aut. Qtr. | Win. Qtr. | Spr. Qtr. |
| Undergraduate | $25 | $12.50 | ** | $5 | $2.50 | $2.50 | $42.50 | $40.00 | $40.00 |
| Fresh. and new soph. | 25 | 12.50 | | 5 | 2.50 | 2.50 | 42.50 | 40.00 | 40.00 |
| Graduate | 25 | 12.50 | | * | * | * | 37.50 | 37.50 | 37.50 |
| Medical School | 100 | 12.50 | 3.50[3] | 5 | 2.50 | 2.50 | 121.00 | 118.50 | 118.50 |
| Dental School | 100 | 12.50 | 9.00[4] | 5 | 2.50 | 2.50 | 126.50 | 124.00 | 124.00 |
| Law School | 25 | 12.50 | ‡ 10 | 5 | 2.50 | 2.50 | 52.50 | 50.00 | 50.00 |
| Auditors | 12 | | | * | * | * | 12.00 | 12.00 | 12.00 |
| Ex-service personnel of World War I | | 12.50 | | 5 | 2.50 | 2.50 | 17.50 | 15.00 | 15.00 |
| †Undergraduate Nurses in approved hospital | 5 | | | * | * | * | 5.00 | 5.00 | 5.00 |
| †Graduate nurses in approved hospital | 10 | | | * | * | * | 10.00 | 10.00 | 10.00 |
| 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 |
| ††¶Nursery School | 15 | | | | | | | | |

[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, $1.25, optional; good for entire year but must be validated each quarter at time of payment of fees.

[3]Microscope fee.

[4]Microscope fee, laboratory case rental, dental engine rental.

*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.

**$25 uniform deposit for those who register for military science. Refund upon return of U.S. Army issued property.

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

¶The fee for children in the Nursery School is $35 per child per quarter for 3-hr. per day attendance; $50 per child per quarter for 6-hr. per day attendance. Special audit fee for both residents and nonresidents is $15. Nursery School begins Sept. 22, 1947.

‡Law library fee.

NOTE: The following courses require the payment of a fee in addition to tuition: *Nursing field work*, $5 per course; *cadet teaching*, $1 per credit hour; *botany field trip*, $5.

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

## FEES FOR NONRESIDENT STUDENTS[1]

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

| Type of Registration | Tuition Fee | Incidental Fee | Miscl. Fees | A.S.U.W. FEE[2] | | | TOTAL FEES | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Aut. Qtr. | Win. Qtr. | Spr. Qtr. | Aut. Qtr. | Win. Qtr. | Spr. Qtr. |
| Undergraduate | $75 | $12.50 | ** | $5 | $2.50 | $2.50 | $92.50 | $90.00 | $90.00 |
| Fresh. and new soph | 75 | 12.50 | | 5 | 2.50 | 2.50 | 92.50 | 90.00 | 90.00 |
| Graduate | 75 | 12.50 | | * | * | * | 87.50 | 87.50 | 87.50 |
| Medical School | 165 | 12.50 | 3.50[3] | 5 | 2.50 | 2.50 | 186.00 | 183.50 | 183.50 |
| Dental School | 165 | 12.50 | 9.00[4] | 5 | 2.50 | 2.50 | 191.50 | 189.00 | 189.00 |
| Law School | 75 | 12.50 | ‡ 10 | 5 | 2.50 | 2.50 | 102.50 | 100.00 | 100.00 |
| Auditors | 12 | | | * | * | * | 12.00 | 12.00 | 12.00 |
| Ex-service personnel of World War I | 37.50 | 12.50 | | 5 | 2.50 | 2.50 | 55.00 | 52.50 | 52.50 |
| †Undergraduate Nurses in approved hospital | 5 | | | * | * | * | 5.00 | 5.00 | 5.00 |
| †Graduate nurses in approved hospital | 10 | | | * | * | * | 10.00 | 10.00 | 10.00 |
| 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 |
| †¶Nursery School | 50 | | | | | | | | |

[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 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, $1.25, optional; good for entire year but must be validated each quarter at time of payment of fees.

[3]Microscope fee.

[4]Microscope fee, laboratory case rental, dental engine rental.

*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.

**$25 uniform deposit for those who register for military science. Refund upon return of U.S. Army issued property.

†Individuals these classifications must be certified by the School of Nursing, the Graduate School, or the Nursery School.

¶The fee for children in the Nursery School is $35 per child per quarter for 3-hr. per day attendance; $50 per child per quarter for 6-hr. per day attendance. Special audit fee for both residents and nonresidents is $15. Nursery School begins Sept. 22, 1947.

‡Law library fee.

NOTE: The following courses require the payment of a fee in addition to tuition: *Nursing field work*, $5 per course; *cadet teaching*, $1 per credit hour; *botany field trip*, $5.

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

## EXPENSES

### Payment of Fees

*All fees are payable at the time of registration.*

### Exemptions

Graduate members of the University teaching staff are exempt from the tuition and incidental fees; A.S.U.W. fee is optional.

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

All honorably discharged service men or women who served in the military or naval services of the United States during World War I, between April 6, 1917, and November 11, 1918, classified as residents, are exempt from the tuition fee. Under this exemption a reduction of one-half of the nonresident fee is granted nonresident students. 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 war. (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.

### Refund of Fees to Students Withdrawing to Enter Military Service

Students volunteering or called to military service will be refunded registration fees in proportion to the time spent in attendance, subject to the limitation of the statute in regard to refund of the State tuition. After the fourth week, a student withdrawing to enter military service may receive from one-third to full credit for all courses in which his grades are "passing." See page 65.

### Summer Quarter Fees

(*Important:* Consult Summer Quarter Bulletin for fees.)

### Miscellaneous Charges Applicable Only in Special Cases

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

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

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

*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 $1.25 ($1.00 plus 25¢ federal and city tax.)

*Breakage Ticket 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).

*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 54.)

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, $5; two hours a day, $10; three hours a day, $12.

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

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

*Graduation Fee.* Each graduate receiving a baccalaureate or higher degree is required to pay a graduation fee of five dollars ($5). The fee for a three-year secondary 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 diploma.

*Printing and Thesis Binding Fees.* Each recipient of a higher degree pays a fee of two dollars ($2) for the binding of one copy of his thesis. In addition, each recipient of a 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 (50¢) 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 Appointments Fee.* Candidates seeking teaching positions pay an initial registration fee of five dollars ($5). A replacement or maintenance charge of two dollars and fifty cents ($2.50) is charged each subsequent year for persons wishing to remain on the active list.

*Certification of Credits from Unaccredited Schools.* Credits 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 118 for details.

* Available only to students registered in the School of Music.

### Financial Obligations

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.

### Living Costs

Board and room expense varies according to the type of accommodation desired. (See section on Housing, page 67.)

The Coffee Shop, located in Clark Hall on the campus, serves excellent breakfasts and lunches at reasonable prices.

Meal tickets are available for those wishing service in the Commons, located in Raitt Hall.

## SCHOLASTIC REGULATIONS

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

### I. Requirements for Graduation

### 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 to the University, those entering with junior or senior standing, those registered for six 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 may elect any activity course with the provision that they participate in one group activity and two individual "carry over" activities during the six quarters of work.

   c. Those men who take Naval Science must take a physical activity course each quarter for the full four years, and in addition must pass a Navy swimming test once each year.

2. A two-credit academic course in personal health (Physical Education 15) is required of all male students who have not satisfied this requirement in an accredited university or college.

   a. This requirement should be completed during the first year of University residence.

   b. A student may be 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 to the University, those entering with junior or senior standing, those registered for six credits or less, or special students. This requirement must normally be completed during the first six quarters of University residence.

2. A two-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

* Special programs adapted to the individual's needs 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.

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 one hundred and thirty-five credits and the required credits in physical education have been earned. Of the work of the senior year (forty-five credits) at least thirty-five credits shall be earned in a minimum of three quarters in residence. The remaining ten credits shall be earned either in residence or through the University 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.

### Thesis

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

### 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.

A candidate for the bachelor's degree whose grade average is below 2.0 and who has more than one hundred eighty academic credits on his permanent record may attain the minimum required grade average by presenting for graduation the one hundred and eighty credits in which he received his highest grades, plus the required credits in physical education. 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, the first two years of Army and Navy subjects shall be excluded.

In the Colleges of Arts and Sciences, Education, Pharmacy, and Economics and Business (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, Mines, 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 65.

For rule regarding repetition of courses in which grades of "D" or "E" were obtained, see "Repeating of Course," page 63.

### Upper-Division Credits

A minimum of sixty 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 52.

Details concerning issuance of teaching certificates may be obtained from the College of Education. See page 104.

### 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 ten 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 and their value in grade points:

| *Grade* | *Grade Pts.* | *Grade* | *Grade Pts.* |
|---|---|---|---|
| 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 four quarters of residence or lose all credit for the course. If the course is not offered in any one of the four quarters specified, the Incomplete may be converted when the course is next offered; if it is not again offered prior to the time at which the student expects to be graduated, he may convert it by taking a special examination.

N—Satisfactory without grade, used in *undergraduate* 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—Satisfactory without grade for *graduate* courses; it may be used as a final grade.

P—Grade for lower-division choral and instrumental ensemble classes, evaluated as "C" (2 points) for purposes of graduation and ignored for purposes of honors.

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.

### Change of Grade

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

### Repeating of Course

Students who have received grades of "D" or "E" may repeat the courses in which these grades were obtained, or may with the approval of the dean of their college substitute other courses in their place, and in such cases the grade received the second time, either in the repeated or the substituted course, shall be the one counted in computing the average required for graduation. 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.

### 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 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. Reports of all examinations of seniors and of all candidates for graduate degrees shall be in the Registrar's office by twelve o'clock noon of the Saturday preceding Commencement Day.

7. Special early examinations, given to individual students or groups of students as substitutes for final examinations, are prohibited. This rule shall not apply to examinations regularly given to seniors in the senior examination period.

### Cheating

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

1. An instructor may dismiss from the course any student who is found cheating, and the student so dismissed shall be given a grade of failure in the course.

2. A student who is accused of cheating shall be reported to the Registrar, who shall inform the Office of Student Affairs and the dean of the college concerned of the facts of the case. The offender shall automatically be placed on academic probation unless he appeals his case to the Student Discipline Committee within one week.

3. A student reported for an additional offense under this rule shall be reported to the Student Discipline Committee. The offender shall be notified of this action and shall be granted a hearing before that committee. In such a case the Student Discipline Committee may take whatever action it deems suitable.

### 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 in any subject shall be so advised.

3. The dean may place on probation or require to withdraw from the college a student who falls below a cumulative grade-point average of 1.8 for the freshman year, and a 2.0 average thereafter.

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

4. *Reinstatement* of a student disqualified under the provisions of paragraph 3 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.

* 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.

5. The student who is *placed on probation* by the dean of his college, shall, as to his academic and activity program, be subject to the complete authority of the dean; the dean shall decide when the student shall be removed from probation or dropped from college.

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. Beginning autumn quarter, 1946, 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 71-147.

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; 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 62 for the grades which may be given.

Note: A student is not permitted to have a withdrawal from required courses in freshman English, physical education activities, or Physical Education 10.

*Emergency Regulations Applicable to Students Joining the Armed Forces.* A student who withdraws from the University during the quarter to join the armed forces shall be given credit, according to the following schedule, for the course work he has completed with passing grades:

1. If the student withdraws during the first, second, third, or fourth week of the quarter, no credit allowance shall be made.

2. If the student withdraws during the fifth, sixth, or seventh week, he shall receive one-third credit for all courses in which his grades are passing. This credit shall be recorded as "unspecified" or "general" credit.

3. If the student withdraws during the eighth, ninth, or tenth week, he shall receive two-thirds credit for all courses in which his grades are passing. This credit shall be recorded as "unspecified" or "general" credit.

4. If the student withdraws during the eleventh or twelfth week, he shall receive full credit for all courses in which his grades are passing.

5. In respect to law students, credit will be granted in accordance with the foregoing provisions, when approved by the law faculty.

6. A senior who withdraws during the seventh, eighth, ninth, tenth, eleventh, or twelfth week of the quarter in which he would normally receive his degree may be given full credit for the quarter's work and permitted to graduate upon recom-

mendation of his major professor, department head, and college graduation committee.

7. Refund of fees shall continue as per the schedule approved by the Board of Regents in autumn quarter, 1940.

### 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

### General Eligibility Rules

In order to participate in any student activity, a student shall comply with the rules and regulations of the committee governing the activity. For students who wish to participate in athletics, this shall be the University Athletic Committee; for students who wish to participate in student affairs, this shall be the Committee on Student Welfare; student campus organizations come under the supervision of the Committee on Student Campus 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 seven 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.

### Associated Students

The Associated Students of the University of Washington (A.S.U.W.) is the central organization which conducts the activities of the student body. Membership is required of all regularly enrolled undergraduate students. For fees, see pages 56-57. The fee gives each student a membership in the corporation, including a free subscription to the University of Washington *Daily* and helps to finance the program of athletics, debates, concerts, lectures and other activities of the A.S.U.W. Any member of the A.S.U.W. has the privilege of purchasing an athletic ticket for $1.25, 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.

## STUDENT WELFARE

### Housing

The University offers accommodations for young women in well-equipped and well-supervised dormitories on the campus. War housing dormitories are also available on the campus for young men. Through the Housing Bureau of the Office of Student Affairs and through the Health Service the University inspects and approves a wide variety of living accommodations for men and women students off campus. Card-catalogue listings of such places are available at the Housing Bureau, and include boarding and rooming houses, private homes, apartments and housekeeping rooms, the student cooperatives, independent organized houses which are sponsored by the University, religious organizations, and fraternity and sorority houses. Residence in the last mentioned awaits invitation to membership but reservations in all other group houses are made by application to the house, either direct or through the Housing Bureau. It is suggested that residence should be arranged for on the basis of the school quarter, by written agreement with the householder or board of trustees of the house. Any circumstance necessitating change should be cleared through the Housing Bureau. Bulletins describing the nature and cost of accommodations are printed semiannually by the Housing Bureau for distribution to those who apply.

Women students under twenty-one years of age not living in their own homes, with immediate relatives, in nurses' training school homes, or in homes where they are earning their board and room, 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 shall 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.

### Employment

All part-time placement for men and women in off-campus jobs, including board and room jobs, is handled through the University Employment Office located in Clark Hall. For further information on employment write Norman D. Hillis, University Employment Association, Room 317, Clark Hall, University of Washington Campus.

Application for a job on the campus should be made at the Comptroller's office in Education Hall.

### Loans

There are several loan funds available to worthy students. Students desiring loans should file application at least ten days prior to the day instruction begins. For information, consult the Office of Student Affairs, which keeps complete information on the availability of loan funds both within and without the University. Loans from funds administered off the campus should be applied for approximately six weeks in advance of need.

### 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.

### Personal and Vocational Guidance

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 vocational 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 and other sources of information and assistance. Obstacles to successful work in college may often be removed through the friendly advice these officials stand ready to give. The Office will be glad to discuss with students any problems concerning the military services.

### Information for Veterans

*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 pp. 51-54.) 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 54.)

Veterans' 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 Comptroller's office during registration in lieu of payment of fees. A credit card will then be issued, 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 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 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 requirements. Specialized training courses for enlisted men, such as those which qualify a man to be 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.

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. 15 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. 15 requirements.

*Registration.* The veteran's first stop on the campus is the Office of Student Affairs, where a counselor for veterans will give him information and assistance.

*Married Students.* The University accepts married students. See, however, the section on housing.

## 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 financial need, excellence of character, and scholarly achievement and promise. Awards are made principally to upperclass and graduate students since the University has only a very few scholarships available to entering freshmen.

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, 204 Clark Hall, 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
Arboretum (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
Daughters of American Revolution
Arthur A. Denny Fellowships
Sara Loretta Denny Fellowships
Frances Dickey Memorial
Bob Doble Memorial
School of Drama Scholarships
Engineering Fellowships
Evergreen Theatres
Family Society of Seattle Fellowships
Foreign Exchange Scholarships
Frederick and Nelson
Gamma Phi Beta Alumnae
Inter-Fraternity Council
Iota Sigma Pi
Arlien Johnson Scholarship
Kappa Alpha Theta Alumnae
Kappa Kappa Gamma Alumnae
King County Welfare Department Fellowships
Kellogg Foundation
William Mackay Memorial
Charles E. Merrill
Mines Research Fellowships
Mu Phi Epsilon
T. F. Murphy
National Research Fellowships
E. C. Neufelder
Phi Mu Alpha
Pi Lambda Theta
Rhodes Scholarships
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
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 & 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 & Blade
Sigma Delta Chi
Sigma Epsilon Sigma
Women's Auxiliary of Washington State Pharmaceutical Association
Western Printing Company
Howard Brown Woolston
Zeta Phi Eta

## 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 is also developing 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 premajors.

### Entrance Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 51-60. 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 two-credit *academic* course, must be taken by all women during the freshman year.

Physical Education 15, a two-credit *academic* course, is required of all men.

In all other respects the requirements for graduation in the College of Arts and Sciences conform to the all-University requirements.

NOTE: In *all* curricula, the 180 academic credits required for graduation must include a minimum of sixty 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 | Astronomy |
| Art | Economics | Botany |
| Classical Languages | Geography | Chemistry |
| Drama | History | Fisheries |
| English | Home Economics | Geology |
| Far Eastern | Philosophy | Mathematics |
| General Literature | Physical Education | Microbiology |
| Germanic Languages | Political Science | Oceanography 1 |
| Journalism | Psychology | Pharmacy 15 |
| Liberal Arts | Sociology | Physics |
| Librarianship | | Zoology |
| Music | | |
| Romanic Languages | | |
| 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 thirty-six or more credits in the subject represented by the department concerned. They are expected to complete, during the first two years, a minimum of thirty credits in one group, twenty credits in a second group, and ten credits in the remaining group. Departments may add to these requirements if they so desire.

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 81, 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 132.

## ANTHROPOLOGY

ERNA GUNTHER, *Executive Officer,* 211 Museum

DEGREE: Bachelor of Arts

The following courses are required: 51, 52, 53; 60 or 63 or 65; 101 or 107; 111 or 112 or 114; 120, 142, 143, 150, 160, 185, and sufficient credits in 190, 191, 192 to make a total of 50 credits. 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, *Executive Officer,* 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* | SECOND YEAR | *Credits* |
|---|---|---|---|
| Arch. 1-2. Appreciation | 4 | Arch. 10, 11, 12. Arch. Drawing | 12 |
| Arch. 3. The House | 2 | Art 32, 33. Freehand Drawing | 4 |
| English 1, 2, 3. Composition | 9 | Art 34. Sculpture | 2 |
| Math. 54, 55, 56. Arch. Math. | 9 | Physics 1 or 4 | 5 |
| Soc. 1. Survey, for Arch. | 5 | Physics 12, 13. Arch. Physics | 10 |
| Soc. 116. Amer. Housing | 3 | Psychology 118. Soc. Psych. | 5 |
| P. E. 10 or 15 | 2 | E.B. 4. Survey of Economics | 5 |
| Electives | 11 | Electives | 2 |

### 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 |
| G. E. 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 |
| C. E. 116, 117, 118. Struct. 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 |
| C. E. 151. Plumb. & Sanitation | 2 |
| E. E. 105. Illumination | 2 |
| M. E. 110. Mech. Equip. of Bldgs. | 2 |

## 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. 151. Modern History | 2 |
| Arch. 152, 153. Theory | 4 |
| Arch. 154. Design Gr. III | 5 |
| Arch. 180, 181. Principles of Planning | 4 |
| Arch. 190, 191. C. P. Design | 10 |
| Art 160. Life | 3 |
| C.E. 21. Surveying | 3 |
| C.E. 150. San. Eng. and P. H. | 3 |
| C.E. 152. Municipal Eng. | 3 |
| Electives | 8 |

| FIFTH YEAR | Credits |
|---|---|
| Arch. 182, 183. Principles of Planning | 3 |
| Arch. 192, 193. C. P. Design | 10 |
| Arch. 194. Thesis | 7 |
| E.B. 3. Economics | 3 |
| E.B. 57. Business Law | 3 |
| *E.B. 109. Principles of Real Estate | 5 |
| Geog. 155. Infl. Geogr. Environment | 5 |
| *Soc. 165. The City | 5 |
| Electives | 4 |

* Courses with prerequisites which must be adjusted.

## 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 and Pre-Industrial Design.

### REQUIRED FOR THE FIRST YEAR

| | | | |
|---|---|---|---|
| Art 5, 6, 7. Drawing | 9 | English 1, 2, 3. Composition | 9 |
| Art 9, 10, 11. Design | 9 | Modern Foreign Language | 15 |
| P.E. 10 or 15. Health Education | 2 | Electives | 2 |

### General Curriculum

| *Second Year* | Credits | *Third Year* | Credits | *Fourth Year* | Credits |
|---|---|---|---|---|---|
| Art 12. History of Art | 5 | Arch. 1-2. | 4 | Art. 20. Modern Sculpture | 2 |
| Art 53, 54, 55. Design | 9 | Art 103, 104, or 157, 158. | 6 | Art 101. Elementary Interior Design | 2 |
| Art 56, 57, 58. Drawing and Painting | 9 | Art 126. Hist. of Painting | 2 | Art 150 or 151. Illustration | 5 |
| Art 72. Sculpture | 3 | Approved Design | 3 | Art 163, 164, or 165. Composition | 6 |
| Electives | 19 | Art 160, 161, 162. Life | 9 | Art 195, 196, 197. Senior Seminar | 3 |
| | | Econ., Pol. Sci., or Soc. | 5 | Electives | 28 |
| | | Laboratory Science | 10 | | |
| | | Electives | 6 | | |

Costume Design courses: Art 169, 170, 171, 179, 180, 181; Home Economics 12, 25, 47, 101, 102, 160, 161, 198.

## 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, p. 104. The social science credits may be earned in sociology, economics, political science, or History 164. An average standing of "B" in art subjects is required of all teaching candidates.

| *First Year* | *Credits* | *Second Year* | *Credits* | *Third Year* | *Credits* |
|---|---|---|---|---|---|
| Art 5, 6, 7. Drawing | 9 | Arch. 1-2. | 4 | Art 103, 104, or 157, 158 | 6 |
| Art 9, 10, 11. Design | 9 | Art 12. History of Art | 5 | Art 105, 106 | 6 |
| English 1, 2, 3. Comp. | 9 | Art 53, 54, 55. Design | 9 | Art 160 or 161 or 162. Life | 3 |
| P. E. 10 or 15. Health Education | 2 | Art 56. 57, 58. Dr. & Ptg. | 9 | Sculpture (3) or Cost. Des. (2) plus Electives | 12 |
| Social Science | 5 | Lab. Science | 10 | Educ. 9, 60, 70, 90 | 13 |
| Electives | 11 | Psych. 1. General | 5 | Social Science | 5 |
| | | Educ. 1. Orientation | 2 | | |
| | | Electives | 3 | | |

| *Fourth Year* | *Credits* | *Fourth Year* | *Credits* | *Fifth Year* | *Credits* |
|---|---|---|---|---|---|
| Art 20. Modern Sculpture | 2 | Art 150. Illustration | 5 | Educ. 71, 72. Cadet Teach. | 8 |
| Art 100. Elem. Crafts | 2 | Art 163, 164, 165. Comp. | 5 | Educ. 120. Educ. Soc. | 3 |
| Art 101. Elem. Int. Design | 2 | Art 195, 196, 197. Senior Seminar | 3 | History 164. | 5 |
| Art 102. Book-Making and Book-Binding | 2 | Educ. 75A. Methods | 2 | Social Science | 5 |
| Art 126. Hist. of Painting | 2 | Electives | 15 | Phil. 129. Phil. of Art | 5 |
| | | | | Electives | 24 |

## 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, 106, 126—a total of twenty 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 fifty-eight 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

Second Year: Art 12, 20, 53, 54, 55, 56, 57, 58, 72; Econ., Pol. Sci., or Soc., five credits; electives, twelve credits.

Third Year: Art 105, 106, 126, 129; 160 or 161 or 162; 169, 170 or 171; laboratory science, ten credits; electives, fifteen credits.

Fourth Year: Art 51, 150 or 151; 163 or 164; 166; 195, 196, 197; Econ. 4; approved journalism, ten credits; Psych. 1; electives, five to ten credits.

## Industrial Design*

First Year: Art 5, 6, 7, 9, 10, 11; English 1, 2, 3; Chemistry† 1-2 or 5-6; General Engineering 7; P. E. 10 or 15; electives, three credits.

Second Year: Art 53, 54, 55; Architecture 10, 11, 12; Physics 12, 13; electives, nine credits.

Third Year: Art 12, 80; 103, 129, 157; Architecture 1, 2; M. E. 53, 54, 55, 104; modern foreign language, fifteen credits; electives, six credits.

Fourth Year: Art 20, 101, 116, 126, 195, 196, 197; Psych. 123; M. E. 109; E. & B. 57; Journalism 130, 131, 132; Home Economics 24; electives, eight credits.

* For more complete preparation in this field a postgraduate year of specialized professional training (not offered at the University of Washington), supplemented by practical experience, is recommended.

† Electives may be substituted for chemistry if the student presents one year of high school chemistry for entrance. Suggested electives: Art 5, 81, 82; Engineering English 40, 81, 101; Speech 40; Architecture 1, 2; E. & B. courses in marketing.

### Interior Design

Second Year: Arch. 1, 2, 3, 4, 5, 6, 7, 8, 9; Art 80, 81, 82, 83; electives, thirteen credits.

Third Year: Art 12, 58, 62, 110, 111, 112, 126; Econ., Pol. Sci., or Soc., five credits; laboratory science, ten credits; electives, five credits.

Fourth Year: Art 20, 172, 173, 174, 195, 196, 197; Home Econ. 146; electives, fifteen credits.

### Painting

Second Year: Art 12, 56, 57, 58, 65, 66, 67, 72; electives, nineteen credits.

Third Year: Arch. 1-2; Art 20, 107, 108, 109, 126; approved Design, six credits; Econ., Pol. Sci., or Soc., five credits; laboratory science, ten credits; electives, eleven credits.

Fourth Year: Art 160, 161, 162, 163, 164, 195, 196, 197; electives, twenty-three credits.

### Sculpture

Second Year: Art 12, 56, 57, 58, 72, 73, 74; electives, twenty-two credits.

Third Year: Arch. 1-2; Art 20, 103, 104, 122, 123, 124, 126; Econ., Pol. Sci., or Soc., five credits; laboratory science, ten credits; electives, eleven credits.

Fourth Year: Art 132, 133, 134, 136, 137, 138, 160, 161, 162, 195, 196, 197; electives, fifteen credits.

## BOTANY

C. L. HITCHCOCK, *Executive Officer*, 306 Johnson Hall

DEGREE: Bachelor of Science

The elective major requires 40 credits, including courses 1, 2, 3, 43, and 108.

### Teaching Major or Minor in the College of Education

The major requirement is the same as in the College of Arts and Sciences, except that 24, 25, and 101 are required. A minor requires 25 credits including courses 1, 2, 3, 25, 101, and 8 or 108.

## CHEMISTRY

H. K. BENSON, *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, 132; 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 15.

Second Year: Chem. 101, 109, 110; Math. 107, 108, 109; Physics 1, 2, 3 (or 4, 5, 6).

Third Year: Chem. 131, 132, 133; 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, 132, 140-141. One year of college physics is required. For the teaching minor, the student should present the following courses, making a minimum total of 25 credits: Chem. 1-2 or 21-22, 23, 101 and 111, or 131, 132. At least high school physics is required for the minor.

Grades of "C" or above must be obtained in all required chemistry courses. 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 at least 36 credits in either Greek or Latin and a satisfactory showing in the Senior Examination are required; one-half of the credits must be in upper-division courses and the Latin major must include Latin 106, 160, 161, 162. In addition Latin 3 or equivalent is required for a major in Greek, and Greek 3 or equivalent is required for a major in Latin. Greek 1-2, Latin 1 to 6, and courses in Classical Antiquities do not count for a major or minor in the department.

### 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, including Latin 106, are required. The student must also pass an examination which will test his knowledge of the Latin ordinarily taught in a standard four-year high school.

## 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

* The foreign language should be continued through courses in scientific German or French.

(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

H. H. PRESTON, *Dean,* College of Economics and Business, 210 Commerce Hall

DEGREE: Bachelor of Arts

A major requires 50 credits including E.B. 1-2, Principles of Economics; E.B. 60, Statistical Analysis; E.B. 105, Economics of Labor; E.B. 185, Advanced Economics; E.B. 187, History of Economic Thought; and 20 additional credits from the following: E.B. 103, 104, 106, 107, 108, 120, 121, 125, 131, 141, 142, 161, 163, 164, 171, 172, 175, 181, 182.

### Teaching Major or Minor in the College of Education

Students choosing economics as either their teaching major or minor should consult with the executive officer of the department of economics or the professor in charge of advanced economics with regard to a proper selection of courses. For a major the requirement is the same as above. For a minor 20 credits are required from the above list, including courses 1-2 and 185.

## ENGLISH

### Composition and Creative Writing—English Language and Literature

D. D. GRIFFITH, *Executive Officer,* 107 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 including courses 151, 170, 168 or 144, 177 or 174, 161 or 162, and twenty-five English elective credits of which twenty are earned in upper-division literature or creative writing courses. These upper-division credits may be used to complete the survey of English and American literature or to provide concentrations in certain periods of literature or in creative writing.*

Professional certification for a secondary teaching certificate requires, as a part of or in addition to the above major, Education 75H, I, or J, Speech 79, English 117, and three credits of advanced or creative writing. A 2.25 grade-point average in upper-division English is also required.

Two minors are offered students desiring certification for a secondary certificate. The first minor requires 36 credits including 64, 65, 66; advanced composition or 117; Speech 79; and two major courses. The second minor requires 24 credits which must include 15 credits of literature (preferably 64, 65, 66, or 57, 58, 117), 3 of advanced composition, and 3 of speech.

## FAR EASTERN

GEORGE TAYLOR, *Executive Officer,* 230 Denny 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.

* The department also accepts, as elective credit, approved courses in General Literature, Drama, Speech, and in foreign literatures in English translation offered by the ancient and modern language departments.

2. A special major requires Far Eastern 10; 30 credits in either the Japanese, Chinese, or Russian language; 15 credits in other Far Eastern subjects; and a strong concentration of elective credit in some one of the social sciences or humanities.

3. A linguistic major requires Far Eastern 10; 58 credits in either Japanese, Chinese, Russian, or Korean; and 70 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.

### Teaching Minor in the College of Education

For a teaching minor in Far Eastern the following courses must be presented: Far Eastern 10; five credits selected from Far Eastern 136, 180, 181; five credits selected from Far Eastern 40, 41, 143, 196; three credits of approved electives—a total of eighteen credits.

A grade-point average of 2.5 in the Far Eastern courses is required for a teaching minor.

## FISHERIES

W. F. THOMPSON, *Director*, 2 Fisheries Building

There is required for graduation from the School a grade-point average of 2.5 in fisheries courses and a grade-point average of 2.5 in all other courses.

### 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 72, subject to the approval of the School. At least thirty-nine credits must be completed in fisheries courses for the major.

### Prescribed Curriculum

DEGREE: Bachelor of Science in Fisheries

#### FIRST YEAR*

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| English 1. Composition | 3 | English 2. Composition | 3 | English 3. Composition | 3 |
| Zoology 1. Animal Biology | 5 | Zoology 2. General Zool. | 5 | Zoology 105. Embryology | 5 |
| Chem. 1 or 21. General | 5 | Chem. 2 or 22. General | 5 | Chem. 23. Qual. Analysis | 5 |
| Fish. 108. | 1 | Fish. 109. | 1 | Fish. 110. | 1 |
| P.E. 10 or 15. Health Ed. | 2 | Elective | 2 | Elective | 2 |

#### SECOND YEAR*

| | | | | | |
|---|---|---|---|---|---|
| †German or French | 5 | †German or French | 5 | Zoology or Fisheries (see options A, B, or C) | 5 |
| Zoology or Fisheries (see options A, B, or C) | 5 | Zoology or Fisheries (see options A, B, or C) | 5 | Math. 6, 13, or 33 | 5 |
| Math. 4 or 31. | 5 | Math. 5 or 32. | 5 | Elective | 5 |

* These requirements are listed in the order in which it is recommended that they be taken. They may be postponed and subjects required or permitted in the third and fourth years may be substituted, on approval by the School of Fisheries.

† Any language substitution must be approved by the School of Fisheries.

#### THIRD AND FOURTH YEARS

One of the following options should be chosen, for each of which the following recommendations are made. The School of Fisheries should be consulted for choice of electives and modification of requirements.

All options require Fish. 101, 102, 103, 105, 106, 107, 108, 109, 110, 195, 196, and 197.

Option A. *General Fisheries Biology.* Not less than 39 credits in fisheries and not more than 96 credits in any two departments. Zoology 129 and 130 are recommended to students interested in fresh-water fish and game management.

Option B. *Life History and Conservation.* Fish. 125, 126, 127, 156, 157, and 158; 16 credits of mathematics beyond those specified in the second year.

Option C. *Hatchery Biology, Propagation and Rearing of Fish.* Fish. 150, 151, 152, 153, 154; Chem. 144 or 161-162 (Biological); Bacteriology 101 (General). Fish. 125 or 157 may be substituted for 103.

Option D. *Fisheries Technology.* Consult the School for requirements.

*Recommended Electives.* In options (B) and (C), any fisheries, zoological, or oceanographical course may count as an elective. The following additional electives are recommended: Chem. 109, 110, or 111 (Quantitative Analysis); 131, 132, 133 (Organic); 161-162 (Biological); Math. 13 (Statistics); 41, 42, or 107, 108, 109 (Calculus); Microbiology 101 (General); Physics 1, 2, 3, or 4, 5, 6 (General); Zoology 114 (Comparative), 115 (Cellular); Geology 1 (Survey), or 6 (Physiography), or 7 (Historical); Botany 1, 2, or 3 (Elementary).

## 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 15. Health Ed. | 2 | Elective | 2 | English 3. Composition | 3 |

### SECOND YEAR

| | | | | | |
|---|---|---|---|---|---|
| Chem. 131. Organic | 5 | Chem. 132. Organic | 5 | Chem. 111. Quant. Analysis | 5 |
| Zoology 1. General | 5 | Zoology 2. General | 5 | Microb. 100. Fundamentals | 6 |
| *or* | | *or* | | Elective | 4 |
| Bot. 1. Elementary | 5 | Bot. 2. Elementary | 5 | | |
| *Group Option* | | *Group Option* | | | |
| (a) Math. 4 or 5 | 5 | (a) Math. 5 or 6. | 5 | | |
| (b) H.E. 15. | 5 | (b) H.E. 115. | 3 | | |
| | | Elective | 2 | | |

**THIRD YEAR**

| | | |
|---|---|---|
| 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) Elective ..... 5 | (a) Elective ..... 7 | *Group Option* |
| (b) H.E. 107. Nutrition.. 5 | (b) H.E. 108. Nutrition... 3 | (a) †H.E. 110. Food Prep. 3 |
| | Elective ..... 4 | (b) †H.E. 111. Nutrition.. 3 |

**FOURTH YEAR**

| | | |
|---|---|---|
| Microb. 130. Industrial... 5 | Microb. 131. Industrial... 5 | Microb. 199. Problems... 5 |
| Optional* ..... 5 | Optional* ..... 5 | *Group Option* |
| *Group Option* | *Group Option* | (a) Elective ..... 5 |
| (a) Chem. 121. Industrial 5 | (a) Chem. 122. Industrial 5 | Chem. 123. Industrial 5 |
| (b) Elective ..... 5 | (b) Elective ..... 5 | (b) Elective .....10 |

* 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.

† Offered alternate years.

## GENERAL LITERATURE

ALLEN R. BENHAM, *Executive Officer*, 132 Parrington Hall

DEGREE: Bachelor of Arts

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.

## GENERAL STUDIES

H. B. DENSMORE, *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 senior study 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, Anthropology of the Americas, Art and Ceramics, the Blind in Education, Home Relations, Latin-American Studies, Literature and Society, Music for Radio, Personnel Work, Radio Production and Management, School and Society (for teachers). 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 (Peoples of the World);

Economics 4 (Survey), 131 (Foreign Trade); Geography 7 (Economic), 105 (South America); History 41, 42 (Latin-America and the Caribbean); Political Science 123 (International Relations of the Western Hemisphere); Spanish 101, 102, 103 (Composition and Conversation, Commercial), 104, 105, 106 (Survey); and 12 elective credits in Latin-American literature.

## GEOGRAPHY

HOWARD H. MARTIN, *Executive Officer*, 406 Social Sciences Hall

DEGREE: Bachelor of Arts

### Major in Geography

A major requires 50 credits including Geography 1, 101, 7, or 70; 2; 11 or 111; 102, 103, 104; 105 or 109; 106 or 107. Electives should be approved by the department.

### Major in Meteorology

A major requires 50 credits including Geography 11, 102, 112, 119, 121, 152, 153, 154, 156, and geography electives. Required supporting courses are Physics 1, 2, and 3; Mathematics 4, 5, 6, and 13.

### 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, 101, or 7; 102, 110, 125, 170.

A second minor requires 19 credits including courses 1, 101, or 7; 102, 110, 125.

## GEOLOGY

G. E. GOODSPEED, *Executive Officer*, 114 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 Geology 5 or 105, 6 or 106, 7 or 107 for admission to any courses in geology with a number above 100. A grade-point average of 2.5 in all courses in geology 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. 123. Optical Miner. | 5 | Geol. 100. History of Geol. | 3 |
| Geol. 6. Elem. Physiog. | 5 | Geol. 124. Petrog.-Petrol. | 5 | Geol. 131. Stratig. | 5 |
| Geol. 7. Historical Geology | 5 | Geol. 125. Petrog.-Petrol. | 5 | Geol. 132. Invert. Paleon. | 5 |
| Geol. 121. Mineralogy | 5 | Geol. 142. Structural | 5 | Geol. 112 or 113. Physiog. U. S. | 5 |
| | 20 | | 20 | | 18 |

For those who are interested in stratigraphy or oil geology, the following additional courses are recommended:

| *Third Year* | *Credits* | *Fourth Year* | *Credits* |
|---|---|---|---|
| Geol. 130. Gen. Paleont. | 5 | Geol. 126. Sediment. Petrog. | 5 |
| Geol. 133. Mesozoic Geol. | 5 | Geol. 135. Ammonites | 2 |
| Geol. 134. Tertiary Geol. | 5 | Geol. 143. Advanced Struct. | 3 |
| | 15 | Geol. 144. Field Methods | 5 |
| | | | 15 |

For those who are interested in ore deposits, the following additional courses are recommended:

| *Third Year* | *Credits* | *Fourth Year* | *Credits* |
|---|---|---|---|
| Mining 151. El. Mining | 3 | Geol. 127. Ore Dep. | 5 |
| Met. 101. Fire Assaying | 3 | Geol. 129. Adv. Ore Dep. | 3 |
| Geol. 144. Field Methods | 5 | Geol. 143. Adv. Struct. | 3 |
| | 11 | | 11 |

### 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. Engin. Freshman | 5 | Math. 32. Engin. Freshman | 5 | Math. 33. Engin. Freshman | 5 |
| G.E. 1. Engin. Drawing | 3 | G.E. 2. Engin. Drawing | 3 | G.E. 3. Draft. Problems | 3 |
| English 1. Composition | 3 | English 2. Composition | 3 | G.E. 21. Plane Surveying | 3 |
| | 16 | | 16 | | 16 |

#### SECOND YEAR

| | | | | | |
|---|---|---|---|---|---|
| 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 |
| Zoology 8. Survey | 5 | English 3. Composition | 3 | Geol. 121. Mineralogy | 5 |
| | 15 | P.E. 15 (men) | 2 | | 15 |
| | | | 15 | | |

#### THIRD YEAR

| | | | | | |
|---|---|---|---|---|---|
| Geol. 123. Optical Miner. | 5 | Geol. 124. Petrography | 5 | Geol. 125. Petrography | 5 |
| Geol. 142. Structural Geol. | 5 | Geol. 130. Paleontology | 5 | Geol. 144. Field Methods | 5 |
| Group II Elective | 5 | Geol. 131. Stratigraphy | 3 | Geol. 132. Invertebrate Paleontology | 5 |
| | 15 | Group I Elective | 3 | | 15 |
| | | | 16 | | |

*Summer Field Course*—Geology 200—15 credits

#### FOURTH YEAR

| | | | | | |
|---|---|---|---|---|---|
| Geol. 100. Hist. of Geol. | 3 | Geol. 127. Ore Deposits | 5 | Professional Electives | 10 |
| Group I Elective | 5 | Group I Elective | 2 | Foreign Language | 5 |
| Group II Elective | 3 | Group II Elective | 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 120, 121, 122, and 128; 31 credits must be chosen from the departmental offerings numbered 120 or above. Majors are not permitted to count scientific German, courses in English translation, or the first 18 credits of elementary German.

Students preparing for library work may substitute literary courses in German (not courses offered in translation, however) in lieu of the departmental major requirements, German 120, 121, 122, 128. These latter are demanded of prospective teachers.

### Teaching Major or Minor in the College of Education

For the major the requirements are the same as for the major in the College of Arts and Sciences. For the minor at least 15 credits must be chosen from courses numbered 120 or above, to make a minimum total of 20.

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 Social Sciences Hall

DEGREE: Bachelor of Arts

Majors in history shall offer for the Bachelor of Arts degree 50 credits in history, of which at least 50 per cent must be in upper-division courses. History 1 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, 72-73, 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 nonprofessional curricula are less intensive and permit a wider choice of electives.

A minimum of 20 credits in the humanities and social sciences in addition to the listed requirements are necessary for graduation in all nonprofessional and professional curricula.

### Courses for Students in Other Departments

Recommended electives for nonmajors are: 25, 41, 83, 84, 104, 109, 145; 146 or 147; 181.

*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 Textiles and Clothing Minor*: H.E. 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 take the following: 12, 15, 25, 107-108, 112, 115, 141, 144, 145, 147, 181, 190, and their prerequisites; and additional work approved by the School.

DEGREE: Bachelor of Arts

*Textiles, Clothing, and Art Major.* Required home economics courses include: 12, 25, 112, 113, 114, 133, 144, 145, 147, 181, 188; and at least 6 credits from the following: H.E. 101, 102, 189, 198. In addition 30 credits in art and 10 credits in chemistry are required. Ten credits of upper-division economics may be substituted for 10 credits of art, by those whose major interest is merchandising.

## Professional Curricula

### TEACHER TRAINING FOR VOCATIONAL EDUCATION

DEGREE: Bachelor of Science in Home Economics

In this curriculum a major and one minor are taken 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 2.5 grade-point average.

First Year: Engl. 1, 2, 3; Chem. 3-4 or 5-6; H.E. 7, 12, 15, 25; Psych. 1; Art 9; P.E. 10.

Second Year: Chem. 135-136; H.E. 112, 115, 147; Physics 90 if not taken in high school; Soc. 1; Physiol. 7; Econ. 4; Educ. 1 and 9.

Third Year: H.E. 107-108, 113, 116, 141, 144, 145, 181; Educ. 70, 90, 75NA.

Fourth and Fifth Years: Educ. 30, 60, 71-72, 120; Microb. 101; H.E. 114, 148, 190, 195; Nursery School (2 credits); Nursing 5.

### TEXTILES, CLOTHING, AND ART

DEGREE: Bachelor of Arts in Home Economics

First Year: Engl. 1, 2, 3; Chem. 3-4 or 5-6; Art 5, 6, 9, 10, 11; H.E. 7, 12; P.E. 10.

Second Year: H.E. 25, 147; Hist. 1, 2; Soc. 1; Psych. 1; Econ. 4; Art 51 desirable.

Third Year: H.E. 112, 113, 114, 144, 145; Art 169, 170, 171; Phil. 1.

Fourth Year: H.E. 133, 160, 161, 181, 188, 198.

If the major interest is merchandising instead of designing, 10 additional upper-division credits in economics and business approved by the School may be substituted for some of the art.

### APPAREL DESIGN AND MERCHANDISING

DEGREE: Bachelor of Arts

A curriculum which correlates work in the School of Home Economics, the School of Art, and the College of Economics and Business is offered to qualified students to equip them with the knowledge and skills essential to the designing and merchandising of clothing and textiles. Representatives from the apparel industry will participate in instruction. Practical experience secured by working in stores and factories is required.

*Required home economics courses* (40 credits): 12, 112, 113, 160, 161, Costume Design and Construction; 114, Tailoring; 133, History of Costume; 25, General Textiles; 188, Advanced Textiles; 198, Historic Textiles.

*Required art courses* (22 credits): 9, 10, 11, Design; 129, Design Appreciation; 5, 6, Drawing; 51, Figure Sketching; 169, 170, Costume Design and Illustration.

*Required economics and business courses* (25 or 30 credits): 4, Survey of Economics; 106, Principles of Marketing; 133, Retailing; and 10 to 15 credits from 62, Principles of Accounting; 101, Scientific Management; 135, Advanced Retailing; 138, Marketing Analysis.

*Required additional courses*: Sociology 1; Psychology 1; Philosophy 1; History 1 and 2; Chemistry (General); electives and general University requirements to total 180 credits.

### Institution Administration

Degree: Bachelor of Science in Home Economics

First Year: Engl. 1, 2, 3; H.E. 7, 15, 26; 131 or 12; Chem. 3-4 or 5-6; P.E. 10; Art 9; Psych. 1.

Second Year: Chem. 135, 136; Econ. 1-2; Soc. 1; Physics 90; Zool. 7; H.E. 115, 181, 141, 147.

Third Year: H.E. 107-108, 116, 144, 145, 190; Microb. 101; Nurs. School (2 credits).

Fourth Year: H.E. 121, 122, 123, 124, 148, 191; Educ. 75NB; Chem. 144.

For membership in the American Dietetic Association, the student must follow this curriculum by a year's training in an approved administrative dietitian course.

### Foods, Nutrition, and Home Management

Degree: Bachelor of Science in Home Economics

For the fields 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 40; and journalism (6-11 credits).

*Journalism and Home Economics.* For this field, Journalism 1, 51, 84, and at least 15 credits to be designated by agreement with the Director of the School of Journalism are required.

*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.

*Teacher in Nonvocational School.* With the required courses in education and a second minor, students may qualify for teaching foods, nutrition, and home management in a secondary school.

## JOURNALISM

**H. P. Everest, *Director*, 101 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 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 a member of the School of Journalism faculty before being enrolled in Third-Year Journalism. This will normally take place when the student is in his sixth quarter.

*Transfers.* Students planning to transfer with junior standing from normal schools, junior colleges, or from other universities, must communicate with the Director of the School of Journalism before registering. Rarely will they be permitted to enroll, during their first year on the University of Washington campus, in Third-Year Journalism, which they are advised to take in their graduating year.

Students transferring with less than 90 credits will be held rigidly to the requirements specified in the journalism curriculum. Those with 90 or more credits

may be exempted from certain requirements on application to, and at the discretion of, the Director of the School of Journalism.

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 major in journalism is required to meet the College of Arts and Sciences lower-division requirements and to offer nine 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, or economics. By special arrangement with the head of the department concerned, a student may elect his minor in a field other than these seven 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. 1, 51, 84; Engl. 1, 2, 65; Geog. 70; Psych. 1; Pol. Sci. 1; E.B. 1-2; Hist. 2; Speech 38 or 40; Soc. 1; Physics 10; one additional science course (5 cr.); Physical Education 10 or 15 and an activity course each quarter.

*Third-Year—nonelective.* The required courses are Journ. 147, 148, 149, 150, 151, 152, 153, 154, 181, 182, 183, and Geog. 77.

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 credit as they may have earned. They must then arrange to choose another major.

Third-Year Journalism is divided into two sequences, Advertising and Editorial. Journalism majors should decide as early as possible in the sophomore year which sequence to elect.

Those specializing in advertising and business are required to take Econ. 106, Marketing, and Art 5, Drawing, in lieu of the regular prejournalism requirements of Speech 38 or 40 and Geography 70. They are also urged to take Econ. 57, Business Law. There is no exception to these requirements without the special permission of the Director of the School of Journalism. Econ. 133, Retailing, is required of seniors electing the advertising sequence; Econ. 101, Scientific Management, is strongly recommended.

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.* Two quarters of Journalism 199 (2 credits per quarter) are required. The major and his adviser will determine the schedule of courses.

### Teaching Major or Minor in the College of Education

Major students in the College of Education who have had Journ. 1, 51, and 84 as prerequisites may obtain a major in journalism by completing the work in Third-Year Journalism. An average grade of "B" or better must be earned in all journalism subjects.

Students wishing to minor in Journalism, regardless of major, must include the following courses in their minor: Journ. 1, 51, 84, and 15 credits to be designated by agreement with the Director of the School of Journalism.

## MATHEMATICS

A. F. CARPENTER, *Executive Officer,* 237 Physics Hall

DEGREES: Bachelor of Arts or Bachelor of Science

For a major, forty-two credits are required, including courses 4, 5 or 7, 6, 107, 108, 109, and twelve credits in upper-division electives. Prerequisite: ½ unit advanced algebra, ½ unit solid geometry in high school or university.

DEGREES: Bachelor of Science in Mathematics
Bachelor of Arts in Mathematics

For the degree of Bachelor of Science in Mathematics, fifty credits are required, including courses 4, 5 or 7, 6, 107, 108, 109, and twenty credits in upper-division electives. In addition the following credits must be earned: in physics or chemistry, 15; in astronomy, botany, geology, or zoology, 15; in Groups I and II (see page 72), 15 each. For the degree of Bachelor of Arts in Mathematics, the requirements are the same except that a minimum of 15 credits in science is allowed and the preponderance of the student's free electives shall be from Groups I and II.

DEGREE: Bachelor of Science in Mathematical Statistics

For the degree of Bachelor of Science in Mathematical Statistics, courses 4, 6, 107, 108, 109 and the mathematics courses offered in the Institute of Statistics—~~57~~, 180, 181, 182, 183, 184—are required. The additional requirements are the same as for the degree of Bachelor of Science in Mathematics. Before selecting courses, students should consult staff advisers.

### Teaching Major or Minor in the College of Education

For a teaching major forty-five credits are required, including courses 4, 5 or 7, 6, 107, 108, 109, and fifteen credits in approved electives.

For a teaching minor, courses 4, 5 or 7, 6, and ten credits in approved upper-division electives are required.

Mathematics 11 will not count toward a teaching major or minor. All credits offered in fulfillment of requirements for a major or minor must be gained by grades not lower than "C."

## MUSIC

KATHLEEN MUNRO, *Acting Director,* Music Building

The School of Music offers four curricula for its majors, one nonprofessional and three professional: (1) Elective; (2) Vocal and Instrumental; (3) Composition; (4) Music Education. 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. The University Singers and the Women's Glee Club are open without prerequisites. An ensemble course may be repeated once with credit.

### Admission Requirements

The first two years of the state course of study for high school credits in piano, or the equivalent, are required of all entering music majors. Freshmen deficient in piano may be accepted as premajors in music by demonstrating marked proficiency on other approved instruments. Entrance tests in basic skills will determine the acceptance of a student as a major or a premajor. In theory the major begins with Music 24. Those with inadequate preparation should plan for additional time to complete the degree.

New students will not ordinarily be given advanced credits in music but will substitute other approved courses for those omitted. Students, other than freshmen,

whose training and proficieney in music warrant advanced standing, must make application during their first quarter of residence. In no case will more than 18 credits in vocal or instrumental music be allowed students entering with advanced standing.

### Classification of Courses

I. *Materials and Composition*: 5, 6, 15, 16, Fundamentals; 14, Theory (for nonmajors); 24, 25, 26, First Year Theory; 37, 38, 39, Piano Sight Reading; 101, Advanced Harmony; 99, 163, Counterpoint; 112, 143, Form and Orchestration; 157, 158, 159, 177, 178, 179, Composition.

II. *Music Literature and History*: 21, 22, 23, 44, Appreciation (for nonmajors); 4, Introduction to Music Literature; 132, Haydn, Mozart, and Beethoven; 193, Music History Reading Course; 87, 145, 160, 161, 162, 181, 187, 190, 191, 192, various composers.

III. *Music Education*: 41, 42, 43, 60, 62, Orchestral Instruments; 116, 154, 155, 156, Educ. 75R, School Music; 98, 128, Choral Music; 165, 166, 167, Piano Pedagogy.

IV. *Choral Ensembles*: 10-11-12, 45-46-47, 80-81-82, University Singers; 65-66-67, Women's Glee Club; 121-122-123, Madrigal Singers.

V. *Instrumental Ensembles*: 30, 31, 32, University Band; 90, 91, 92, University Concert Band; 93, 94, 95, University Symphony Orchestra; 124, 125, 126, Chamber Music; 139, Piano.

VI. *Conducting*: 136, 195, Choral Conducting; 180, Orchestral Conducting.

VII. *Vocal and Instrumental Music*: 1, 2, 3, 7, 8, 9 AX & CX, Group Instruction; 1, 2, 3, 7, 8, 9, 18, 19, 20, 48, 49, 50, 68, 69, 70, 118, 119, 120, 148, 149, 150, 168, 169, 170, Individual Instruction; 83, 84, 85, 133, 134, 135, Piano Repertory; 173, 174, 175, Keyboard Transposition and Improvisation; 138, Accompanying; 160, Song Interpretation; 199, Senior Recital; 102, 103, 104, Opera Workshop.

VIII. *Eurhythmics*: 27, 28, 29, First Year; 77, 78, 79, Second Year.

IX. *Graduate Courses*: 200, 210, 211, 212, 221, 222, 223, Musicology; 218, 219, 220, Vocal and Instrumental Instruction; 230, 233, Music Education and Musicology Seminars; 240, 241, 242, Composition; 250, 251, 252, Research and Thesis.

### Elective Curriculum

DEGREE: Bachelor of Arts

In addition to the general requirements of the College of Arts and Sciences (see pages 71-73) fifty-two credits in approved music courses are required. Eighteen of these shall be in Music Literature and History, including 4 and 193; fourteen in Materials and Composition above Music 25; and three in Ensembles.

### Prescribed Curricula

DEGREE: Bachelor of Arts in Music

Three majors are offered with prescribed curricula: I. Vocal or Instrumental Music; II. Composition; III. Music Education.

In addition to the general requirements of the College of Arts and Sciences (see pages 71-73) the following courses are required for all three majors:

| FIRST YEAR | *Credits* |
|---|---|
| Music 4. Intro. to Music Literature | 3 |
| Music 24, 25, 26. First Year Theory | 12 |
| Vocal or Instrumental Music | 6-9 |
| Ensemble | 3 |

| SECOND YEAR | *Credits* |
|---|---|
| *Music 41, 42, 43. Orchestral Instruments Lab. | 4 |
| Music 98. Choral Music I | 2 |
| Music 99. Counterpoint | 5 |
| Vocal and Instrumental Music | 6 |
| Ensemble | 3 |
| Physics 50. Sound | 5 |
| *Education 1 | 2 |

* Special requirement for Music Education majors.

Further requirements for the respective majors are as follows:

### I. Major in Vocal or Instrumental Music

A student must show marked talent for performance before proceeding further. Of the 36 credits required in Vocal or Instrumental Music, 30 must be in the major field (e.g., piano) and 6 in another instrument or in voice. No course below Music 48 may be included in these 30 credits. General requirements for the junior and senior years: Music 101, Advanced Harmony; 112, Forms; 132, Haydn, Mozart, Beethoven; 193, Music History Reading Course; 199, Senior Recital; 36 credits in vocal or instrumental music (4 yrs. total).

Specific requirements in each field are as follows:

A. Piano: Music 27, 28, 29, Eurhythmics; 83, 84, 85, Bach to Early Nineteenth Century; 133, 134, 135, Later Nineteenth Century to Contemporary; 173, 174, 175, Keyboard Transposition and Improvisation; 138, Accompanying; 139, Piano Ensemble; 157 or 163, Composition or Advanced Counterpoint; 124, 125, 126, Chamber Music.

B. Violin: Music 124, 125, 126, Chamber Music; 143, Orchestration; 157, Composition.

C. Voice: Music 160, Song Interpretation; 191, Vocal Literature, Haydn to Debussy; English 57, Poetry; German, 10 credits; French or Italian, 10 credits.

D. Violoncello: See Violin.

E. Organ: Music 136, Choral Conducting; 138, Accompanying; 143, Orchestration; 145, Church Music; 157, Composition; 163, Counterpoint.

### II. Major in Composition

Music 101, Advanced Harmony; 112, Forms; 132, Haydn, Mozart, Beethoven; 136, 180, Conducting; 143, Orchestration; 157, 158, 159, Composers' Laboratory; 163, Advanced Counterpoint; 177, 178, 179, Composers' Laboratory (any two); 190, 192, Literature & History; 193, Music History Reading Course; vocal and instrumental music, 18 credits.

### III. Major in Music Education

Music 112, Forms; 116, Junior High School Music; 128, Choral Music II; 132, Haydn, Mozart, Beethoven; 136, 180, Conducting; 155, Supervision; 156, Instrumental Music in Schools; 193, Music History Reading Course; vocal and instrumental music, 6 credits.

To meet the requirements of the College of Education, see page 105 under Requirements for the Three-Year Secondary Certificate.

### Teaching Major or Minor in the College of Education

For the teaching major the departmental requirements for the first four years are the same as III above, except that Music 43, 112, 128, 156, 180, and 6 credits in vocal and instrumental study, totaling 20 credits, may be counted as one of the teaching minors. As a prerequisite to cadet teaching proficiency in both piano and voice must be demonstrated not later than the junior year.

Majors in other departments are offered the choice of three music minors, each requiring Education 75R, Senior High School Music; and specifically:

A. Vocal Music: Music 25, Harmony; 98, 128, Choral Music; 136, 195, Choral Conducting; six credits in vocal music beginning with 48C, totaling 22 credits.

B. Instrumental Music: Music 41, 42, 43, Orchestral Instruments Laboratory (repeated); 25, Harmony; 98, Choral Music; 136, 180, Conducting; six credits in instrumental music beginning with 48C, totaling 24 credits.

C. Music Theory: 25, 26, Harmony; 98, Choral Music; 99, Counterpoint; 136, 180, Conducting; six credits in vocal or instrumental music, totaling 29 credits.

## PHILOSOPHY

EVERETT J. NELSON, *Acting Executive Officer,* 266 Philosophy 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*
MARY GROSS HUTCHINSON, *Executive Officer for Women*
105 Women's Physical Education Building
R. E. BELSHAW, *Acting Executive Officer for Men,* 210 Men's 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) prephysiotherapy (for women).

### Lower-Division Requirements for All Major Curricula

*Required*: Zoology 1, 2, 7, 16, 17, Chemistry 1-2 (except for men in Curr. B) or one unit of high school chemistry, English 1, 2, 3, Sociology 1, Psychology 1, Speech 40, Anatomy 103.

*Additional for Women*: Physical Education 10, 11, 12, 13, 14, 51, 52, 53, 75, 85, 87.

*Additional for Men*: Physical Education 7, 8, 9, 10, 11, 12.

### Major Requirements

**A. Physical Education Major:**

*Required*: Physical Education 102, 115, 116, 145, 165.

*Additional for Women*: Physical Education 111, 112, 118, 128, 156, 162, 163, 164.

*Additional for Men*: Physical Education 107, 109, 150; and 6 credits from 170, 171, 172, 173.

**B. Recreational Leadership Major:**

*Required*: Physical Education 102, 116, 124, 126, 128, 145.

*Required Related Courses*: Art 100, Librarianship 252, 5 credits from Drama 106, 107, 108, 109, Forestry 6, 156, Music 22, 23, 24, and 13 credits from sociology.

*Additional for Women*: Physical Education 101, 111, 112, 115, 118, 156, 162, 163, 164, 165.

*Additional for Men*: Physical Education, 109, 150.

**C. Prephysiotherapy Major (For Women):**

*Required*: Physical Education 101, 102, 111, 112, 115, 116, 118, 122, 145, 156, 162, 163, 164, 165.

*Required Related Courses*: Physics 70, Psychology 2, 131.

### Majors and Minors for the Teaching Certificate

**D. Physical Education Major:**

*Required*: Physical Education 102, 115, 116, 122, 127, 145, 150.

*Additional for Women*: Physical Education 101, 111, 112, 118, 128, 156, 162, 163, 164, and 3 credits in physical education electives.

*Additional for Men*: Physical Education 107, 109, 124, 135, 164, 193, and 6 credits from Physical Education 170, 171, 172, 173.

If not accompanied by health education minor, add Physical Education 153, 165, Home Economics 104.

**E. Health Education Major:**

Not offered in 1947-1948.

**F. Physical Education Minor:**

*Required*: Physical Education 116, 145, 150.

*Required Related Course*: Zoology 7.

*Additional for Women*: Physical Education 11, 12, 13, 109, 112, 153, 163, 165; and 3 credits from physical education electives.

*Additional for Men*: Physical Education 7, 8, 9, 10, 11, 12, or equivalent; 193; 4 credits from 170, 171, 172, 173; and 158, 161, 163.

**G. Health Education Minor:**

*Required*: Physical Education 153, 165.

*Required Related Courses*: Zoology 7, 17, Microbiology 103, Public Health 121, Home Economics 104; and 3 credits from sociology or Graduate School of Social Work.

If taken with a major other than physical education add, for women: Physical Education 116, 145, and Zoology 1-2; for men: Physical Education 107.

## PHYSICS

CLINTON L. UTTERBACK, *Executive Officer*, 206 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 Qtr.* | *Winter Qtr.* | *Spring Qtr.* | |
|---|---|---|---|---|
| English | 1 | 2 | 3 | Composition |
| Mathematics | 4 | 5 | 6 | {Trig., Alg., {An. Geom. |
| Physics | 1 | 2 | 3 | General |
| P.E. | .. | 10 or 15 | .. | Health Ed. |

**SECOND YEAR**

| | *Autumn Qtr.* | *Winter Qtr.* | *Spring Qtr.* | |
|---|---|---|---|---|
| Chemistry | 1, 21 | 2, 22 | 23 | General |
| Mathematics | 107 | 108 | 109 | Calculus |
| Physics | 101 | 102 | .. | Int. Mod. Phys. |
| Physics | .. | .. | 150 | Heat |
| Physics | 105 | 106 | .. | Elec. & Mag. |
| Electives | .. | .. | .. | x |

**THIRD YEAR**

| | | | | |
|---|---|---|---|---|
| Mathematics | 114 | 115 | 116 | Diff. Equa. |
| Chemistry | 111 | .. | .. | Quant. |
| Physics | .. | .. | 185 | Nuclear Phys. |
| Physics | 160 | 161 | .. | Optics |
| Physics | .. | .. | 154 | High Freq. |
| Physics | .. | 140 | .. | Sound |
| Mech. Engin. | .. | 55 | .. | Shop |
| Electives | .. | x | x | x |

**FOURTH YEAR**

| | | | | |
|---|---|---|---|---|
| Physics | 191 | 192 | .. | Theo. Mech. |
| Physics | .. | 195 | 196 | Exper. Atomic |
| Physics | 180 | .. | .. | Hist. Phys. |
| Chemistry | 181 | 182 | 183 | Physical |
| Electives | x | x | x | |

x Electives should include French or German.

### 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."

## POLITICAL SCIENCE

CHARLES E. MARTIN, *Executive Officer,* 206A Social Sciences 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 1 and 2; 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 107, 131, 132, and 187; 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 1-2 and 62, 63; Economics 60 or Mathematics 13; Psychology 1 and History 7. Remaining courses should be selected in consultation with the adviser, to satisfy the group requirements of the College of Arts and Sciences, to build an elementary foundation for advanced courses in the social sciences, and to develop an ability for self-expression.

*Third and Fourth Years.* During these years the student should select:

1. Basic Political Science: Political Science 112, 127, 145, 153, and 161.
2. Public Administration: Political Science 154, 155, 162, 163, 167, and 168.
3. Economics: Economics 171, 172, and 187.
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, and 163.

## PRE-EDUCATION

FRANCIS F. POWERS, *Executive Officer*, 114 Education Hall

(See College of Education section, page 104, for detailed information.)

*Pre-education Students.* During the freshman year, students who expect to teach register as pre-education freshmen in the College of Arts and Sciences and pursue the regular courses of this college. They must confer in this year with the 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

DAVID THOMSON, *Adviser*, 203 Denny Hall

*General.* The minimum requirements for admission to the Law School appear on page 121. A student planning to meet those requirements in the College of Arts and Sciences will register under the supervision of the prelaw adviser.

*Combined Arts-Law Curriculum with a Major in Law.* This curriculum requires that the student earn 138 credits in the College of Arts and Sciences together with the required credits in physical education activity courses, and that he satisfy the regular requirements of the College. See pages 71-73. Of the 138 credits 25 must be in a special field and 20 in a related secondary field; 28 must be in upper-division courses. On fulfilling these requirements with a grade-point average of at least 2.5, the student may enter the School of Law and will be granted the Bachelor of Arts degree when he has earned 42 credits in Law.

*Combined Curriculum in Science and Law with a Major in Law.* The requirements are the same as in the Arts-Law curriculum above, except that, instead of 25 credits in a special field and 20 in a related secondary field, a major in some department is required. The degree granted is Bachelor of Science.

*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.

## 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 his special interests 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.

For admission requirements of the school, see page 122.

# PREMEDICINE, PREDENTISTRY, AND BASIC MEDICAL SCIENCE

**Office of the Dean, 121 Education Hall**

## PREMEDICINE

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 curiculum 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. 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 15 | 2 | Elective | 2 | Psychology 1 | 5 |
| | 15 | | 15 | | 18 |

#### SECOND YEAR

| | | | | | |
|---|---|---|---|---|---|
| Chemistry 131 | 5 | Chemistry 132 | 5 | Lit. 67 or 72 | 3 |
| †Physics 1 or 4 | 5 | †Physics 2 or 5 | 5 | †Physics 3 or 6 | 5 |
| Elective | 5 | Elective | 5 | Elective | 7 |
| | 15 | | 15 | | 15 |

#### THIRD YEAR

| | | | | | |
|---|---|---|---|---|---|
| Chemistry 111 | 5 | Foreign Lang. *or* Elective | 5 | Foreign Lang. *or* Elective | 5 |
| Foreign Lang. *or* Elective | 5 | Elective | 5 | Elective | 5 |
| Zoology 105. [illegible] | 5 | Zoology 127 [illegible] | 5 | Zoology 128. [illegible] | 5 |
| | 15 | | 15 | | 15 |

## 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 15 | 2 | Elective | 2 | Elective | 2 |
| | 15 | | 15 | | 15 |

#### SECOND YEAR

| | | | | | |
|---|---|---|---|---|---|
| Zool. 105. | 5 | Chem. 131. | 5 | †Physics 3 or 6 | 5 |
| †Physics 1 or 4 | 5 | †Physics 2 or 5 | 5 | Chem. 132. | 5 |
| Elective | 5 | Elective | 5 | Elective | 5 |
| | 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.

### Basic Medical Science

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 premedical 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 shall have spent at least two years (of which one year must be the third undergraduate year) of his premedical or medical work in full residence at the University of Washington, and shall present an over-all grade-point average of 2.5 or above, including the work at medical school.

Credit in subjects taught in the first year's curriculum of any Class A medical school, as rated by the A. M. A. (or dental school associated with any Class A Medical school), 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 and dental 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.

## PRENURSING

Elizabeth Sterling Soule, *Adviser,* 1 Nursing Building

Students planning to enter the School of Nursing are required to complete six quarters (90 credits of academic work) in the College of Arts and Sciences. Required courses include: English 1, 2, 3 (9 credits); Chemistry 3-4 or 5-6, 135, 136 (16 credits); Psychology 1 (5 credits); Sociology 1 (5 credits); Microbiology 101, 102 (10 credits); Home Economics 9 (5 credits); P.E. 10 (2 credits).

Throughout the prenursing program all students should confer with their faculty adviser in the School of Nursing for assistance in preparing for their professional work.

Students who desire to enter this School of Nursing and who wish to take prenursing courses in another educational institution should write to the Dean of the School of Nursing for advice in planning their programs.

For information regarding curricula in the School of Nursing, see page 128.

## PRE-SOCIAL WORK

Grace B. Ferguson, *Adviser,* 300F Commerce Hall

For detailed information, see page 146; 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 with the equivalent of a "B" average.

## PSYCHOLOGY

STEVENSON SMITH, *Executive Officer,* 338 Philosophy 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.

### Teaching Minor in the College of Education

Students who wish to offer a teaching minor in psychology must have Psych. 1 and 2, and eight credits elected from Psych. 51, 108, 111, 112, 116, 118, 121, 123, 124, 126, 135, 140—a total of eighteen credits.

## RADIO EDUCATION

EDWIN H. ADAMS, *Executive Officer,* 7 Veterans Guidance Center

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, involving the several areas of specialization and leading to the degree of Bachelor of Arts, is available through the Department of General Studies (see page 81).

Those wishing to specialize in radio drama, radio education, radio engineering, radio journalism, or radio speech should consult the department concerned (Drama, Education, Electrical Engineering, Journalism, Speech).

## ROMANIC 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 42[1] credits, namely courses 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 42[1] credits, namely courses 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 30 credits in courses above French 4 or Spanish 4.

[1] Beyond course 4 or two high school years. A third high school year replaces courses 5, 6; a fourth high school year usually 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.

## SCANDINAVIAN LANGUAGES AND LITERATURE

### (Swedish, Norwegian, and Danish)

EDWIN J. VICKNER, *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: Recent 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: Recent Swedish Writers *or* special work in Norwegian or Danish literature.

## SOCIOLOGY

GEORGE A. LUNDBERG, *Executive Officer*, 104 Social Sciences Hall

DEGREE: Bachelor of Arts

Students should read the departmental leaflet and consult staff advisers before selecting courses.

Majors must maintain a general grade-point average of 2.0 and a 2.5 average in sociology courses; they must offer 36 credits, including courses 1 or 100, 31, 55 or 155, and 60.

### 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.

## SPEECH

FREDERICK W. ORR, *Executive Officer*, 201 Parrington Hall

DEGREE: Bachelor of Arts

A major must offer 44 credits, including Speech 1-2, 40, 43, 186, 10 to 12 additional lower-division credits, and 15 upper-division credits.

For a minor 30 credits are required, including Speech 40, 43, 186, five additional lower-division credits, and ten additional upper-division credits.

### Teaching Major or Minor in the College of Education

Speech 40 and 43 are prerequisite to all work for the secondary certificate with a major or a minor in speech.

Other required courses:

For a major: Speech 38, 61, 62, 79, 186, 190, Education 75X; approved electives, 13 credits.

For first minor: Speech 79, 186, 190; approved electives, 9 credits.

For second minor: Speech 186; approved electives, 5 credits.

## ZOOLOGY

ARTHUR SVIHLA, *Executive Officer*, 234 Johnson Hall

Students who plan to fulfill the requirements for admission to Medical School while majoring in zoology should also consult the premedical curriculum. Students planning to work for master's and doctor's degrees should note the foreign language requirements for these degrees and complete the basic language work as early as possible. An overall grade-point average of 2.5, as well as a 2.5 average in zoology courses, will be required for graduation in this department.

### Elective Curriculum

DEGREE: Bachelor of Science

A minimum of 36 credits in approved courses in zoology and satisfaction of the group requirements of the College are necessary for graduation. Zoology 1 and 2, 105 or 127-128, and a year of college chemistry will be required of students working for this degree. A second year of chemistry, a year of physics, and a reading knowledge of one foreign language are highly recommended.

### Prescribed Curriculum

DEGREE: Bachelor of Science in Zoology

Fourteen additional upper-division credits in zoology beyond the 36 credits set forth in the elective curriculum will be required for graduation with this degree. Botany 108 and Fisheries 101, 102, 103 will count toward this degree.

### Teaching Major or Minor in Zoology in the College of Education

A major requires 36 credits, including Zoology 1 and 2.

A minor requires 25 credits, including the courses enumerated above as well as additional upper-division courses, such as Zoology 108, 111, 129, or 130.

## SCHOOL OF DENTISTRY

ERNEST M. JONES, *Dean*, 200-A Bagley Hall

The School of Dentistry was established on the University campus with the acceptance of its first class in October 1946. Additional freshman classes will be admitted in October 1947, 1948, and 1949. The School will then have in operation a four-year program which will prepare students for the practice of dentistry in conformity with the educational requirements set forth by the Council on Dental Education of the American Dental Association. However, in order to be admitted to the practice of dentistry in the State of Washington, or in any other state, the candidate must pass a state dental examination and must comply with any other requirements of the state in which he wishes to practice.

### Admission

The Committee on Admissions, in accord with the Council on Dental Education of the American Dental Association, has specified the following minimum requirements for admission to the School of Dentistry: two full years of academic work in an accredited college of liberal arts and sciences. This must include at least a year's credit in English, in biology, in physics, in inorganic chemistry, and a half year's credit in organic chemistry.

Course work at least equivalent to the following (from the University of Washington Catalogue) must have been satisfactorily completed by all applicants:

| *Subject* | *Credits** |
|---|---|
| English: | |
| English 1, 2, 3 (Composition) | 9 |
| Biology: | |
| Zoology 1, 2 (General Zoology) | 10 |
| Zoology 105 (General Vertebrate Embryology) | 5 |
| *or* | |
| Zoology 127, 128 (Comparative Anatomy) | 10 |
| Chemistry: | |
| General Chemistry 1-2 (for students without high school chemistry) | |
| *or* | |
| General Chemistry 21-22 (for students who have completed a year of high school chemistry) | 10 |
| Chemistry 23 (Qualitative Analysis) | 5 |
| Chemistry 131, 132 (Organic Chemistry) | 10 |
| Physics: | |
| General Physics 1, 2, 3 | |
| *or* | |
| General Physics 4, 5, 6 | 15 |

Elective courses which the Committee on Admissions of the School of Dentistry recommends include such subjects as laboratory drawing, sculpturing, literature, speech, psychology, sociology, economics, anthropology, modern foreign languages, botany, eugenics, cellular physiology, and microscopic technique.

### Applications

Applications and all 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 of the School of Dentistry.

* One University credit is given for one hour of recitation a week throughout one quarter. A quarter consists of approximately 11 weeks.

1. Formal application for admission on the form furnished by the University of Washington.

2. An official transcript of previous college record (must be 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 at the University of Washington). This transcript should show: (a) the complete college record with grades and credit hours; (b) subjects the applicant is taking or will take to complete his preprofessional training prior to registration in the School of Dentistry.

3. Two unmounted recent photographs (2 x 3 inches).

4. Two letters of recommendation, one from a science and the other from a nonscience instructor.

The Committee on Admissions will inform applicants regarding aptitude tests which will be conducted prior to admission to the School of Dentistry.

The Bulletin of the School of Dentistry will be sent to those who request it.

# COLLEGE OF ECONOMICS AND BUSINESS

HOWARD H. PRESTON, *Dean*, 210 Commerce Hall

For detailed information concerning University fees, expenses, and admission requirements, see pages 51-60. In addition to the all-University entrance requirements, the College of Economics and Business requires one unit* each of U. S. history and civics, elementary algebra, plane geometry or advanced algebra.

Inquiries in regard to the College of Economics and Business should be addressed to the Dean. All correspondence regarding admission should be sent to the Registrar of the University.

*Fellowships, Scholarships, Prizes.* See pages 69-70.

## Requirements for Graduation

Graduates of the College of Economics and Business receive the degree of bachelor of arts in economics and business. The following summarizes the requirements for this degree:

1. Students must satisfy the entrance requirements of the University and the College of Economics and Business. Students entering from other colleges, either from this University or other institutions, with junior standing, who have met the lower-division requirements of their former college must either present or make up the following courses to meet the minimum lower-division requirements of this college: E.B. 1-2, 54, 55, 60, 62, 63.

2. The student must earn 180 credits in subjects required by the University and required or approved by the faculty of the college. In addition, men must meet the general University requirement of Physical Education 15 *and* six quarters of physical education activities; women must have six quarters of physical education activities, plus Physical Education 10.

3. A minimum of sixty credits in upper-division courses, exclusive of those earned in Army and Navy R.O.T.C. subjects, shall be a requirement for graduation.

4. No more than 18 quarter credits in advanced Army and Navy subjects may be applied towards 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 Economics and Business will depend upon the student's demonstration of general fitness for work in that college, including the maintenance of satisfactory academic performance. See Scholarship Rules, page 62. The same rules apply to a major in economics in the College of Arts and Sciences.

* 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.

## Lower-Division Requirements

### FIRST YEAR

| | Credits |
|---|---|
| E.B. 1-2. Principles of Economics | 10 |
| Geography 7. Economic Geography | 5 |
| English Composition 1, 2, 3 | 9 |
| An approved laboratory science (10 credits), or mathematics (10 credits), or foreign language (10 credits) | 10 |
| P.E. 10 or 15. Personal and Community Health | 2 |
| *Approved Electives | 9 |
| | 45 |

### SECOND YEAR

| | Credits |
|---|---|
| †E.B. 54, 55. Business Law | 10 |
| E.B. 60. Statistical Analysis | 5 |
| E.B. 62, 63. Principles of Accounting | 10 |
| History 7. Survey of U.S. History | 5 |
| ‡Approved Electives | 15 |
| | 45 |

* If E.B. 6, Development of Economic Institutions, 5 credits, is elected, History 7 will not be required in the sophomore year.

† E.B. 55 is required in certain majors; a student in other majors, upon consultation with his adviser, may substitute an approved elective for this course.

‡ Of the approved electives, 10 credits must be selected from political science, sociology, psychology, and philosophy.

## Upper-Division Requirements

In the upper-division years the student, with the approval of his major adviser, shall select 6 of the following courses:

| | Credits | | Credits |
|---|---|---|---|
| E.B. 103. Money and Banking | 5 | E.B. 107. World Economic Policies | 5 |
| E.B. 104. Principles of Transportation | 5 | E.B. 121. Corporation Finance | 5 |
| E.B. 105. Economics of Labor | 5 | E.B. 171. Public Finance and Taxation I. | 5 |
| E.B. 106. Economics of Marketing and Advertising | 5 | E.B. 175. Business Fluctuations | 5 |
| | | E.B. 185. Advanced Economic Theory | 5 |

Each student in the college must also complete an approved sequence of at least 15 credits in upper-division courses in economics and business.

## Suggestions for Planning Courses

The choice of a special field of major interest will determine the student's faculty adviser. In consultation with this adviser, the student will elect the upper-division courses which best meet his needs.

At the time of registration the student's program must be approved by the registration secretary for the College of Economics and Business, who will enforce all requirements together with the course prerequisites as stated in this bulletin.

For certain major fields, as set forth below, appropriate courses (indicated by parentheses) from the above list of upper-division requirements must be selected as background courses. The requirement for the field of specialization is at least 15 credits in upper-division courses in addition to six of the above nine courses.

The required courses in the fields of specialization are as follows:

1. Accounting*: E.B. 110, 111, 112, 154, 156, 157, 158.
2. Banking and Finance: (E.B. 103, 121), 18 or more credits approved by the adviser from the following: E.B. 122, 123, 125, 126, 127.
3. Economics: (E.B. 185), E.B. 187, plus 10 additional credits in economics approved by the adviser.
4. Economic Geography: Geog. 102, 103, 104, 105 or 109, and 106 or 107.
5. Foreign Trade and Consular Service: (E.B. 107), 15 or more credits approved by the adviser from the following: E.B. 127, 130, 131, 132.
6. General Business: 20 credits of approved upper-division courses in E.B., not more than 10 hours of which may be in any one of the fields of specialization.
7. Insurance: E.B. 108, 128, 129.
8. Labor: (E.B. 105), E.B. 161, 164, plus 5 recommended credits.
9. Management:
   Industrial: E. B. 101, 150, 151, 154; Psych. 21 or 2.
   Personnel: E.B. 101, 105, 167; Psych. 2, 123.

* Professional accounting majors are also required to take E.B. 178. The professional accounting course, with the addition of E.B. 101, is recommended as preparation for the position of controller in business.

10. Marketing: (E.B. 106)
    General Marketing: E.B. 133, 134, 138, 139; 193A, B, C.
    Retailing: E.B. 133, 134, 135, 138, 139; 193A, B, C.; Home Econ. 25.
    Advertising: E.B. 133, 134, 136, 138, 139; 193A, B, C.
11. Public Finance: (E.B. 171), 172, 196, plus 5 recommended credits.
12. Public Utilities: E.B. 141, 142, 196, plus 5 recommended credits.
13. Real Estate: E.B. 109, 169; 199B.
14. Secretarial Training: E.B. 115, 116, 117, 118, 167; Engl. 60.
15. Transportation: (E.B. 104), E.B. 148, and three courses from E.B. 143, 144, 145, 146.
    Air: E.B. 146, 140, 147; and one course from E.B. 148, 150, Geog. 112, Aeronautical Engineering 100, 101.
    Water: E.B. 144, 149; two courses from E.B. 131, 148, 150, N.S. 101, 102; and choice of Geography 102 through 109.

### Commercial Teaching

Required:

(a) Satisfaction of the lower-division requirements as outlined on page 101.

(b) E.B. 12-13-14, Typewriting and Shorthand, and E.B. 16-17-18, Secretarial Training, 12 credits. This requirement may be satisfied in either lower or upper division, or by passing a satisfactory examination. In case of exemption by examination, University credit is not given.

(c) Fifteen credits of the upper-division general requirements in economics and business, including E.B. 106.

(d) The special requirements in the upper division must include E.B. 115, 116, 117, and 118.

(e) Thirty-three credits of education courses, including Educ. 75E and Educ. 75F. See College of Education section, page 104.

NOTE: A teaching major and two teaching minors in commercial education have been provided also in the College of Education. See page 106.

### Prelaw and Combined Law and Business Curriculum

S. D. BROWN, *Adviser*, 252 Philosophy Hall

*General.* The minimum requirements for admission to the School of Law appear on page 121. A student planning to meet these requirements in the College of Economics and Business will register under the supervision of the prelaw adviser.

*Three-Year Combined Economics and Business and Law Curriculum with a Major in Law.* This curriculum requires that the student earn 138 economics and business credits, together with the required credits in physical education, and that he complete all the required lower- and upper-division courses of the College. On fulfilling these requirements with a grade-point average of at least 2.5, the student may enter the School of Law and will be granted the bachelor of arts degree in economics and business when he has earned 42 credits in Law.

*Two-Year Prelaw Curriculum in the College of Economics and Business.* The curriculum presupposes only two years of prelaw work. When combined with the lower-division requirements of the College of Economics and Business, it is possible to satisfy the general requirements of the School of Law and also those of the College of Economics and Business. At the end of two years, a student may enter the School of Law. Should he choose to proceed in the College of Economics and Business, he may do so without loss of substantial credits, provided the second curriculum has also been followed. There would remain only the one requirement of Business Law. Should the student not desire to satisfy the lower-division requirements of both curricula, additional hours of electives may be arranged, with the approval of the adviser.

A grade-point average of at least 2.5 is required for admission into the School of Law.

PRELAW REQUIREMENTS

| | Credits |
|---|---|
| English 1, 2, 3 | 9 |
| Philosophy 1, 5 | 10 |
| Political Science 1, 52 | 10 |
| History 5, 6, 106 | 15 |
| Economics & Business 1-2 | 10 |
| | 54 |

ADDITIONAL LOWER-DIVISION REQUIREMENTS OF THE COLLEGE OF ECONOMICS AND BUSINESS

| | Credits |
|---|---|
| Economics & Business 62, 63 | 10 |
| Economics & Business 60 | 5 |
| Geography 7 | 5 |
| Mathematics, Approved Laboratory Science, or Foreign Language | 10 |
| Elective | 6 |
| | 36 |

*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 credits approved by the College of Economics and Business before entering the Law School. This privilege will not be granted 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.

## Curriculum for Government Service

JAMES K. HALL, *Adviser,* 318 Philosophy Hall

The College of Economics and Business, in cooperation with the Department of Political Science, the School of Law, and the Graduate School of Social Work, has outlined a curriculum to meet the growing need for trained men and women in governmental 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 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"). A student may be registered in either the College of Economics and Business or the College of Arts and Sciences with a major in the field of government service. The senior and graduate years are under the direction of the department selected by the student, in accordance with his major interest.

At the end of the fourth year a bachelor of arts degree in economics and business will be awarded; or, if the student is registered in the College of Arts and Sciences, a bachelor of arts degree in economics, political science, or sociology 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 work done in the fifth year may be applied toward a master's degree, and those who have met all of the requirements for that degree by the end of the fifth year will receive it at that time.

The following outline indicates the courses for each year of the curriculum.

### First and Second Year

English 1, 2, 3, and a choice of Speech 40 or English 72 and 73; Sociology 1 or 100 and 60; Political Science 1, 52, 58; History 7 or five credits of other approved history; Psychology 1; Economics and Business 1-2 and 62, plus a choice of five credits from the following courses: E.B. 60, Math. 13, Soc. 31, Psych. 108.

### Third Year

E.B. 103, 105, 171, plus a choice of five credits from E.B. 170, Soc. 132, Psych. 109, Political Science 155, 163, plus a choice of five credits from Pol. Sci. 153, 167, 151, or 112; Psych. 118; Sociology 162.

### Fourth and Fifth Years

In the fourth and fifth years an adviser plans with the individual student a program suited to his objectives. The adviser will in effect be the major professor in whose field the student will concentrate; the field may be accounting, economics, international relations, labor, law, political theory and jurisprudence, politics and administration, social work, or taxation.

Constitutional Law 119 is required in the fourth or fifth year. The remainder of the curriculum for these two years will be drawn up by the adviser in collaboration with the student. The courses selected will then become the requirements for graduation.

### Advanced Degrees

For requirements for advanced degrees, see Graduate School section, page 132.

### Announcement of Courses

For announcement of courses offered by the College of Economics and Business, see page 156.

## COLLEGE OF EDUCATION

FRANCIS F. POWERS, *Dean*, 114 Education Hall

*General Plan.* During the freshman year, students who have decided to enter the teaching profession register as pre-Education majors in the College of Arts and Sciences. They should confer with the advisory officers in the College of Education for admission to this college as sophomores.

The degrees granted by the College of Education are the bachelor of arts when the major subject is in Group I or II, and the bachelor of science when the major subject is in Group III. Upon earning a total of 225 quarter credits, including the requirements given below, and a degree from the University of Washington, students may be granted a Three-Year Secondary Certificate which entitles the holder to teach in accredited junior or senior high schools in the State of Washington. 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.

Before registering for their first course in Education, students must consult an adviser in the Department of Education. *Registration in all Education courses for all purposes must be approved through the office of the Dean of the College of Education.*

The professional work in teacher-training begins with Education 1, which is required of all students certifying through the University who have attended nine quarters or more. Education 1 should be taken during the sophomore year as a grade-point is not established before then and credit is not offered for the course after that year. The professional courses in Education for the teaching certificate must be distributed throughout the junior, senior, and fifth years, as an effort to crowd these courses results in numerous conflicts.

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 pages 69-70.

### Requirements for Graduation

During the first two years the candidate must meet certain group requirements as outlined on page 72 of the Arts and Sciences section. At any time after the freshman year a student may enter the College of Education if he has maintained a 2.5 grade average. This change of college does not alter the academic major or degree.

*Specific requirements for graduation:*

1. *English 1, 2, and 3; Physical Education 10 or 15.* These requirements are the same as for the College of Arts and Sciences as listed on page 71.

2. *Major subject.* Each student must have a major field selected from one of the areas listed in section 6 of "Requirements for the Three-Year Secondary Certificate." The office of the Dean of the College of Education will help the student choose teaching combinations which are in demand. College of Education candidates for the bachelor's degree must satisfy all the graduation requirements listed by the departments in the College of Arts and Sciences except for a high school foreign language deficiency.

3. *Foreign language.* Students graduating from the College of Education may substitute twenty credits in General Literature and English for an entrance deficiency in a foreign language. The substituted credits must be in addition to the regular graduation requirement of English 1, 2, and 3 (Composition).

4. *Education courses.* A minimum of nine credits of Education are required for graduation from the College of Education. A cumulative grade-point average of at least 2.5 must be maintained for all professional courses in Education which are required for the teaching certificate.

5. *Upper-division courses.* At least 60 credits in upper-division courses, exclusive of those earned in advanced Army or Navy subjects, are required for graduation.

6. *Application.* An application for the bachelor's degree should be on file not later than the beginning of the senior year.

## 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 the Three-Year Secondary Certificate

The University Three-Year Secondary Certificate, based on a degree from the University of Washington, 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 this institution.

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 fifteen. These courses must be approved by the College of Education.

4. Earn a minimum of twenty-eight credits in Education (twenty-six if student takes Education 1 for no credit) 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 Secondary Education | 3 |
| 70 | General Methods | 5 |
| 90 | Measurement in Secondary Education | 2 |
| 75 | Special Methods | 2 |
| 30 | Washington State Manual | 0 |
| 71-72 | Cadet Teaching | 8 |
| 60 | Principles of Secondary Education | 3 |
| 120 | Educational Sociology, *or approved substitute* | 3 |
| | | 28 |

5. Earn the following grades:
   (a) An all-University grade-point average of 2.5 or better.
   (b) "C" average or better in all Education courses; with "C" or better in Education 71-72, Cadet Teaching.
   (c) "C" average or better in the major and minor teaching subjects, and in contemporary social problems.

6. Present (a) a teaching major, minimum of thirty-six credits; and (b) two teaching minors, minimum of eighteen 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 Teaching, Drama, Economics, English, Far Eastern, French, Geography, Geology, German, Health Education, History, Home Economics, Industrial Arts, Journalism, Latin, Mathematics, Music, Physical Education for Men, Physical Education for Women, Physics, Physiology, 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 eighteen 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.* For a major the student must offer sixty credits including the following courses: Microbiology 101; Botany 1, 2, 3, 25, 75, and 108; Zoology 1, 2, 7, 105, 127, and 128.

*Civics.* For a major a student must offer forty credits including Political Science 1, 101, 163; Economics and Business 4; Sociology 1; plus thirteen elective credits in Political Science and five credits in Economics or Sociology.

For a minor a student must offer twenty-five credits including Political Science 1, 101; Economics and Business 4, or Sociology 1; plus thirteen elective credits in Political Science.

*Commercial Teaching.* Students may prepare for teaching positions in commercial departments in secondary schools by following the program given below.

Students majoring or taking their first minor in commercial education are required to take Economics and Business 1-2, or 4, in partial fulfillment of the requirement of fifteen credits in courses dealing with contemporary social problems. For the teaching major or minors students must include Economics and Business 12, 13, 14 in their programs unless comparable credit has been earned elsewhere and approved by the College of Economics and Business. In addition, the following Economics and Business courses are required: for a major, 16, 17, 18, 54, 62, 63, 106, 115, 116, 117, 118 (forty-nine credits), plus Education 75E and 75F; for a first minor, 16, 17, 18, 62, 63, 106 (twenty-four credits), plus Education 75E or 75F; for a second minor, 16, 17, 18, 62, 63 (nineteen credits). Students who have had work equivalent to Economics and Business 16, 17, 18 may substitute other *approved* courses in Economics and Business to complete the total number of required credits in this field. Teaching minors should select courses from the teaching major requirements as listed above when such a substitution has been approved.

*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. Eighteen credits are required for a minor and thirty-six 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 fifth year.

### Requirements for Teacher-Librarians

(For curricula in the School of Librarianship, see page 122.)

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 Department of Public Instruction at Olympia, Washington.

### Renewal of Three-Year Secondary Certificates

Renewal of the University Three-Year Secondary Certificate must be made through the State Department of Public Instruction at Olympia some time before the expiration date of the original certificate, since a *lapsed certificate may be reinstated only upon the 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 nine credits of Education at the University.

*Certification requirements for graduate transfer students:*

Students who have been graduated from institutions within the State of Washington may certify for secondary teaching through the University after they secure a bachelor's or a master's degree from the University.

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. Transfer students cannot take Education 1 for credit after the beginning of the junior year. However, it must be taken on a noncredit basis by all applicants for this certificate who have attended the University for nine quarters or more if they have not taken an equivalent course. 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 2.5 requirement.

It is necessary for a transfer student to earn nine credits in Education courses, ten credits in the academic major, and five credits in each academic minor at the University of Washington.

Students who are out-of-state graduates must 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 Appointments

A Bureau of Appointments is maintained to assist qualified students and graduates in obtaining teaching and administrative positions. 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 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 Department 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 twelve quarter credits of professional courses relating to elementary administration and supervision taken subsequent to at least one year of teaching experience. Not less than six of the required number of quarter credits must be from List A below and must cover at least two 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 twelve 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 six 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 twelve 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 six of the required number of quarter credits must be from List A below 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 principal's 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 principal's credentials.)

c. At least two years of successful experience as principal of an elementary school of six or more teachers, plus twelve 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 secondary certification.

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 twenty-four 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 secondary certification. Not less than six 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 twenty-four 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 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

EDGAR A. LOEW, *Dean*, 206 Guggenheim Hall

With minor exceptions, all curricula in the College of Engineering have a common freshman year, which is administered by the general engineering department. The work beyond the freshman year comprises the curricula of six professional divisions, namely, aeronautical, chemical, civil, electrical, industrial, and mechanical engineering. Four-year curricula leading to degrees of bachelor of science in the respective professional branches of engineering are offered in each of these except industrial. The curricula consist largely of required technical courses, but enough work is provided in the humanistic-social area to bring the total nontechnical content up to nearly twenty per cent.

In the industrial engineering curriculum, a second bachelor's degree is awarded after five years of study. The first four of these comprise the standard four-year curriculum of one of the major branches of engineering, while the fifth is made up of courses in industrial management and related subjects.

*Secondary Certificate.* Engineering students who plan to prepare for high school teaching should consult with the College of Education as soon as possible.

*Advanced Degrees.* At least a year of graduate study, leading to the master's degree, is available in each major curriculum. Graduate courses are listed in Section III under "Engineering." Requirements for advanced degrees are discussed in the Graduate School section, page 132.

*Professional Degrees.* For requirements for professional degrees, see page 140.

*Fellowships, Scholarships, Prizes.* See pages 69-70.

### Admission Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 51-60. 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.

Students planning to major in chemical engineering should include two units of German in high school. German is very desirable also for those taking the structural or hydraulic option in civil engineering.

A student is advised not to attempt to enter the University until he is able to register in his chosen college without deficiencies. Under certain circumstances and with the approval of the dean of the college concerned, however, certain deficiencies in specific college requirements may be removed after entrance to the University.

Each applicant for admission to the College of Engineering shall take an examination and file his application at least 30 days before the beginning of the term for which he is applying. The results of the examination together with the grade-point average previously earned in high school and/or in college will be the bases for determining eligibility for admission, provided the applicant meets all other University and College requirements (see pages 51-54). The examination will be given at the University at times to be announced. High schools and colleges may also give the examination by making suitable arrangements with the University. The examination may be waived for upper-division students transferring from accredited engineering colleges.

### 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 1, 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 right establishment and proper maintenance of those skills, the courses are begun in the freshman year, and—in as many as possible of the engineering curricula—will continue in unbroken sequence through the three years following. Stress is laid on the principles of expository writing and on well-written engineering reports, and a year's practice in public speaking is included.

The subject matter covered, basically humanistic, is intended to acquaint the engineering student with the broad outline of human knowledge, setting before him the pageant of civilization and introducing him to a few of its great thinkers, artists, and men of action. With this foundation laid, he should be able by the time he graduates to seek out, to attain, and to develop for himself the additional knowledge and fuller understanding that distinguish the cultured citizen of today, whatever may be his specific 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:

* 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.

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.

### Curricula and Degrees

Four-year curricula are offered by the College of Engineering in aeronautical, chemical, civil, electrical, and mechanical engineering, and a fifth year in industrial engineering. With minor exceptions in chemical engineering, all curricula have a common freshman year. Successful completion of a four-year curriculum leads to a bachelor of science degree with a designation of the major department. Graduates of a four-year curriculum may earn a bachelor's degree in industrial engineering by completing an additional year of prescribed courses. There is also available in each department a fifth or graduate year, the satisfactory completion of which leads to the award of the master's degree. For the most part, courses in all curricula are prescribed, but some few electives‡ are available. *These must be approved in advance of registration by the head of the department.*

‡ Army and Navy R.O.T.C. students may use not to exceed 9 quarter credits in advanced Army and Navy subjects to satisfy unrestricted elective credits appearing in an engineering curriculum.

## 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. 31. Analysis | 5 | Math. 32. Analysis | 5 | Math. 33. Analysis | 5 |
| G.E. 1. Drawing | 3 | G.E. 2. Drawing | 3 | G.E. 3. Drafting Probs. | 3 |
| G.E. 11. Engin. Probs. | 3 | G.E. 12. Engin. Probs. | 3 | †G.E. 21. Surveying | 3 |
| P.E. | + | †P.E. 15. Hygiene | 2 | Engl. 40. Engr. Report Writing | 1 |
| | | P.E. | + | P.E. | + |
| | 14+ | | 16+ | | 15+ |

* Students without high school chemistry substitute Chem. 1 and 2 (5 cr. each) for Chem. 24 and 25.

Students expecting to take chemical 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. 15 in the spring quarter.

### Aeronautical Engineering

DEGREES: Bachelor of Science in Aeronautical Engineering (at end of fourth year) and Master of Science in Aeronautical Engineering (at end of fifth year)

#### FRESHMAN

(The same for all curricula. See above.)

#### 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. 41. Engr. Calculus | 3 | Math. 42. Engr. Calculus | 3 | Math. 43. Engr. Calculus | 3 |
| M.E. 81. Mechanism | 3 | A.E. 81. Intr. 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. Mfg. Methods | 1 | M.E. 54. Mfg. Methods | 1 | M.E. 55. Mfg. Methods | 1 |
| Engl. 81. Tech. Writing I | 1 | E.B. 3. Economics | 3 | Engl. 83. Tech. Writing III | 1 |
| P.E. | + | Engl. 82. Tech. Writing II | 1 | P.E. | + |
| | | P.E. | + | | |
| | 15+ | | 17+ | | 17+ |

**JUNIOR**

| | | |
|---|---|---|
| C.E. 93. Mechanics..... 3 | A.E. 101. Aerodynamics.. 3 | A.E. 100. Airc. 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. 167. Engr. Materials 3 | A.E. 104. Lab. Methods.. 3 |
| Engl. 123. Human. I..... 3 | M.E. 111. Machine Design 3 | M.E. 112. Machine Design 3 |
| | Engl. 124. Human. II.... 3 | M.E. 104. Mfg. Methods.. 2 |
| | | Engl. 194. Reading I..... 1 |
| 16 | 17 | 15 |

**SENIOR**

| | | |
|---|---|---|
| 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. 141. Airc. Propulsion 3 | A.E. 174. Airc. Mon. Struct. ..... 3 |
| A.E. 171. Airc. Struct. Anal. ..... 4 | A.E. 172. Airc. Struct. Anal. ..... 4 | A.E. 175. Struct. Test.... 2 |
| A.E. 188. Seminar..... 0 | A.E. 189. Seminar..... 0 | A.E. 190. Seminar..... 1 |
| Psych. 4. Industrial..... 3 | E.B. 166. Industrial Rel.. 3 | E.B. 57. Business Law... 4 |
| Electives* ..... 3 | Electives* ..... 1 | Electives* ..... 4 |
| 15 | 15 | 15 |

* Students planning graduate work must elect A.E. 161 if they are not taking Math. 114 and 115.

**GRADUATE†**

| | | |
|---|---|---|
| A.E. 201. Theor. Aerodyn. I. ..... 3 | A.E. 202. Compressibility. 3 | A.E. 206. Adv. Airpl. Des. 3 |
| A.E. 217. Grad. Seminar.. 0 | A.E. 205. Theor. Aerodyn. II ..... 3 | A.E. 219. Grad. Seminar.. 1 |
| Math. 115. Adv. Diff. Equations ..... 3 | A.E. 218. Grad. Seminar.. 0 | A.E. 203. Dyn. Stability .. 3 |
| Phys. 204. Thermodyn. .. 6 | Math. 116. Adv. Diff. Equations ..... 2 | *or* |
| *or* | Elective‡ ..... 3 | A.E. 223. Airc. Struct. Des.* ..... 3 |
| C.E. 221. Elasticity* ..... 3 | *or* | Elective‡ ..... 3 |
| Elective‡ ..... 6 *or* 3 | A.E. 222. Elastic Stab.*.. 3 | Thesis ..... 5 |
| | Thesis ..... 4 | |
| 15 | 15 | 15 |

† Requirements for advanced degrees will be found in the Graduate School section.

‡ Approved courses in engineering, mathematics, or physics. See Announcement of Courses, page 149.

* These alternates are for students who wish to emphasize aircraft structures.

## Chemical Engineering

DEGREES: Bachelor of Science in Chemical Engineering (at end of fourth year) and Master of Science in Chemical Engineering (at end of fifth year)

**FRESHMAN**

(The same for all curricula. See above.)

**SOPHOMORE**

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| Physics 97. Engin. Physics | 4 | Physics 98. Engin. Physics | 4 | Physics 99. Engin. Physics | 4 |
| Math. 41. Engin. Calculus | 3 | Ch.E. 52. Ind. Chem. Calc. | 2 | Ch.E. 53. Ind. Chem. Calc. | 2 |
| Ch.E. 51. Ind. Chem. Calc. | 2 | Chem. 108. Quant. Anal.. | 4 | Chem. 102. Adv. Qual. Anal. ..... | 4 |
| Chem. 107. Quant. Anal.. | 4 | M.E. 82. Heat Engines... | 3 | C.E. 92. Mechanics..... | 3 |
| M.E. 54. Mfg. Methods... | 1 | E.B. 3. General Econ..... | 3 | M.E. 55. Mfg. Methods.. | 1 |
| Engl. 81. Tech. Writing I. | 1 | Engl. 82. Tech. Writing II | 1 | Engl. 83. Tech. Writing III | 1 |
| P.E. .....+ | | P.E. .....+ | | P.E. .....+ | |
| 15+ | | 17+ | | 15+ | |

**JUNIOR**

| | | |
|---|---|---|
| Chem. 181. Phys. & Theor. Chem. ..... 5 | Chem. 182. Phys. & Theor. Chem. ..... 5 | Chem. 183. Phys. & Theor. Chem. ..... 5 |
| Chem. 131. Organic Chem. 5 | Chem. 132. Organic Chem. 5 | E.E. 121. Alt. Currents.. 5 |
| M.E. 111. Machine Design 3 | E.E. 101. Direct Currents 5 | E.B. 57. Business Law... 3 |
| Engl. 123. Human. I..... 3 | | Engl. 124. Human. II.... 3 |
| 16 | 15 | 16 |

**SENIOR**

| | | |
|---|---|---|
| Ch.E. 121. Chem. of Engin. Materials ..... 5 | Ch.E. 122. Inorganic Chem. Industries ..... 5 | Ch.E. 123. Organic Chem. Industries ..... 5 |
| Ch.E. 171. Unit Operations 5 | Ch.E. 172. Unit Operations 5 | Ch.E. 173. Unit Operations 5 |
| Ch.E. 176. Thesis..... 1 | Ch.E. 177. Thesis..... 1 | Ch.E. 178. Thesis..... 3 |
| Psych. 4. Industrial..... 3 | E.B. 166. Industrial Rel.. 3 | Engl. 196. Reading III... 1 |
| Engl. 194. Reading I..... 1 | Engl. 195. Reading II.... 1 | |
| 15 | 15 | 14 |

**GRADUATE†**

| | | |
|---|---|---|
| Chem. Engin. & Allied Work .....12 | Chem. Engin. & Allied Work .....12 | Chem. Engin. & Allied Work .....12 |
| Chem. 250 Thesis..... 3 | Chem. 250 Thesis..... 3 | Chem. 250 Thesis..... 3 |
| 15 | 15 | 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 (at end of fifth year)

**FRESHMAN**

(The same for all curricula. See above.)

**SOPHOMORE**

| *Autumn Quarter* Credits | *Winter Quarter* Credits | *Spring Quarter* Credits |
|---|---|---|
| Phys. 97. Engr. Phys..... 4 | Phys. 98. Engr. Phys..... 4 | Phys. 99. Engr. Phys..... 4 |
| Math. 41. Engr. Calc..... 3 | Math. 42. Engr. Calc..... 3 | M.E. 81. Mechanism, *or* |
| C.E. 91. Mechanics..... 3 | C.E. 92. Mechanics..... 3 | M.E. 82. Heat Engr..... 3 |
| E.B. 3. Gen. Econ..... 3 | Geol. 10/110. Eng. Geol... 5 | C.E. 93. Mechanics..... 3 |
| Engl. 81. Tech. Writing I. 1 | Engl. 82. Tech. Writing II 1 | E.E. 101. Dir. Currents.. 5 |
| P.E. .....+ | P.E. .....+ | Engl. 83. Tech. Writing III 1 |
| | | P.E. .....+ |
| 14+ | 16+ | 16+ |

**JUNIOR**

| | | |
|---|---|---|
| C.E. 142. Hydraulics..... 5 | C.E. 143. Hyd. Engr..... 5 | C.E. 121. Roads & Pvmts. 3 |
| C.E. 171. Struct. Anal.... 3 | C.E. 172. Struct. Anal.... 3 | C.E. 173. Struct. Anal.... 3 |
| C.E. 112. Route Surv..... 3 | C.E. 163. Timb.-Steel Lab. 3 | C.E. 162. Cem.-Conc. Lab. 3 |
| E.E. 121. Alt. Currents.. 5 | C.E. 113. Location & Earthwork ..... 3 | C.E. 114. Intermed. Surv. 3 |
| | | C.E. 150. San. Science... 3 |
| | Engl. 194. Reading I..... 1 | Engl. 195. Reading II.... 1 |
| 16 | 15 | 16 |

**SENIOR**

| | | |
|---|---|---|
| C.E. 175. Struct. Design. 3 | C.E. 176. Struct. Design. 3 | C.E. 177. Struct. Design. 3 |
| Tech. Elec. ..... 3 | Tech. Elec. ..... 6 | Tech. Elec. ..... 5 |
| C.E. 166. Soil Mechanics. 3 | E.B. 166. Industrial Relations ..... 3 | E.B. 57. Bus. Law..... 3 |
| Engl. 123. Human. I..... 3 | Engl. 124. Human. II.... 3 | Engl. 125. Human. III... 3 |
| Psych. 4. Industrial..... 3 | | |
| 15 | 15 | 15 |

**GRADUATE†**

| | | |
|---|---|---|
| C.E. & Allied Work..... 9 | C.E. & Allied Work..... 9 | C.E. & Allied Work..... 9 |
| C.E. 298. Thesis..... 3 | C.E. 298. Thesis..... 3 | C.E. 298. Thesis..... 3 |
| Elective* ..... 3 | Elective* ..... 3 | Elective* ..... 3 |
| 15 | 15 | 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* | | *Credits* |
|---|---|---|---|
| C.E. 115. Geod. Surv'g. & Photogrammetry | 3 | C.E. 158. Sewage Disposal | 3 |
| C.E. 123. Railway & Waterway Engineering | 3 | C.E. 167. Earthwork Engineering | 3 |
| C.E. 124. Highway & Runway Design | 3 | C.E. 181. Advanced Structures I | 3 |
| C.E. 128. Transportation Administration | 3 | C.E. 182. Advanced Structures II | 3 |
| C.E. 145. Hydraulic Machinery | 3 | C.E. 183. Advanced Structures III | 3 |
| C.E. 147. Hydraulic Power | 3 | C.E. 191, 193, 195, H, M, S, W, or T.* Special Sr. & Graduate Course in Professional Design and/or Analysis. (ea.) | 3-5 |
| C.E. 153. Regional Planning | 3 | | |
| C.E. 154. Sanitary Design | 3 | | |
| C.E. 155. Water Supply Problems | 3 | C.E. 209. Engineering Relations | 3 |

* 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 (at end of fifth year)

### FRESHMAN

(The same for all curricula. See above.)

### SOPHOMORE

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| Physics 97. Engineering | 4 | Physics 99. Engineering | 4 | E.E. 111. D.C. Mach. | 3 |
| Math. 41. Engr. Calculus | 3 | Math. 42. Engr. Calculus | 3 | E.E. 112. D.C. Mach. Lab. | 4 |
| E.E. 99. D.C. Circuits | 5 | E.E. 109. Basic Field Theory | 5 | M.E. 81. Mechanism | 3 |
| C.E. 91. Mechanics | 3 | C.E. 92. Mechanics | 3 | M.E. 82. Steam | 3 |
| Engl. 81. Tech. Writing I | 1 | Engl. 82. Tech. Writing II | 1 | M.E. 53. Foundry | 1 |
| P.E. | + | P.E. | + | Engl. 83. Tech. Writing III | 1 |
| | 16+ | | 16+ | P.E. | + |
| | | | | | 15+ |

### JUNIOR

| | | | | | |
|---|---|---|---|---|---|
| E.E. 159. A.C. Circuits | 5 | E.E. 161. A.C. Mach. | 4 | E.E. 181. Vac. Tubes & Electronics | 6 |
| M.E. 83. Steam Lab. | 3 | E.E. 162. A.C. Mach. Lab. | 4 | M.E. 112. Mach. Design | 3 |
| M.E. 167. Engr. Materials | 3 | M.E. 111. Mach. Design | 3 | Math. 114.* Dif. Eq. | 3 |
| M.E. 54. Welding | 1 | M.E. 55. Machine Shop | 1 | Engl. 125. Human. III | 3 |
| Engl. 123. Human. I | 3 | Engl. 124. Human. II | 3 | | |
| | 15 | | 15 | | 15 |

### SENIOR

| | | | | | |
|---|---|---|---|---|---|
| E.E. 195. Elec. Transients | 4 | E.E. Group | 4 | E.E. Group | 5 |
| E.E. Group | 5 | Phys. 155. Atomic Physics | 5 | E.B. 57. Business Law | 3 |
| C.E. 142. Hydraulics | 5 | E.B. 3. Economics | 3 | E.B. 166. Industrial Relations | 3 |
| Engl. 194. Reading I | 1 | Psych. 4. Industrial | 3 | Elective | 3 |
| | | Engl. 195. Reading II | 1 | Engl. 196. Reading III | 1 |
| | 15 | | 16 | | 15 |

### GRADUATE†

| | | | | | |
|---|---|---|---|---|---|
| E.E. and Allied Work | 12 | E.E. and Allied Work | 12 | E.E. and Allied Work | 12 |
| Thesis | 3 | Thesis | 3 | Thesis | 3 |
| | 15 | | 15 | | 15 |

* Students not planning a fifth year may substitute some other course.

† Requirements for advanced degrees will be found in the Graduate School section.

### UNDERGRADUATE TECHNICAL ELECTIVES

E.E. group requirements must be satisfied by selection from the following courses:

| POWER | Credits | COMMUNICATION | Credits |
|---|---|---|---|
| E.E. 141. Illumination | 3 | E.E. 183. Vacuum-tube & Electronic Circ. | 6 |
| E.E. 152. Machine Design | 3 | E.E. 185. Communication Networks | 6 |
| E.E. 154. Adv. Machine Design | 3 | E.E. 187. High-frequency Circuits & Tubes | 5 |
| E.E. 163. Adv. A.C. Machinery | 6 | E.E. 189. Radio Design | 2 |
| E.E. 165. Elec. Measurements | 3 | E.E. 170-172-174. Individual Projects (ea.) | 2-5 |
| E.E. 170-172-174. Individual Projects (ea.) | 2-5 | | |
| E.E. 173. Electric Power Systems | 3 | | |
| E.E. 197. Industrial Control | 3 | | |

### COURSES FOR GRADUATES ONLY

| Credits | | Credits | |
|---|---|---|---|
| E.E. 203. Advanced Circuit Theory I | 3 | E.E. 225. Power Transmission | 5 |
| E.E. 204. Network Analysis | 3 | E.E. 241. Electro-acoustics | 5 |
| E.E. 205. Advanced Circuit Theory II | 3 | E.E. 251. High-frequency Techniques | 5 |
| E.E. 210, 212, 214. Research (ea.) | 2-5 | E.E. 261. Wave Propagation | 6 |
| E.E. 221. Advanced Transients | 5 | E.E. 291. Graduate Thesis | 2-9 |
| E.E. 223. Symmetrical Components | 3 | | |

## Industrial Engineering

DEGREE: Bachelor of Science in Industrial Engineering

*Requirement for Admission*: A Bachelor of Science degree in some branch of engineering as, for example, aeronautical, chemical, civil, electrical, mechanical, etc.

The degree will be granted following the successful completion of 45 credits in the courses listed below:

| *Autumn Quarter* | Credits | *Winter Quarter* | Credits | *Spring Quarter* | Credits |
|---|---|---|---|---|---|
| E.B. 63. Accounting | 5 | M.E. 108. Prod. Mgt. | 3 | M.E. 109. Cost Anal. | 3 |
| E.B. 103. Money & Banking | 5 | E.B. 110. Accounting | 5 | E.B. 154. Accounting | 5 |
| Elective | 5 | E.B. 121. Corp. Fin. | 5 | Elective | 6 |
| | | Elective | 3 | | |

Students who plan to take this degree should take E.B. 62, Principles of Accounting, as an elective subject for the first bachelor's degree. Those who fail to do so will need to take E.B. 62 in addition to the courses listed above, during their fifth year. This will require the completion of E.B. 154 by extension or in residence during the fourth quarter.

E.B. 101 may be substituted for M.E. 108 and E.B. 151 for M.E. 109 if conflicts or other schedule difficulties seem to demand it.

## Mechanical Engineering

DEGREES: Bachelor of Science in Mechanical Engineering (at end of fourth year) and Master of Science in Mechanical Engineering (at end of fifth year)

### FRESHMAN

(The same for all curricula. See above.)

### SOPHOMORE

| *Autumn Quarter* | Credits | *Winter Quarter* | Credits | *Spring Quarter* | Credits |
|---|---|---|---|---|---|
| Phys. 97. Engr. Phys. | 4 | Phys. 98. Engr. Physics | 4 | Phys. 99. Engr. Physics | 4 |
| Math. 41. Engr. Calculus | 3 | Math. 42. Engr. Calculus | 3 | C.E. 92. Mechanics | 3 |
| M.E. 81. Mechanism | 3 | C.E. 91. Mechanics | 3 | M.E. 83. Steam Eng. Lab. | 3 |
| M.E. 82. Heat Engines | 3 | M.E. 54. Mfg. Methods | 1 | M.E. 55. Mfg. Methods | 1 |
| M.E. 53. Mfg. Methods | 1 | E.B. 3. Genl. Econ. | 3 | E.B. 57. Business Law | 3 |
| Engl. 81. Tech. Writing I | 1 | Engl. 82. Tech. Writing II | 1 | Engl. 83. Tech. Writing III | 1 |
| P.E. | + | P.E. | + | P.E. | + |
| | 15+ | | 15+ | | 15+ |

**JUNIOR**

| | | |
|---|---|---|
| M.E. 183. Thermodynamics 5 | M.E. 111. Machine Design 3 | M.E. 112. Machine Design 3 |
| M.E. 167. Engr. Materials 3 | M.E. 123. Engines & Boilers ..... 2 | M.E. 124. Engines & Boilers ..... 2 |
| M.E. 105. Adv. Mfg. Methods ..... 1 | M.E. 151. Experim. Engr.. 3 | M.E. 152. Experim. Engr.. 3 |
| C.E. 93. Mechanics..... 3 | M.E. 106. Adv. Mfg. Methods ..... 1 | M.E. 107. Produc. Planning ..... 1 |
| Engl. 123. Human. I..... 3 | E.E. 101. Direct Currents 5 | E.E. 121. Altern. Currents 5 |
| | Engl. 124. Human. II.... 3 | Engl. 125. Human. III... 3 |
| 15 | 17 | 17 |

**SENIOR**

| | | |
|---|---|---|
| M.E. 198. Int. Comb. Engines ..... 3 | M.E. 153. Int. Comb. Eng. Lab. ..... 3 | Engl. 196. Reading III... 1 |
| C.E. 142. Hydraulics..... 5 | M.E. 113. Machine Design 2 | Electives* .....14 |
| Psych. 4. Industrial..... 3 | E.B. 166. Industrial Relations ..... 3 | |
| Engl. 194. Reading I..... 1 | Engl. 195. Reading II.... 1 | |
| Electives* ..... 3 | Electives* ..... 6 | |
| 15 | 15 | 15 |

**GRADUATE†**

| | | |
|---|---|---|
| M.E. & Allied Work.....12 | M.E. & Allied Work.....12 | M.E. & Allied Work.....12 |
| Thesis ..... 3 | Thesis ..... 3 | Thesis ..... 3 |
| 15 | 15 | 15 |

* Not less than 15 elective credits shall be technical.
† Requirements for advanced degrees will be found in Graduate School section.

**SENIOR AND GRADUATE TECHNICAL ELECTIVE COURSES**

All electives must be approved in advance by the department.

| | *Credits* | | *Credits* |
|---|---|---|---|
| M.E. 104. Mfg. Methods, nonferrous metals ..... | 2 | M.E. 187. Naval Architecture..... | 3 |
| M.E. 108. Production Management..... | 3 | M.E. 188. Marine Engineering..... | 3 |
| M.E. 109. Factory Cost Analysis..... | 3 | M.E. 189. Refrigeration..... | 3 |
| M.E. 114. Machine Design..... | 2 | M.E. 191, 192, 193. Research.2-5 each quarter | |
| M.E. 161. Quality Control..... | 3 | M.E. 195. Thesis..... | 3 |
| M.E. 162. Methods Analysis..... | 3 | M.E. 199. Internal Combustion Engine Design ..... | 3 |
| M.E. 182. Heating & Ventilation..... | 3 | M.E. 200. Vibrations of Machinery..... | 3 |
| M.E. 184. Power Plants..... | 5 | M.E. 202. Advanced Engineering Materials | 3 |
| M.E. 185. Naval Architecture..... | 3 | M.E. 204. Diesel Engines..... | 2 |
| M.E. 186. Naval Architecture..... | 3 | M.E. 211, 212, 213. Research.....3 each | |

## DEPARTMENT OF MILITARY SCIENCE AND TACTICS (ARMY 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 War Department based on that Act.

Admission to the postwar Reserve Officers' Training Corps program of instruction is voluntary on the part of the applicant. The program is divided into two phases, elementary training and advanced training.

The elementary course consists of formal instruction for three hours per week for two academic years of 32 weeks each. Students who have had previous military training or service will receive credit toward advanced standing in the Reserve Officers' Training Corps.

The advanced course consists of formal instruction for five hours per week for two academic years of 32 weeks each, plus a summer camp, which is attended between the first and second years of the advanced course.

All students enrolled in the R.O.T.C. must be citizens of the United States, physically qualified, and accepted by the University as regularly enrolled students. They must not have reached 23 years of age at the time of original enrollment,

except that this age limit will not apply to veterans of World War II, enrolling prior to January 1, 1950.

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. The latter return their uniforms at withdrawal.

For the advanced course students, the War Department 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

Beginning with the autumn quarter, 1947, the first class selected by a nation-wide competitive examination will be enrolled in the Naval Reserve Officers' Training Program. An individual enrolled in the training program shall meet the following requirements. He must:

1. Be eligible for admittance to the N.R.O.T.C. college in accordance with the college's entrance requirements.
2. Agree to accept a commission in the Navy or Marine Corps if offered.
3. Have the consent of a parent, if a minor, to enter into a contractual agreement with the Secretary of the Navy, obligating himself to a period of at least two years of active duty after commissioning.
4. Be a citizen of the United States between the ages of 17 and 21 on entrance into the program.
5. Be unmarried and agree to remain unmarried until commissioned or disenrolled.
6. Meet the physical requirements, comparable to those required for entry into the Naval Academy.
7. Agree to take courses which require the completion of four additional years of college work if he is already enrolled in an accredited college.

Individuals accepted in the program will have such fees as tuition and books paid in addition to a cash remuneration of $50 per month.

Contract students will be accepted from the freshman class providing they meet requirements 1, 4, 5, 6, and 7, as listed above. Those accepted under this category will be commissioned in the U.S. Naval Reserve or U.S. Marine Corps Reserve upon completion of the program, and will receive a subsistence allowance during the last two years of the program.

## THE FAR EASTERN INSTITUTE

GEORGE TAYLOR, *Director*, 230 Denny Hall

The Far Eastern Institute has been established to integrate the graduate and undergraduate instruction and research in Far Eastern 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 offered by the Institute in cooperation with the colleges and departments concerned. Faculty members working in Far Eastern studies, although they may belong to some other than the Far Eastern department, will be members of the Institute. For full information, address an inquiry to the director of the Institute.

# COLLEGE OF FORESTRY

GORDON D. MARCKWORTH, *Dean*, 206 Anderson Hall

For detailed information concerning University fees, expenses, and admission requirements, see pages 51-60. 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 ten credits is counted as the equivalent of the entrance unit.

*Fellowships, Scholarships, Prizes.* See pages 69-70.

## Requirements for Graduation

*Undergraduate Work.* For the degree of Bachelor of Science in Forestry the student must complete, in addition to required subjects outlined in the curriculum, enough electives to make a total of 186 credits, exclusive of physical education activity courses, and must meet the all-University requirements for graduation (see page 60). 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 to exceed nine quarter credits in advanced Army or Navy subjects to satisfy unrestricted elective credits in the College of Forestry.

*Advanced Degrees.* For requirements for advanced degrees, see Graduate School section, page 132.

## Lower-Division Curriculum

### FIRST YEAR

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| Botany 17. Foresters' | 3 | Botany 18. Foresters' | 3 | Botany 19. Foresters' | 3 |
| Forestry 3. Dev. of For. | 3 | Forestry 4. Protection | 3 | Forestry 1a. Dendrology | 3 |
| Math. 4. Trigonometry | 5 | Engl. 7. Composition | 5 | Forestry 8. For. Problems | 5 |
| Physics 1 or 4. General | 5 | Physics 2 or 5. General | 5 | Physics 3 or 6. General | 5 |
| P.E. | + | P.E. | + | P.E. | + |
| | 16+ | | 16+ | | 16+ |

### SECOND YEAR

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| Forestry 1b. Dendrology | 3 | Forestry 60. Mensuration | 5 | Soph. Field Trip | |
| Forestry 15. Gen. Lbrg. | 5 | Forestry 21. Silvics | 3 | Forestry 40. Silviculture | 2 |
| Chem. 1 or 21. General | 5 | G.E. 7. Eng. Draw. | 3 | Forestry 62. Mensuration | 6 |
| E.B. 3. Gen. Econ. | 3 | Chem. 2 or 22. General | 5 | C.E. 56. Forest Surveying | 8 |
| P.E. | + | P.E. | + | P.E. | + |
| | 16+ | | 16+ | | 16+ |

## Upper-Division Curricula

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.)

*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.

## Forest Management Curriculum

### THIRD YEAR

| *Autumn Quarter* | Credits | *Winter Quarter* | Credits | *Spring Quarter* | Credits |
|---|---|---|---|---|---|
| For. 109. Wood Tech. | 3 | For. 111. Wood Structure | 3 | For. 115. Protection | 3 |
| For. 122. Silvi. Methods | 5 | For. 158. Utilization | 5 | Bot. 111. For. Pathology | 5 |
| For. 104. Timber Physics | 5 | For. 140. For. Constr. | 4 | Elective | 7 |
| Elective | 2 | Elective | 3 | | |
| | 15 | | 15 | | 15 |

### FOURTH YEAR

| | | | | | |
|---|---|---|---|---|---|
| For. 151. For. Econ. & Finance | 5 | For. 119. Forest Policy | 3 | For. 164. For. Mgt. Surveys | 4 |
| For. 185. For. Engineering | 5 | For. 152. Admin. & Reg. | 5 | For. 165. For. Mgt. Inv't'y | 4 |
| Elective | 5 | For. 171. For. Geography | 3 | For. 166. For. Mgt. Studies | 4 |
| | | Elective | 4 | For. 167. For. Mgt. Report | 4 |
| | 15 | | 15 | | 16 |

## Logging Engineering Curriculum

### THIRD YEAR

| *Autumn Quarter* | Credits | *Winter Quarter* | Credits | *Spring Quarter* | Credits |
|---|---|---|---|---|---|
| For. 104. Timber Physics | 5 | For. 111. Wood Structure | 3 | Bot. 111. For. Pathology | 5 |
| For. 109. Wood Tech. | 3 | For. 140. For. Constr. | 4 | For. 115. Protection | 3 |
| For. 122. Silvi. Methods | 5 | For. 158. Utilization | 5 | Elective | 7 |
| Elective | 2 | Elective | 3 | | |
| | 15 | | 15 | | 15 |

### FOURTH YEAR

| | | | | | |
|---|---|---|---|---|---|
| For. 151. For. Econ. & Finance | 5 | For. 119. Forest Policy | 3 | For. 187. Log. Engr. Field Trip | 16 |
| For. 170. Log. Safety | 2 | For. 152. Admin. & Reg. | 5 | | |
| For. 185. For. Engineering | 5 | For. 171. For. Geography | 3 | | |
| Elective | 3 | For. 186. Logging Engr. | 5 | | |
| | 15 | | 16 | | 16 |

Logging Engineering majors are advised to elect C.E. 112 and C.E. 113 in the third year. Other recommended electives are E.B. 57 (Business Law) and E.B. 62 (Accounting).

## Forest Products Curriculum

### THIRD YEAR

| *Autumn Quarter* | Credits | *Winter Quarter* | Credits | *Spring Quarter* | Credits |
|---|---|---|---|---|---|
| For. 104. Timber Physics | 5 | For. 108. Timber Design | 3 | For. 105. Wood Pres. | 3 |
| For. 109. Wood Techn'l'gy | 3 | For. 111. Wood Structure | 3 | For. 106. Wood Pres. Lab. | 2 |
| E.B. 62. Acctg. Principles | 3 | For. 157. For. Prod. Industries | 3 | Botany 111. For. Pathology | 5 |
| Elective | 4 | M.E. 82. Steam Engr. | 3 | Elective | 5 |
| | | Elective | 3 | | |
| | 15 | | 15 | | 15 |

### FOURTH YEAR

| | | | | | |
|---|---|---|---|---|---|
| For. 151. For. Econ. & Finance | 5 | For. 159. Plywood, Lamination & Glues | 3 | For. 184. Mfg. Problems | 5 |
| For. 183. Milling | 5 | For. 171. For. Geography | 3 | For. 189. Wood Pulp | 5 |
| E.B. 57. Business Law | 3 | For. 188. Kiln Drying | 3 | For. 190. Microtechnique | 3 |
| Elective | 2 | Elective | 6 | Elective | 2 |
| | 15 | | 15 | | 15 |

# 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.

Law students may elect studies in other departments with written permission from the Dean of the Law School.

## Admission

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, 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 have satisfactorily completed the following courses or their substantial equivalents: English 1, 2, 3 (9 credits); Philosophy 1, Introduction, and 5, Logic (10 credits); Economics 1-2, Principles (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).

*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, 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 Economics and Business, see pages 94 and 102.

For scholarship rules, see page 62.

# 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. No one may be admitted to a course in librarianship, except those so marked, unless he is expecting to complete the full curriculum.

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.

## 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.

## 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

* Not offered, 1947-48.

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, & Society | 2 | 201. Org. & Administration: Pub. Libs. | 2 | 202. Org. & Admin.: Academic & Spec. Libs. | 3 |
| 210. Bibliography & Reference | 3 | 211. Bibiography & Reference | 3 | ‡204. Libraries, Librarians, & Society | 2 |
| 220. Classification & Cataloging | 4 | 221. Classification & Cataloging | 3 | 212. Bibliography & Reference | 3 |
| 230. Books for Libraries | 3 | 231. Books for Libraries | 3 | 222. Classification & 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, & Society | 2 | 211. Bibliography & Reference | 3 | 204. Libraries, Librarians, & Society | 2 |
| 210. Bibliography & Reference | 3 | 221. Classification & Cataloging | 3 | 209. Directed Field Work (Practice) | 5 |
| 220. Classification & 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, & Society | 2 | 211. Bibliography & Reference | 3 | 204. Libraries, Librarians, & Society | 3 |
| 210. Bibliography & Reference | 3 | 221. Classification & Cataloging | 3 | ‡209. Directed Field Work (Practice) | 5 |
| 220. Classification & Cataloging | 4 | 231. Books for Libraries | 3 | 212. Bibliography & 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 Education 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, & Society | 2 | 211. Bibliography & Reference | 4 | 209. Directed Field Work (Practice) | 5 |
| 210. Bibliography & Reference | 3 | 221. Classification & Cataloging | 3 | 222. Classification & Cataloging | 5 |
| 220. Classification & Cataloging | 4 | 242. Legal Reference & Research | 5 | 243. Law Library Administration | 5 |
| 240. Adv. Legal Bibliog. | 4 | 270. History of the Book. | 3 | | |
| 241. Order & Accessioning of Law Books | 2 | | | | |

### Announcement of Courses

For announcement of courses offered by the School of Librarianship, see page 186.

# THE SCHOOL OF MEDICINE

EDWARD L. TURNER, *Dean*, 200B Bagley Hall

The School of Medicine began instruction to its first class on October 1, 1946. Basic medical science departments are adequately staffed and the clinical departmental organization is under way. It is anticipated that construction of the new Medical Center buildings on the University campus will be initiated during 1947. The School of Medicine is being organized and developed 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. The school will prepare a selected group of medical students for the practice of medicine through the use of the best educational techniques employed in this field. Actual admission to the practice of medicine in the State of Washington, or any other state, is conditional upon the candidate meeting the requirements of the state board of medical examiners in regard to internship, and passing the state medical examinations.

## Applications

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 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; (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) two letters of recommendation, one from a science and the other from a nonscience instructor.

Applicants must take the special medical aptitude tests 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, 132 (Organic)—(total of 30 chemistry credits); Physics 1, 2, 3, or 4, 5, 6 (15 credits); Zoology 3, 4 (General), 127 (Comparative Anatomy).

The student is advised to elect courses in embryology (Zoology 105), 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.

### Major Requirements in the Various Departments

## BIOCHEMISTRY

EARL R. NORRIS, *Executive Officer,* 122 Bagley Hall

Any student desiring to take work which would qualify him for a career in biochemistry must obtain a degree of Bachelor of Science in Chemistry under the College of Arts and Science and should consult with the department of Biochemistry in the choice of electives.

## MICROBIOLOGY

C. A. EVANS, *Executive Officer,* 420 Johnson Hall

DEGREE: Bachelor of Science

A minimum of thirty-six credits in approved courses in microbiology and satisfaction of the College of Arts and Sciences group requirements are necessary for graduation.

Ten credits in botany or zoology, Physics 1, 2, 3 (or 4, 5, 6), and Chemistry 1 and 2 (or 21 and 22), 23, 111, 131 and 132 are required of all microbiology or bacteriology majors. These courses and Microbiology 100 should ordinarily be completed during the first two years.

An overall grade-point average of 2.5 in courses in chemistry and biology, and sponsorship by the department shall be required for admission to Microbiology 100.

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.

An overall grade-point average of 2.5 in courses of microbiology shall be required for graduation.

### 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; Chemistry 140, 141, 161.

Courses recommended for students in medical microbiology: Microbiology 106, 120, 121, 130 or 131, 151, 152, 153; Anatomy 103; Botany 108; Chemistry 161.

# COLLEGE OF MINES

MILNOR ROBERTS, *Dean,* 328 Mines Laboratory

### Entrance Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 51-60. In addition to the all-University entrance requirements, the College of Mines requires the following: one unit* each of elementary algebra, plane geometry, physics, and chemistry, and one-half unit each of advanced algebra and solid geometry.

A student who does not present high school chemistry for entrance will be required to earn fifteen credits instead of thirteen credits in chemistry during the freshman year.

The high school pre-aviation course may not be substituted for the physics requirement. It will, however, be accepted as academic credit in science.

### Preparation in Algebra

All students entering any department of engineering will be tested in high school algebra by class work and by an examination given shortly after the beginning of the first quarter. Students failing in the test are not permitted to continue with regular freshman engineering mathematics but are required to take a review of preparatory algebra (Math. 1, College of Arts and Sciences) during the first quarter.

* 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.

## Admission to Sophomore Year

Admission to the sophomore year and continuation in the College of Mines will depend upon the student's demonstration of general fitness for work in that college, including the maintenance of satisfactory academic performance. See Scholarship Rules, page 62.

## Degrees

The College of Mines offers specialized courses in mining, metallurgical, and ceramic engineering. The four-year curricula lead to degrees as follows:

I. Bachelor of Science in Mining Engineering (B.S. in Min.E.).

II. Bachelor of Science in Metallurgical Engineering (B.S. in Met.E.).

III. Bachelor of Science in Ceramic Engineering (B.S. in Cer.E.).

*Degree with Honors.* A degree with honors may be conferred upon any student of the College of Mines who, upon vote of the faculty and of the honors committee, may be declared worthy of the unusual distinction.

*Advanced Degrees.* For requirements for advanced degrees, see Graduate School section, page 132.

*Professional Degrees.* For requirements for professional degrees, see page 140.

*Fellowships, Scholarships, Prizes.* See pages 69-70.

## Prospector's Course

The Prospector's Course, authorized by the State Legislature, is open to all men past high school age, without examination. The course is repeated each quarter except in summer. The fee for each term is $10, 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 the course. For full information address the Dean of the College of Mines.

## Curricula of the College of Mines

**(Freshman and sophomore years the same in all curricula)**

### FRESHMAN

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| Chem. 21. General | 5 | Chem. 22. General | 5 | Chem. 23. General | 5 |
| G.E. 1. Drawing | 3 | G.E. 2. Drawing | 3 | G.E. 3. Drafting Prob. | 3 |
| G.E. 11. Engin. Problems | 3 | G.E. 12. Engin. Problems | 3 | G.E. 21. Surveying | 3 |
| Math. 31. Freshman Engin. | 5 | Math. 32. Freshman Engin. | 5 | Math. 33. Freshman Engin. | 5 |
| | | P.E. 15. Personal Health | 2 | | |

### SOPHOMORE

| | | | | | |
|---|---|---|---|---|---|
| Mining 51. Elements | 3 | Mining 52. Methods | 3 | Met. 53. Elements | 3 |
| Geol. 5. Rocks & Minerals | 5 | Chem. 111. Quant. Anal. | 5 | Cer. 90. Indust. Minerals | 3 |
| Math. 41. Calculus | 3 | Physics 98. Engineers' | 4 | Geol. 121. Mineralogy | 5 |
| Physics 97. Engineers' | 4 | English 82. Tech. Writ. II | 1 | Physics 99. Engineers' | 4 |
| English 81. Tech. Writ. I | 1 | | | English 83. Tech. Writ. III | 1 |

Practice in mining or geology or metallurgy or ceramics in summer vacation.

## Mining Engineering

DEGREE: Bachelor of Science in Mining Engineering

### JUNIOR

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| Min. 101. Milling | 3 | Met. 103. Fuel Technology | 4 | Min. 106. Mine Excursion | 1 |
| Met. 101. Fire Assaying | 3 | Geol. 124. Petrography | 3 | Met. 102. Met. Lab. | 2 |
| Met. 104. Nonferrous | 3 | C.E. 92. Mechanics | 3 | Met. 154. Wet Assaying | 3 |
| Geol. 123. Optical Mineral | 3 | E.E. 101-102. Dir. Cur. | 5 | E.E. 121-122. Alt. Cur. | 5 |
| C.E. 91. Mechanics | 3 | | | C.E. 114. Intermed. Surv. | 3 |

Mining practice in summer vacation.

SENIOR

| | | |
|---|---|---|
| Min. 161. Mineral Dressing 4 | Min. 103. Mine Rescue Tr. 1 | Min. 107. Mine Excursion 1 |
| Min. 191. Thesis..... 2 | Min. 162. Economics..... 4 | Min. 163. Mining Engin. 4 |
| Met. 155. Iron and Steel.. 3 | Min. 192. Thesis..... 2 | Min. 182. Min. Indus. |
| Met. 162. Physical Met... 3 | Geol. 127. Ore Deposits.. 5 | Management ..... 3 |
| Elective* ..... 3 | E.B. 3. Gen. Economics.. 3 | Min. 193. Thesis..... 1 |
| | | Elective* ..... 6 |

* Electives (9 credits) must be approved in advance by the head of the department and must include one of the following: English 101, 102; Speech 1, or Speech 103.

## Metallurgical Engineering

DEGREE: Bachelor of Science in Metallurgical Engineering

JUNIOR

| *Autumn Quarter* *Credits* | *Winter Quarter* *Credits* | *Spring Quarter* *Credits* |
|---|---|---|
| Met. 101. Fire Assaying.. 3 | Met. 103. Fuel Technology 4 | Met. 102. Met. Lab..... 2 |
| Met. 104. Nonferrous..... 3 | E.E. 101-102. Dir. Cur... 6 | Met. 154. Wet Assaying.. 3 |
| Min. 101. Milling..... 3 | C.E. 92. Mechanics..... 3 | Min. 106. Mine Excursion 1 |
| C.E. 91. Mechanics..... 3 | Elective* ..... 2 | E.E. 121-122. Alt. Currents 6 |
| Elective* ..... 3 | | E.B. 3. Gen. Economics.. 3 |

Metallurgical practice in summer vacation.

SENIOR

| | | |
|---|---|---|
| Met. 155. Iron and Steel.. 3 | Met. 163. Metallography.. 3 | Met. 166. Adv. Nonferrous 3 |
| Met. 162. Physical Met... 3 | Met. 165. Met. Calculations 3 | Min. 107. Mine Excursion 1 |
| Min. 161. Mineral Dressing 4 | Min. 103. Mine Rescue Tr. 1 | Min. 163. Min. Engin... 4 |
| Min. 191. Thesis..... 2 | Min. 162. Economics..... 4 | Min. 193. Thesis..... 1 |
| Elective* ..... 3 | Min. 192. Thesis..... 2 | Elective* ..... 5 |
| | Chem. 140. Elem. Physical 3 | |

* Electives (14 credits) must be approved in advance by the head of the department and must include one of the following: English 101, 102; Speech 1, or Speech 103.

## Ceramic Engineering

DEGREE: Bachelor of Science in Ceramic Engineering

JUNIOR

| *Autumn Quarter* *Credits* | *Winter Quarter* *Credits* | *Spring Quarter* *Credits* |
|---|---|---|
| Cer. 100. Clays, Plasticity, and Suspensions ..... 3 | Cer. 101. Firing and Firing Problems ..... 3 | Cer. 102. Cer. Decoration. 3 |
| Cer. 104. Calculations for Bodies and Glazes ..... 3 | Cer. 105. Drying and Drying Problems ..... 3 | Cer. 110. Cer. Phys. Chem. Measurements . 2 |
| Min. 101. Milling..... 3 | Met. 103. Fuel Technology 4 | Min. 106. Mine Excursion 1 |
| C.E. 91. Mechanics..... 3 | C.E. 92. Mechanics ..... 3 | Met. 102. Met. Lab..... 2 |
| Geol. 123. Optical Mineralogy ..... 3 | Chem. 140. Elem. Physical 3 | E.B. 3. Gen. Economics.. 3 |
| | | Chem. 141. Elem. Physical 3 |

Ceramics practice in summer vacation.

SENIOR

| | | |
|---|---|---|
| Cer. 121. Cer. Prod. Lab.. 5 | Cer. 122. Cer. Prod. Lab.. 5 | Cer. 123. Cer. Prod. Lab. 5 |
| Min. 191. Thesis..... 3 | Min. 103. Mine Rescue Tr. 1 | Min. 107. Mine Excursion 1 |
| Met. 162. Physical Met... 3 | Min. 192. Thesis..... 3 | Min. 193. Thesis..... 2 |
| Electives* ..... 4 | Electives* ..... 6 | Electives* ..... 7 |

* Electives (17 credits) must be approved in advance by the head of the department and must include one of the following: English 101, 102; Speech 1, or Speech 103.

## Announcement of Courses

For announcement of courses offered by the College of Mines, see page 193.

# SCHOOL OF NURSING

ELIZABETH STERLING SOULE, *Dean*, Nursing 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, an active member of the Association of Collegiate Schools of Nursing, and is accredited for registration by the states of Washington and New York, and by all other states by reciprocity. The programs offered are intended to prepare the student for professional practice in all fields of nursing.

## 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 with a scholarship average of 2.5, together with the required physical education activity courses. These credits must include the following: English 1, 2, 3 (9 credits); Chemistry 3-4 or 5-6, 135-136 (16 credits); Psychology 1 (5 credits); Sociology 1 (5 credits); Microbiology 101, 102 (10 credits); Home Economics 9 (5 credits); Physical Education 10 (2 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 nursing and basic sciences 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 132.

## Health

All students are required to have a special health examination, chest X-ray and inoculations for smallpox, typhoid, and diphtheria 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.

A second physical examination is made by the cooperating teaching hospital before accepting the student. Medical and health care, including hospitalization not to exceed two weeks at any one time, are provided by the hospital. 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 56-57.

*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 69-70.

## Curricula

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

I. Basic course leading to the degree of Bachelor of Science in Nursing.

II. Courses for graduate nurses:
- a. Leading to the degree of Bachelor of Science in Nursing.
- b. Leading to the Certificate in Public Health Nursing.
- c. Leading to the Certificate in Institutional Nursing Supervision.

### Group I. Basic Course

DEGREE: Bachelor of Science in Nursing

The student will enter upon this curriculum after earning 90 college credits, as outlined above.

| *1st Quarter* | *Credits* | *2nd Quarter* | *Credits* | *3rd Quarter* | *Credits* | *4th Quarter* | *Credits* |
|---|---|---|---|---|---|---|---|
| Anat. 117 | 3 | Physiol. 118 | 3 | Nurs. 124 | 5 | Nurs. 125 | 5 |
| Physiol. 117 | 3 | Anatomy 118 | 3 | Pharm. 61 | 3 | Nurs. 130 | 4 |
| Physics 70 | 5 | Nurs. 1 | 3 | Nurs. 123 | 3 | Nurs. 128 | 6 |
| Home Econ. 105 | 5 | Nurs. 120 | 5 | Nurs. 122 | 3 | | |
| | 16 | Pharm. 51 | 2 | Nurs. 121 | 3 | | 15 |
| | | | 16 | | 17 | | |

| *5th Quarter* | *Credits* | *6th Quarter* | *Credits* | *7th Quarter* | *Credits* | *8th Quarter* | *Credits* |
|---|---|---|---|---|---|---|---|
| Soc. 192 | 3 | Nurs. 167 | 3 | Nurs. 141 | 5 | Nurs. 139 | 5 |
| Nurs. 129 | 2 | Public Health 121 | 3 | Nurs. 134 | 6 | Nurs. 140 | 6 |
| Nurs. 132 | 6 | Nurs. 133 | 6 | | 11 | | 11 |
| | 11 | | 12 | | | | |

| *9th Quarter* | *Credits* | *10th Quarter* | *Credits* | *11th Quarter* | *Credits* | *12th Quarter* | *Credits* |
|---|---|---|---|---|---|---|---|
| Nurs. 138 | 2 | Nurs. 147 | 5 | Nurs. 168 | 5 | Nurs. 149 | 3 |
| Nurs. 142 | 6 | Nurs. 148 | 6 | Nurs. 145 | 3 | Nurs. 144 | 6 |
| | 8 | | 11 | Nurs. 146 | 3 | | 9 |
| | | | | | 11 | | |

### Group II. Courses for Graduate Nurses

DEGREE: Bachelor of Science in Nursing

The programs for graduate nurses are intended to provide a broad general background and to prepare the students for positions of educational and administrative leadership in special fields of nursing. The curricula have been made as flexible as possible in order that the program of the individual student may be adjusted to her educational and professional background and her future needs and interests. A program in which professional, science, and general courses are properly combined is desired, regardless of the major field of interest. Each graduate nurse student will therefore consult with her adviser in the School of Nursing for assistance in planning her program.

Majors are offered in public health nursing, industrial nursing, orthopedic nursing, nursing arts, and teaching and supervision in a clinical specialty. In the latter the student may select one or more of the following clinical services: medicine, surgery, accident and emergency, operating room, obstetrics, pediatrics, psychiatry, tuberculosis nursing and out-patient service.

*General Requirements.* A total of 180 academic credits are required for graduation. From 24 to 48 credits are allowed for graduation from an accredited school of nursing, 6 credits being granted for each major service. The required 180 credits are to be distributed as follows:

| | Credits |
|---|---|
| Upper-division courses in major field | 45 |
| English 1, 2, 3 | 9 |
| Social science courses, including Soc. 1, Psych. 1 | 15 |
| Science courses including Microbiology 103 for Industrial and Public Health Nursing majors | 25 |
| Electives | 38 |
| Credit allowed from school of nursing | 24-48 |
| TOTAL | 180 |

Students entering with less than 48 credits from their school of nursing will take additional courses to total 48 credits. These may be taken in any field, according to the student's needs and interests.

### Required Courses in Major Fields

*Public Health Nursing:* Nurs. 160 (5), 162 (5), 163 (5), 164 (6), 167 (3), 168 (5), 195 (3); Public Health 121 (3), 122 (2); Social Work 192 (3).

*Industrial Nursing:* Nurs. 160 (5), 161 (3), 166 (12), 178 (3), 195 (3); Physical Educ. 116 (3); Home Econ. 109 (3); Social Work 192 (3); Public Health 122 (2), 124 (3).

*Teaching and Administration in Clinical Specialties:* Nurs. 150 (5), 151 (5), 152 (5), 154 (10), 155 or 156 or 157 or 158 (3), 159 (2), 161 (3), 195 (3); Educ. 101 (3), 147 (3).

*Teaching Nursing Arts:* Nurs. 150 (5), 151, (5), 152 (5), 154 (10), 155 (3), 161 (3), 185 (3), 195 (3); Educ. 101 (3), 147 (3).

*Orthopedic Nursing* (either hospital or public health nursing emphasis is provided): Nurs. 143 (6), 150 or 160 (5), 152 or 190 (5 or 3), 154 or 166 (10 or 12), 161 or 165 (3 or 2), 183 (5), 195 (3); Physical Educ. 115 (5), 122 (3).

### Certificate Courses

*Certificate in public health nursing.* This certificate requires that 90 credits be earned in five quarters of academic work at the University and one quarter of field work, or in four quarters of academic work and two quarters of field work, depending upon the experience the individual student has had in the public health nursing field. The following courses are required: Nursing 160, 162, 163, 164, 167, 168; Public Health 121; Sociology 1; Social Work 192; Microbiology 103; Psychology 1.

*Certificate in institutional nursing supervision.* The course in teaching supervision is designed to prepare the graduate nurse for a position as head nurse, supervisor, or instructor, depending upon the individual's previous preparation, experience, and ability.

Four quarters of work—two on the campus and two in the hospital division or one on the campus and three in the hospital division—are required for the certificate. The division of time between the campus and the hospital depends upon the preparation of the student and the service selected. University credit is given in all theory and practice courses and applies toward the degree of Bachelor of Science in Nursing.

The student may select clinical services in medicine, surgery, accident and emergency, operating room, obstetrics, pediatrics, or out-patient department in the 500-bed, well-equipped Harborview (King County) Hospital; tuberculosis nursing in the 200-bed, city-owned Firland Sanatorium; or psychiatry in either of the large state mental hospitals.

Required courses include: Nursing 150, 151, 152, 154, 155 or 156 or 157 or 158; Psychology 1; Sociology 1.

# COLLEGE OF PHARMACY

FORREST J. GOODRICH, *Dean*, 102 Bagley Hall

## Entrance Requirements

For detailed information concerning University admission requirements, fees, and expenses, see pages 51-60. 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.

*Advanced Degrees.* For requirements for advanced degrees, see Graduate School section, page 132.

*Fellowships, Scholarships, Prizes.* See pages 69-70.

## Curricula

Two four-year curricula are outlined below, each leading to the degree of Bachelor of Science in Pharmacy.

The requirements for graduation with this degree conform to the all-University requirements (pp. 60-62), except that not more than 18 quarter credits in advanced Army and Navy subjects may be applied toward graduation.

The first two years of the curricula are the same:

### FIRST YEAR

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| Pharm. 1. General | 3 | Pharm. 2. General | 3 | Pharm. 3. General | 3 |
| English 1. Comp. | 3 | English 2. Comp. | 3 | English 3. Comp. | 3 |
| Chem. 8. Gen. Inorganic. | 5 | Chem. 9. Gen. Inorganic. | 5 | Chem. 10. Qualitative | 5 |
| Ph. Chem. 16. Pharm. Calc. | 2 | Bot. 13. Pharm. Bot. | 2 | Bot. 14. Pharm. Bot. | 4 |
| P.E. 10 or 15 | 2 | Pharm. 4. History | 2 | P.E. | + |
| P.E. | + | P.E. | + | | |
| | 15+ | | 15+ | | 15+ |

### SECOND YEAR

| | | | | | |
|---|---|---|---|---|---|
| Ph. Chem. 5. Quantitative Gravimetric | 5 | Ph. Chem. 6. Quantitative Volumetric | 5 | Pharm. 11. Prescriptions | 3 |
| Pharm. 9. Prescriptions. | 3 | Pharm. 10. Prescriptions. | 3 | Physiol. 7. Human | 5 |
| Ph'cog. 12. Pharmacognosy | 3 | Ph'cog. 13. Pharmacognosy | 3 | Chem. 39. Organic | 5 |
| Chem. 37. Organic | 5 | Chem. 38. Organic | 5 | Ph'cog. 14. Pharmacognosy | 3 |
| P.E. | + | P.E. | + | P.E. | + |
| | 16+ | | 16+ | | 16+ |

*Optional Curricula.* The student, after completing the first two years, the outline of which is common to all courses, must elect one of the following curricula:

1. PROFESSIONAL PHARMACY CURRICULUM. (To prepare graduates for the operation and management of retail pharmacies.)

### THIRD YEAR

| *Autumn Quarter* | *Credits* | *Winter Quarter* | *Credits* | *Spring Quarter* | *Credits* |
|---|---|---|---|---|---|
| Ph'col. 101. Pharmacology and Toxicology | 3 | Ph'col. 102. Pharmacology and Toxicology | 3 | Ph'col. 103. Pharmacology and Toxicology | 3 |
| Ph. Chem. 195. Pharmaceutical Chemistry | 5 | Ph. Chem. 196. Pharmaceutical Chemistry | 5 | Ph. Chem. 197. Alkaloids and Toxicology | 5 |
| Microb. 101. General | 5 | Ph'cog. 104. Microscopy | 3 | Ph'cog. 105. Microscopy | 2 |
| Approved Elective | 3 | Approved Elective | 5 | Pharm. 118. Pharm. Accounting | 5 |
| | 16 | | 16 | | 15 |

*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.

**FOURTH YEAR**

| | | |
|---|---|---|
| Ph'cog. 112. Biologicals.. 3 | Pharm. 114. Adv. Prescrip. ..... 5 | Pharm. 115. Adv. Prescrip. 5 |
| Pharm. 113. Adv. Prescrip. ..... 5 | Pharm. 183. New Remedies ..... 3 | Pharm. 184. New Remedies and Laws... 3 |
| Pharm. 182. New Remedies ..... 3 | Approved Electives ..... 8 | Ph. Chem. 107. Urinalysis 2 |
| Pharm. 173. Cosmetics... 3 | | Ph. Chem. 108. Pharmacopoeial Assay ..... 2 |
| 14 | 16 | Approved Elective ..... 4 |
| | | 16 |

2. SCIENTIFIC CURRICULUM. (Prepares students for prescription and hospital pharmacy, manufacturing pharmacy, and pharmaceutical chemistry.)

**THIRD YEAR**

| *Autumn Quarter* *Credits* | *Winter Quarter* *Credits* | *Spring Quarter* *Credits* |
|---|---|---|
| Ph'col. 101. Pharmacology and Toxicology ..... 3 | Ph'col. 102. Pharmacology and Toxicology ..... 3 | Ph'col. 103. Pharmacology and Toxicology ..... 3 |
| Ph. Chem. 195. Pharmaceutical Chemistry ..... 5 | Ph. Chem. 196. Pharmaceutical Chemistry ..... 5 | Ph. Chem. 197. Pharmaceutical Chemistry ..... 5 |
| Microb. 101. General.... 5 | Ph'cog. 104. Microscopy.. 3 | Ph'cog. 105. Microscopy.. 2 |
| Approved Elective ..... 3 | Approved Elective ..... 5 | Approved Electives ..... 6 |
| 16 | 16 | 16 |

**FOURTH YEAR**

| | | |
|---|---|---|
| Ph'cog. 112. Biologicals.. 3 | Pharm. 183. New Remedies 3 | Ph. Chem. 107. Urinalysis 2 |
| Pharm. 113. Adv. Prescrip. 5 | Pharm. 114. Adv. Prescrip. 5 | Ph. Chem. 108. Pharmacopoeial Assay ..... 2 |
| Physics 1 or 4. General... 5 | Physics 2 or 5. General... 5 | Pharm. 184. New Remedies and Laws... 3 |
| Pharm. 182. New Remedies 3 | Approved Elective ..... 3 | Pharm. 115. Adv. Prescrip. 5 |
| 16 | 16 | Approved Elective ..... 4 |
| | | 16 |

# THE GRADUATE SCHOOL

## Including the Graduate School of Social Work

**ADMINISTRATIVE OFFICERS**

Raymond Bernard Allen, Ph.D. ..... *President of the University*
Edwin Ray Guthrie, Ph.D. ..... *Dean of the Graduate School*

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Graduate Council: Dean Guthrie, *chairman;* Professors F. Eastman, Eby, Harrison, Hitchcock, Lundberg, Mander, Marckworth, A. W. Martin, Powers, Ray, Robinson, Vail, Van Horn; Mrs. Wentworth, *secretary.*

Graduate School Publications Committee: Dean Guthrie, *chairman;* Professors Carpenter, K. Cole, Goodspeed, Griffith, Mund, Gunther, Rigg, Savage, C. W. Smith, Ordal; W. M. Read, *University editor* (ex officio); Mrs. Wentworth, *secretary.*

Wentworth, Lois J., B.A. ..... *Assistant to the Dean of the Graduate School*

*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 those who are active in creative research or who are teaching courses for graduate credit with specific reference to research training or who are supervising graduate research.

### General Information

Three classes of students are recognized in the Graduate School:

1. Candidates for the master's degree.
2. Candidates for the doctor's degree.
3. Students not candidates for a degree.

*Admission.* A graduate of the University or any other institution of good standing will be admitted to the Graduate School. Before being recognized as a candidate for a degree, however, a student must (1) present a "B" average for his last year of college work, (2) take the Graduate Record Examination, and (3) be approved by a committee appointed by the Dean of the Graduate School, which shall also constitute the advisory committee to oversee the student's subsequent work. If the applicant's average for the senior year is below "B," he must attend the University for a quarter with an average of "B" or better before he can begin or resume residence credit toward an advanced degree. Unless the committee is already sufficiently acquainted with the candidate's capacity and attainments, there shall be a conference of the committee and the candidate, the purpose of which is twofold:

(a) To determine whether the student has the quality of mind and the attitude toward advanced work which would justify his going on for an advanced degree.

(b) To satisfy the major and minor departments and the Graduate Council that the student has the necessary foundation in his proposed major and minor subjects. If he lacks this foundation, he will be required to establish it through undergraduate courses or supervised reading.

An undergraduate major is normally prerequisite to candidacy for a graduate major in any department, and an undergraduate minor to a graduate minor.

If the student is from a college or university which falls below a satisfactory standard in curriculum, efficiency of instruction, equipment, or requirements for graduation, he may be required to take other undergraduate courses in addition to those required as a foundation in the major and minor subjects.

As soon after matriculation as feasible a candidate for an advanced degree must file with the Dean of the Graduate School an outline of his proposed work. This outline is submitted to the advisory committee for acceptance or modification. After the student has taken the Graduation Record Examination, the outline is approved by the Graduate School, and the student is notified. He will then be regarded as a candidate for a degree. Information concerning the Graduate Record Examination may be obtained at the office of the Graduate School.

*Registration.* With the exception of students in law, medicine, and dentistry, all students who have bachelor's degrees must register with the Graduate School after their programs are approved by the department concerned.

*Scholarship.* A student shall be dropped from the Graduate School when, in the opinion of the Dean and the departments concerned, his work does not justify his continuance.

*Students on the Staff.* Assistants, associates, or others in the employ of the University are normally permitted to carry a maximum of six credits of graduate work if full-time employees, and a maximum of eleven credits of graduate work if half-time employees. The same regulation applies to teachers in the public schools.

*Graduate Study in the Summer.* Many departments offer graduate courses during the summer quarter, but these are addressed primarily to the candidates for the master's degree. Candidates for the doctorate are in general encouraged to devote the summer to work upon the thesis.

*Disqualification of Credits.* After a lapse of ten years any course taken for an advanced degree becomes outlawed.

## 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 such departments as are adequately equipped to furnish the requisite training. This degree is conferred only on those who have attained proficiency in a chosen field and who have demonstrated their mastery by preparing a thesis which is a positive contribution to knowledge.

The requirements for the degree of doctor of philosophy are as follows:

1. At least three years of graduate work, of which not less than one undivided academic year must be spent in residence at the University of Washington. 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.

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. Three times as many grade points as credits must be earned, work receiving the grade of "S" not to be counted toward a major or minor until the final examination.

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 fields and the specific courses in the major and minor fields. In so far as the examination is oral, it shall be before a committee (appointed by the Dean) of not less than three representatives of the major department, not less than one representative of each minor department, and a representative of the Graduate Council.

*The Final Examination.* An oral, or oral and written examination, before the same committee as above, 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, with right of appeal to the Graduate Faculty.

5. The preparation of a thesis, as stated above, embodying the results of independent research. If the thesis is of such a character, or falls in such a department, that it requires library or laboratory facilities beyond the resources of the University, the student will be required to carry on his investigation at some other university, at some large library, or in some special laboratory. This thesis must be approved by a committee, appointed by the major department, of which the instructor in charge of the thesis shall be a member.

Two copies of the thesis in typewritten form (or library hand) shall be deposited with the librarian for permanent preservation in the University archives at least two weeks before the date on which the candidate expects to take the degree. Printed instructions for the preparation of thesis manuscripts are available at the library. One copy shall be bound at the expense of the candidate. At the same time a digest of the thesis, not to exceed 3,000 words, must be filed in the office of the Graduate School.

The thesis, or such parts thereof, or such a digest as may be designated by the Council, shall be printed. The candidate shall contribute $25 to the publishing fund for theses, for which he shall receive 50 copies of his thesis if it is printed entire, or 50 copies of a digest of his thesis.

6. A statement certifying that all courses and examinations have been passed and that the thesis has been accepted and properly filed in the library shall be presented to the Dean at least one week before graduation. This statement must bear the signature of all major and minor instructors in charge of the student's work, and of the committee appointed by the major department to pass on the thesis.

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, either pure or applied. The thesis for this degree, however, 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 (subject to departmental requirements) in a major and one or two minor subjects and of a thesis which lies in the major field. The work in the major and minor subjects shall total not less than 36 credits of which 24 are usually in the major. The thesis normally counts for 9 credits in addition to the course work. Three times as many grade points as credits must be earned, work receiving the grade of "S" not to be counted toward a major or a minor until the final examination.

The requirement of a minor or minors may be waived but only on recommendation of the major department and with the consent of the Dean of the Graduate School.

A total of nine quarter credits may be allowed on the program for the master's degree either in transfer from another institution or in extension class courses or in credit by examination, or the nine credits may be distributed among the three, subject to the approval of the department concerned.

Elementary or lower-division courses and teachers' courses may not count toward either the major or minor requirements.

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 given.

4. An oral, or written, or oral and written examination in both the major and minor subjects, given by a committee consisting, so far as feasible, of all the instructors with whom the student has worked. If division of opinion exists among the examiners, the case shall be decided by the Graduate Council, with right of appeal to the Graduate Faculty.

5. The candidate's thesis must be approved by a committee of the major department; the instructor in charge of the thesis shall be a member of this committee. If the committee is divided in opinion, the case shall be decided by the Graduate Council, with right of appeal to the Graduate Faculty. At least two weeks before the date on which the candidate expects to take the degree, two copies of the thesis shall be deposited with the librarian for permanent preservation in the University archives. Printed instructions for the preparation of thesis manuscripts are available at the library. The cost of binding for one copy must be deposited with the thesis.

6. A statement certifying that all courses and examinations have been passed, and that the thesis has been accepted and properly filed in the library, shall be presented to the Dean at least one week before graduation. This statement must bear the signature of all instructors in charge of the student's work, and of the instructor in charge of the thesis.

The degrees of MASTER OF ARTS and MASTER OF SCIENCE in a particular field are given in the following technical subjects: chemical engineering, civil engineering, electrical engineering, mechanical engineering, ceramic engineering, ceramics, coal mining 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 and the College of Mines, see pages 140 and 144.

### 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, fisheries, geography, geology, Germanic languages and literature, microbiology, philosophy, physics, physiology, political science, psychology, Romanic languages and literature, Scandinavian languages and literature, sociology, speech, and zoology. For departments which have special requirements, see below.

The degree of *Doctor of Philosophy* is given in the following fields:

Anatomy, botany, chemistry, economics and business, education, English, fisheries, forestry, geography, geology, Germanic languages and literature, history, mathematics, microbiology, pharmacy, philosophy, physics, political science, psychology, Romanic languages and literature, sociology, and zoology. Some of these departments have special requirements for the degree. (See below.)

### Special Requirements in Certain Departments

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 satisfied the undergraduate requirements for a degree of Bachelor of Science in Chemistry as outlined in the College of Arts and Sciences. The course to be followed will be discussed with each student upon filing his application.

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 above 105.

The requirements for a graduate minor in Latin or Greek are the same as the requirements for an undergraduate major.

ECONOMICS AND BUSINESS. The department of economics and business awards two master's degrees, the *Master of Arts* and the *Master of Business Administration.*

1. For the *Master of Arts* in economics, the special requirements are as follows:
   a. A broad preparation in the allied social sciences.
   b. Completion of a course of study in three fields arranged in consultation with the student's advisory committee. One of the fields shall be economic theory. If a field is selected outside of economics and business, 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 10 credits of the required work in economics and business must be in courses listed for graduates only.
   c. If all 45 credits are taken in economics and business, 15 of the credits (exclusive of the thesis) shall be in the courses listed for graduates only.

2. For the *Master of Business Administration*, the special requirements are:
   a. Background subjects must include training in accounting, statistics, and business law. Other background work may be approved or required.
   b. All of the graduate work must be taken in economics and business, except that the student's committee may permit some course work outside of the department.
   c. The candidate's examination must cover three fields approved by his advisory committee.
   d. At least 15 credits must be in advanced work (exclusive of thesis) listed for graduates only or in research courses numbered 190-199, provided that not more than 10 credits of the 15 may be in research courses. When credit in research courses is given to fulfill these graduate requirements, the amount and quality of the work must be significantly above that of the undergraduate level established in the same courses. Graduate credit for a research course will not be given (1) if the course has been taken by the student as an undergraduate, or (2) if there is a graduate seminar in the same field.
3. Candidates for the master's degree with economics and business as a minor shall present a background of at least eighteen approved credits in economics and business. In addition, the candidate must present not less than twelve credits in approved advanced courses in economics and business.
4. For the degree of *Doctor of Philosophy* the candidate is expected to concentrate his graduate work in at least four specific fields, to be determined in conference. Economic theory, considered historically and critically, shall always be included. Candidates whose major and minor are both in economics and business must select five fields. The following fields are recognized for this purpose: (1) economic theory and history of economic thought, (2) monetary credit and credit institutions, (3) international economic policies, (4) marketing, (5) public finance and taxation, (6) public utilities and transportation, (7) labor and consumption, (8) accounting and management. In order to develop a program of work which best meets the needs of the individual student it may be necessary to require the election of courses in other departments, which may be counted in one of the candidate's fields but which are not alone of sufficient number to constitute a separate field.
5. A candidate for the doctor of philosophy degree who presents one minor which is in economics and business shall have a background of at least 35 approved credits in the field which he has selected. In addition to this, he must present for graduate credit not less than six approved courses in economics and business. The background subjects and graduate courses together must be adequate to give a satisfactory knowledge of the field.

   A candidate for the doctor of philosophy degree who presents two minors, one of which is in economics and business, must have a background of at least 18 approved credits in the field which he has selected. In addition to this, he must present for graduate credit not less than three approved courses in economics and business.
6. Students in economics and business desiring to specialize in far eastern can do so by taking their major fields in economics and business and a minor in one of the other fields under the direction of the Far Eastern Institute. The programs will be arranged for individual students according to their backgrounds and interests.

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 twenty 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 ten credits in each of two educational fields, to total 27 credits in education. Students must also register for thesis which counts for six additional credits.

   The minor requires a minimum of twelve 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. The completion of at least one course in six of the following fields in education:
      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 in comparative education
      H. College problems
      I. Curriculum
      J. Guidance and extracurricular activities
      K. Remedial and special education
   b. Specialization in two or more fields (selected from the six fields required above), so that the total credits in education, including the thesis and the required course (Educ. 291), shall be not less than thirty-six credits.
   c. The completion of a minimum of eighteen credits of advanced courses outside the department of education. Of these eighteen credits at least five must be in strictly graduate courses.
3. The special requirements for the degree of *Doctor of Philosophy* with a major in education are:
   a. Completion of seventy credits in graduate courses in education, including Educ. 287, 288, 289 (five to nine credits), 290, and 291.
   b. Specialization in three educational fields (see list of fields under *Master of Education,* 2a), with approximately fifteen credits in each field.
   c. A thesis of thirty to forty-five credits.
   d. One minor in a department other than education with thirty-five credits in graduate courses, or two minors in allied departments with twenty 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 thirty-five 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 (twelve to fifteen credits)
         (b) Three minor fields (six to nine credits in each)
         (c) Education 191 or 290, 291, and 287
         (d) Electives in education to total sixty 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 (nine to fifteen credits)
         (b) Science and Mathematics (nine to fifteen credits)
         (c) Foreign Language (nine to fifteen credits)
         (d) Social Sciences (nine to fifteen credits)
      (3) A thesis representing the equivalent of two full quarters' work (thirty credits).
   b. At least nine quarters of full-time graduate work are required, and 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 the degree of *Master of Science* in the respective engineering departments, provided the grade average of his last year of undergraduate work (not less than 45 quarter credits) be not less than "B" (3.0). At the discretion of an examining committee, any candidate from another university may be required to take a preliminary qualifying examination.

The several departments of the College of Engineering are empowered to award the degree of *Master of Science* to properly qualified candidates who satisfy the requirements for this degree as given in the curricula of the departments of Engineering. Requirements for the degree are:

1. A minimum of three quarters must be spent in residence at this University as a graduate student.

2. At least 45 quarter credits must be earned. Of these not more than nine quarter credits may be allowed on the program for the master's degree in credits earned (a) at another institution, (b) by advanced credit examination, or (c) in extension courses. The nine credits may be distributed among (a), (b), and (c) in any manner that meets the approval of the department concerned.

3. The average grade point for all courses submitted for the degree must be 3.0. Courses passed with a grade of "D" may not be counted.

4. No foreign language is required for the *Master of Science* degree in the College of Engineering.

5. The thesis for this degree must be an actual contribution to knowledge and must be approved by a committee of the major department; the instructor in charge of the thesis shall be a member of this committee. If the committee is divided in opinion, the case shall be decided by the Graduate Council. The library requirements for the thesis and certification thereof are the same as those for the degrees of master of arts and master of science.

6. The candidate must pass an oral, or written, or oral and written examination in the major subject and thesis. The examination shall be given by a committee consisting, so far as possible, of all of the instructors with whom the student has worked. If division of opinion exists among the examiners, the case shall be decided by the Graduate Council. Graduate work in the major field which was done elsewhere shall be included in the examination.

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, Economics and Business 109, 171, and 181, Geography 170 and 220, Political Science 164, Social Work 176, and Sociology 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; Economics and Business 143, 144, 145, 172; Civil Engineering 150, 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.

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 recommendations 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 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. Candidates for the master's degree with a major in English are required to offer the equivalent of an undergraduate major in English at the University of Washington, including the English senior examination. Candidates for the master's degree with a minor in English must present sufficient undergraduate work in English so that this work plus the graduate minor in English shall be the equivalent of an undergraduate major. Recommendation by the department of English requires at least ten credits earned in English at the University of Washington.

Candidates for the master's degree with a major in English language and literature are required to present a thesis, a minor, and thirty credits which shall include English 201, 202, 203 and fifteen credits in one graduate-year course. The graduate minor in English shall include twelve credits in advanced work of which at least five must be in English courses for graduates only.

Candidates for the master's degree with a major in composition may offer fifteen credits in English 156, 157, 158; or 184, 185, 186; or Journalism 173, 174-175 as the required graduate-year course but may not present creative writing as a thesis. The minor in composition may offer either English 156, 157, 158; or 184, 185, 186; or Journalism 173, 174-175.

The major and minor should be not only in related subjects but in related fields of the subjects chosen. Majors and minors may be taken in each of the divisions of English. All the work presented for the master's degree may be from one division of English if the student's previous training includes a broad selection of courses from other disciplines than English.

For the degree of *Doctor of Philosophy* the candidate must present (1) a reading knowledge of Latin to be satisfied by previous courses in Latin or by examination during the first year of graduate study; (2) Old English to be taken in class; (3) Middle English to be taken in class.

1. For the major in English the student must take at least 60 credits, not more than nine of which may be offered from courses that number below 200 and of which at least fifteen credits must be in English 201, 202, 203. The limitation of nine credits below 200 does not apply to courses in English language or public speaking or to technical courses in drama.

2. For one minor, the student must take 30 credits, or for two or more minors, he must take 15 credits in each.

3. In addition he is to take such other courses as are necessary to support the thesis.

The qualifying examination for this degree is to be passed one year before the candidate takes his degree, and is divided into definite parts.

1. Written examination on the period of the thesis and two related or adjacent periods.

2. Oral examination shall be of three parts: lecture or discussion, the minor, and general questioning.

a. On the day of the oral examination one and one-half hours before the hour set, the candidate is given questions or topics on the periods of English and American literature not treated in the written examination. From these questions or topics he shall choose three, and using one-half hour each without bibliographical aid, prepare a lecture or discussion for each of the three chosen. These discussions are then presented to the graduate faculty of the department at the beginning of the oral examination.

b. Then follows the minor examination in the form desired by the minor department.

c. General questioning on the written examinations, the lectures, or any other period of literature will close the examination.

3. The Old English language requirement may be satisfied by special examination immediately after the courses in the field have been finished or at the time of the preliminary examination either by oral or by written test.

FAR EASTERN. The Far Eastern Institute 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. In some departments both languages may be Far Eastern. The theses are supervised by the Institute and the department concerned.

The Far Eastern department offers the degrees of *Master of Arts* and *Doctor of Philosophy* in Far Eastern languages and literature. The candidate elects a linguistic major—Chinese, Russian, or Japanese—and offers a minor in certain prescribed courses in the field of Chinese, Russian, or Japanese studies.

All candidates for graduate degrees must fulfill the department's requirements for an undergraduate degree before work will be counted toward a graduate degree.

Candidates for the degree of *Master of Arts* in Far Eastern languages and literature must offer a total of 30 credits in either Chinese, Japanese, or Russian language courses, of which 20 credits must be in graduate courses, plus an additional 25 credits in Far Eastern subjects. The thesis shall count from four to nine credits.

Candidates for the degree of *Doctor of Philosophy* with a major in Far Eastern languages and literature must offer the equivalent of the master of arts in this field, plus an additional 36 credits in graduate Far Eastern language courses.

All candidates for graduate degrees in Far Eastern studies must offer a satisfactory knowledge, sufficient for research purposes, in the language of the area of their specialization.

Candidates for the degree of *Master of Arts* in Far Eastern studies must have a minimum of 45 upper-division credits in Far Eastern subjects, exclusive of undergraduate Far Eastern language courses, including eight credits in F.E. 220, 221, or 222. If the area major is in Chinese, the candidate must offer three credits in F.E. 210, 211, or 212. The thesis shall count from four to nine credits. No Ph.D. is offered in Far Eastern Studies. See Far Eastern Institute.

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, no minor being required. From four to nine 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; Renaissance 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.

For the graduate minor for the degree a minimum of fifteen credits in history shall be taken, of which ten must be in one historical subject and the other five 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 before the student may take the qualifying examination as a candidate for the degree.

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 it deems 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 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 seminar, 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 department. A Far Eastern language 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 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.

LIBERAL ARTS. Advanced work in the department of liberal arts may be taken for a minor for an advanced degree or as part of a graduate major in English, but it is not possible to make liberal arts a major for an advanced degree.

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. The course work must include at least six credits in each of the fields of algebra, analysis, and geometry.

The minor in mathematics for the master's degree requires at least twelve credits satisfactory to the department, at least nine 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 must include at least 15 credits in graduate courses in mathematical statistics.

*Doctor of Philosophy.* In addition to the requirements of the Graduate School, the department stipulates that 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 six credits in each of the fields of algebra, analysis, and geometry. For a partial minor, fifteen approved credits constitute a minimum.

MINING, METALLURGICAL, AND CERAMIC ENGINEERING. The degrees of *Master of Science in Mining, Metallurgical,* and *Ceramic Engineering,* respectively, will be conferred upon graduates of the College of Mines or of other engineering colleges of recognized standing, who comply with the regulations of the Graduate School and pass a formal examination open to all members of the faculty.

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 College of Mines may award the degree of *Master of Science* to properly qualified candidates, subject to the requirements of the Graduate School for that degree.

Mining and metallurgical research is under joint direction of the United States Bureau of Mines and the College of Mines. Credit is allowed for research carried on during the summer months.

PROFESSIONAL DEGREES. The College of Mines offers the professional degrees, *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 bachelor's 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 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.

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 three programs offered follow:

*Major in Composition:* (1) the equivalent of all music courses now required for the bachelor of arts in music with a major in composition; (2) twenty-five credits in graduate composition, which shall include one composition for a chamber music combination, one for orchestra or symphonic band, one for chorus, and the thesis; (3) twenty credits in approved electives.

*Major in Musicology:* (1) a bachelor's degree with the equivalent of 36 credits in upper-division music courses, including twelve credits in music history and literature; (2) ten credits in upper-division compostion; (3) fifteen credits in approved electives in music or related fields; (4) twenty credits in approved seminars and research including the thesis; (5) a reading knowledge of either French or German.

*Major in Music Education:* (1) a bachelor's degree with the equivalent of all music courses now required for the bachelor of arts in music with a major in music education; (2) two years of approved teaching experience, of which one must precede the graduate courses in music education; (3) eighteen credits in seminars and research in music education, including the thesis; (4) fifteen credits in approved music courses; (5) twelve credits chosen from approved upper-division courses.

Requirements for a minor in music when the master's degree is in another department: twelve 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, MATERIA MEDICA AND FOOD CHEMISTRY. The department of pharmacy offers the degrees of *Doctor of Philosophy* and *Master of Science in Pharmacy.* For the master's degree not less than twenty credits shall be taken in pharmacy. At least twelve of these 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 twenty-six preparatory credits in physical education and a course in physiology, and must offer at least twelve credits in advanced courses.

ROMANIC LANGUAGES AND LITERATURE. For the degree of *Master of Arts* with a major in one of the Romanic 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* entirely within the department, the requirements are: (1) the history of two Romanic languages; (2) the history of three Romanic 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 aesthetic perspective. In cases where a minor is added from another department, representative masterpieces of three Romanic literatures must be included in the requirements. In cases where a Romanic 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 146-147.

SOCIOLOGY. Majors for the degree of *Master of Arts* are required to take 24 credits of advanced work in sociology. At least ten credits of the advanced work must be taken in strictly graduate courses (200 series). Every graduate major shall become a member of the Departmental Seminar for at least one quarter but may receive no more than a total of six credits for work in this course.

Minors are required to offer at least 18 credits in preparation and to take a minimum of 18 credits, of which at least half must be in advanced work, including six credits of strictly graduate courses.

The application for the degree, showing the program of study for fulfilling the above requirements, is to be presented to the chairman of the department before the bginning of the second quarter of residence for graduate work.

The thesis is to be presented to the chairman of the thesis committee six weeks prior to the conferring of the degree. Acceptance is by formal approval of the department. In addition to library copies, one copy of the thesis is to be provided for the department files.

Proficiency in French or German must be certified at least three months before the degree is conferred.

Admission to final examination is made upon written request by the candidate and formal approval of the department. This examination for the major will cover two of the fields of the department, these being selected by the candidate. In addition, there will be an examination in the minor field. Minors in sociology will take a general examination covering the course work.

The fields of specialization include the following: I, Social Theory; II, Collective Behavior; III, Groups and Institutions; IV, Social Statistics and Research; V, Ecology and Demography; VI, Social Maladjustment; VII, a field in a related department (minor).

Before proceeding for the degree of *Doctor of Philosophy,* the degree of *Master of Arts* should normally have been taken. This requirement may be waived by formal action of the department.

Majors are required to take 36 credits of undergraduate and 60 credits of more advanced work in sociology. At least one-third of the graduate work must be in strictly graduate courses. Every graduate major is expected to attend the Department Seminar for which not more than a total of six credits can be allowed toward the degree.

Minors are required to take a minimum of 18 credits of undergraduate work and 30 credits of more advanced work, including 12 credits of strictly graduate courses.

A program of study for fulfilling the above requirements is to be presented to the chairman of the department before the beginning of the second quarter of residence for graduate work.

Admission to both preliminary and final examination is made upon written request to, and formal approval by, the department. The written preliminary examination will cover four fields of the department for majors; two fields of the department for minors; these being selected and indicated by the candidate. An oral examination following the written examination may be given at the discretion of the major or minor department.

## THE GRADUATE SCHOOL OF SOCIAL WORK

GRACE B. FERGUSON, *Director,* 300-F Commerce 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, the social insurances, and social research and public welfare administration.

*Admission.* Application forms must be secured from the office of the School, 300-F Commerce 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.

Persons who have had courses in other schools which are members of the American Association of Schools of Social Work may be admitted at the beginning of any quarter if their work has been satisfactory, provided application for admission has been made *at least one month* in advance of the opening date of the quarter. Persons without previous professional training are admitted in the autumn quarter only.

Requirements for admission are: (1) graduation from an accredited college or university with the equivalent of a "B" average; (2) well-rounded undergraduate preparation that has included at least 36 quarter credits in the social sciences, such as economics, political science, sociology, anthropology, psychology; (3) a year of 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 Field of Social Work, Growth and Development of the Individual (including medicine and psychiatry), Social Case Work, Family Case Work, The Child and the State, Child Welfare Case Work, Public Welfare, Social Work Research and Statistics, Field Work, Community Organization, and Social Group Work.

During the second year, emphasis is placed on preparation in the area of the student's field of interest( child welfare, family, medical, psychiatric, etc.), with additional courses required in Administration of the Social Insurances, Historical Backgrounds of Social Work, Professional Ethics, and Social Research.

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 and spring quarters of each year and requires three additional quarters to complete beyond the time required for the basic curriculum.

*Psychiatric Social Work Curriculum.* A course plan based on the educational requirements of the American Association of Psychiatric Social Workers is in process.

*The Master of Social Work Degree.* A graduate student who has satisfactorily completed three quarters of professional work in residence, and who has an acceptable thesis subject and plan of research, may, upon approval of the faculty of the Graduate School of Social Work, file an application for admission to candidacy.*

*Requirements.* They differ from the general requirements of the Graduate School only in that:

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 eighty-five quarter credits, nine of which are in thesis research. A reading knowledge of a foreign language is not required.

*Fellowships, Scholarships, Prizes.* See pages 69-70.

*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. *The American Association of Social Workers, Puget Sound Group, Washington Chapter, Education Loan Fund* is available to members.

* Detailed instructions regarding procedures in fulfilling degree requirements may be obtained from the secretary.

## 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 11 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. An asterisk follows the name of a faculty member who is on leave.

# SECTION III — ANNOUNCEMENT OF COURSES

## ANTHROPOLOGY

*Professor Gunther; Associate Professors Jacobs, Ray; Assistant Professor Garfield; Instructor King; Acting Instructor Elmendorf*

### *Elementary Courses Primarily for Freshmen*

‡51. **Principles of Anthropology.** (5) Evolution and heredity as applied to man; racial classification and its significance; the anthropological approach to language.

‡52. **Principles of Anthropology.** (5) Man's social customs, political institutions, religion, art, and literature.

‡53. **Principles of Anthropology.** (5) Prehistoric cultures, prehistory of modern peoples, material cultures of primitive peoples.

### *Intermediate Courses Primarily for Sophomores*

60. **American Indians.** (5) Ethnographic study with some consideration of their present condition. Upper-division credit for upper-division students.

63. **Africa.** (5) Prehistory, physical anthropology and ethnography with its American cultural and physical continuities. No pr. Upper-division credit for upper-division students.

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. No pr.

91. **Theories of Race.** (2) Survey of human heredity, causes for race differences; study of race mixtures; history of race theories. Not open to students who have had 51 or 152.

### *Upper-Division Courses*

101. **Basis of Civilization.** (3) Primitive mentality and culture patterns. Pr., 51, 52, or 53, or junior standing. Jacobs

107. **Methods and Problems of Archaeology.** (5) Includes field experience in this locality. Pr., 53. King

111. **Indian Cultures of the Pacific Northwest.** (3) Ethnographic study with special emphasis on the tribes of Washington. Pr., 52 or 60. Garfield

112. **Peoples of the Pacific.** (3) Ethnographic study; effects of European contacts. Gunther

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.

142. **Primitive Religions: Descriptive Survey.** (3) Pr., 52. Ray

143. **Primitive Art.** (3) Aesthetic theories, artistic achievements of preliterate peoples, with museum material for illustration. Gunther

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. Pr., 150. Jacobs

152. **Introduction to Anthropology.** (5) Its importance as a basis for other social sciences. Pr., junior standing. Not open to those who have had 51, 52, or 53. Gunther

160. **History of Anthropological Theory.** (2) Pr., 15 credits in anthropology. Jacobs

170. **Primitive Arts and Crafts.** (5) Study of techniques of primitive material culture. Pr., 52 or 60. Gunther, Ray

185. **Primitive Social and Political Institutions.** (5) Pr., 52. Ray

190, 191, 192. **Undergraduate Conference and Research.** (3) Pr., 20 credits in anthropology. Staff

### *Courses for Graduates Only*

204, 205. **Seminar in Methods and Theories.** (3, 3) Gunther

206. **Seminar in Indian Administration.** (3) Gunther

250. **Field Methods in Ethnography.** (3) Ray

251. **Field Methods in Archaeology.** (3) King

252. **Field Methods in Linguistics.** (3) Jacobs

290, 291, 292. **Graduate Research.** Staff

Not offered in 1947-1948: 105, Invention and Discovery in the Primitive World; 114, Peoples of Central and Northern Asia; 141, Primitive Literature; 153, Anthropology and Contemporary Problems; 186, 187, 188, Physical Anthropology.

‡Courses 51, 52, 53 may be taken in any order.

## ARCHITECTURE

*Professors Herrman, Gowen, Hill; Associate Professor Pries; Instructor MacLaurin; Acting Instructors Grevstad, Mattson, Morse, Olsen, Patterson, Steinbrueck*

**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

**4, 5, 6. Elements of Architectural Design.** (4, 4, 4) For interior design majors. To be taken with 7, 8, 9. MacLaurin

**7, 8, 9. Graphical Representation.** (1, 1, 1) Orthographic projection, shades and shadows, perspective. To be taken with 4, 5, 6.

**10, 11, 12. Architectural Drawing.** (4, 4, 4) Orthographic projection, shades and shadows, perspective, drafting and rendering techniques. MacLaurin

**40, 41, 42. Water Color.** (3, 3, 3) Still life and outdoor sketching. Pr., major in architecture. Art 32, 33, 34. 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., 12, Art 32, 33, 34. Gowen, Pries

**61, 62, 63. Materials and Their Uses.** (2, 2, 2) Pr., Physics 13.

**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

**120, 121, 122. Contract Drawings.** (2, 4, 4) Lectures and drafting-room practice. Pr., Arch. Design, Gr. II, C.E. 118.

**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. MacLaurin

**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, Gr. 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. Gowen

**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. MacLaurin

**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. MacLaurin

## ART

*Professors Isaacs, Hill, Patterson; Associate Professors Benson, Bonifas, Foote, Johnson, Penington; Instructors Curtis, DuPen, Hensley, Westphal; Associate Lowry; Acting Associates Alps, Anderson, Bangs, Brazeau, Davis, Fuller, Mason, Perrott, Spragg*

The School of Art reserves the right to retain student work for temporary or permanent exhibition

**1. Elementary Drawing and Design.** (5) For nonmajors.

**5, 6, 7. Drawing.** (3, 3, 3)

**9, 10, 11. Design** (3, 3, 3)

**12. History of Art Through the Renaissance.** (5) Not open to freshmen.

**15, 16. Laboratory Drawing.** (3, 3) Curtis

**20. History of Modern Sculpture.** (2) DuPen

**32, 33. Drawing for Architects.** (2, 2) Hill

**34. Sculpture for Architects.** (2) DuPen

**51. Figure Sketching.** (1) Sketching from the posed model. Pr., three credits in drawing. Spragg

**53, 54, 55. Design.** (3, 3, 3) Pr., 5, 6, 7, 9, 10, 11. Penington

**56, 57, 58. Drawing and Painting.** (3, 3, 3) Oil and water color. Pr., 5, 6, 7. Hill, Patterson

**62. Essentials of Interior Design.** (2) Illustrated lectures. Foote

**65, 66, 67. Drawing and Painting.** (3, 3, 3) Pr., 56, 57, 58. Hill, Patterson

**72, 73, 74. Sculpture.** (3, 3, 3) DuPen

80, 81, 82. Furniture Design. (3, 3, 3) Pr., 5, 6, 7, 9, 10, 11. Art 83 to be taken with 82. Foote

83. History of Furniture and Interior Styles. (2) Illustrated lectures. Foote

100. Elementary Crafts for Schools. (2) Johnson

101. Elementary Interior Design. (2) Practical projects, no perspective. Foote

102. Bookmaking and Book-binding. (2) Pr., junior standing in art. Johnson

103, 104. Ceramic Art. (3, 3) Pr., junior standing in art or permission. Bonifas

105. Lettering. (3) Pr., for art majors, 11; for nonmajors, permission.

106. Commercial Design. (3) Posters. Pr., 105. Benson

107, 108, 109. Portrait Painting. (3, 3, 3) Patterson

110, 111, 112. Interior Design. (5, 5, 5) For majors. General students by permission. Pr., 7, 11. Art 62 to be taken with 110. Foote

116. Design for Industry. (3) Pr., 53, 54, 55. Penington

122, 123, 124. Sculpture. (3, 3, 3) Pr., 72, 73, 74. DuPen

126. History of Painting Since the Renaissance. (2) Not open to freshmen. Isaacs

129. Appreciation of Design. (2) Historic and modern. Benson

130. Advanced Ceramic Art. (3) Pr., 104. Bonifas

132, 133, 134. Advanced Sculpture. (3, 3, 3) Pr., 122, 123, 124. DuPen

136, 137, 138. Sculpture Composition. (3, 3, 3) Pr., 74. DuPen

140. Textile Design. (3) Pr., 53, 54, 55. Penington

150, 151. Illustration. (5, 5) Book illustration; print making. Pr., senior in art or permission Penington

153, 154, 155. Advanced Ceramic Art. (3) Pr., 130. Bonifas

157, 158, 159. Design in Metal. (3, 3, 3) 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

163, 164, 165. Composition. (3, 3, 3) Pr., Life, 3 credits. Isaacs

166. Design. (3) Commercial application and techniques. Pr., 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) For majors. Pr., 112; Arch. 3, 6, 9, or equivalent. Foote

175, 176, 177. Advanced Painting. (3, 3, 3) Pr., 56, 57, 58. Isaacs, Patterson

179, 180, 181. Advanced Costume Design and Illustration. (2, 2, 2) Pr., 169, 170, 171. Benson

182, 183, 184. Asiatic Art. (2, 2, 2) 182: India; 183: China; 184: Japan. Savery

195, 196, 197. Senior Seminar. (1, 1, 1) Required of all seniors. Staff

*Courses for Graduates Only*

207, 208, 209. Portrait Painting. (3, 3, 3) Isaacs, Patterson

250, 251. Advanced Design. (3 or 5 each quarter)

260, 261, 262. Advanced Life Painting. (3 or 5 each quarter) Isaacs, Patterson

263, 264, 265. Composition. (3 or 5 each quarter) Isaacs

## 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

102. The Solar System. (3) Motions of the sun, moon, planets. Pr., calculus; pr. or concurrent, 1. Jacobsen

104. Spherical Astronomy. (4) Solutions of spherical triangles, applications to astronomy. Pr. or concurrent, 1. Jacobsen

105. Practical Astronomy. (4) Determination of latitude, longitude, time, azimuth. Individual sextant work. Pr. or concurrent, 1. Jacobsen

191, 192, 193. Astronomical Research. Research on current or special astronomical problems. Jacobsen

## BOTANY

*Professor Hitchcock; Assistant Professors Blaser, Naylor, Roman, Stuntz*

For those who expect to take no more than five credits of botany, courses 1, 2, 3, 5, or 8 are recommended. For those who expect to take ten credits of botany, courses 1 and 2; 1 and 3; 3 and 5; 1 or 5, and 16; 1, 8, and 25; or 1, 25, and 101 are recommended.

Courses 1, 5, 13, and 17 are beginning courses partially covering the same material, therefore only one of these courses may be taken for full credit. Botany 2 and 14 should be preceded by 1 and 13 respectively, not by 5.

### *Introductory Courses, No Prerequisite*

**1.** Elementary Botany. (5) The structure, physiology, and reproduction of the seed plant. Naylor

**3.** Elementary Botany. (5) Local flora. Hitchcock

**5.** Survey of Botany. (5) Outstanding generalizations concerning plants. Students who expect to continue with botany should begin with 1, 2, or 3. Naylor, Hitchcock

**8.** Heredity. (3) Not recommended for biology majors. Roman

**13, 14.** Pharmacy Botany. (2, 4) Vegetative and reproductive parts of plants. Blaser

**16.** Economic Botany. (5) Uses of plants by man. Stuntz

**17, 18, 19.** Forestry Botany. (3, 3, 3) 17: Structure and physiology of seeds and plants; 18: Morphology of fungi and reproduction of seed plants; 19: Forest flora, grasses, browse, and poisonous plants. Stuntz, Hitchcock

### *Intermediate Courses*

**2.** Elementary Botany. (5) Structure and relationships of the major plant groups. Pr., 1 or one year high school botany. Blaser

**24.** Plant Propagation. (2) Grafting and budding. (2) Two 2-hour labs. in greenhouse. Pr., 1 or equivalent. Muhlick

**25.** Plant Propagation. (2) General greenhouse practice. (2) Two 2-hour labs. in greenhouse. Pr., 1 or equivalent. Muhlick

**40.** General Fungi. (5) Structure and classification of all groups of fungi. Pr., 1 or 2 or equivalent. (Not open to students who have had Botany 68.) Stuntz

**43.** Elementary Plant Physiology. (5) Summary view of the general physiological activities in plants, particularly seed plants. Pr., 1, Chem. 2 or 22 or equivalent. (Not open to students who have had Botany 75.) Naylor

### *Upper-Division Courses*

**101.** Ornamental Plants. (3) Pr., 3 or equivalent. Blaser

**105, 106, 107.** Morphology. (5, 5, 5) Pr., 2 or equivalent. 105: Algae and bryophytes; 106: Vascular plants, lower groups; 107: Seed plants. Blaser

**108.** Introduction to Genetics. (3, lecture only, or 5) Pr., 10 credits in biol. sciences; not open for full credit to students who have had 8. 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. Roman

**111.** Forest Pathology. (5) Common wood-destroying fungi. Pr., 18, 40, or 105. Stuntz

**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. Probably not offered in 1947-48.

**129.** Plant Anatomy. (5) Tissues; origin and development of the stele. Pr., 1. Blaser

**131.** Bryology. (5) Pr., 2. Not offered in 1947-48.

**132.** Algology. (5) Pr., 2. Not offered in 1947-48.

**134, 135.** Taxonomy. (5, 5) The flowering plants. Pr., 3 or equivalent. Hitchcock

**140, 141, 142.** Mycology. (5, 5, 5) 140: Same as 40, but for upper-division students; additional work, to be assigned by instructor, is required; 141 and 142: Advanced mycology; pr., 40, 140, or 111. Stuntz

**143, 144, 145.** Plant Physiology. (5, 5, 5) 143: Same as 43 but for upper-division students; additional work, to be assigned by instructor, is required; 144: General survey of constructive metabolic processes; pr., 43 or 143, and Chem. 131; 145: General survey of destructive metabolism; pr. 144. Naylor

**151.** Range Plants. (3) Their recognition and economic importance. Pr., 3 or 19. Hitchcock

**180, 181, 182.** Plant Pathology. (5, 5, 5) Pr., 40. Stuntz

**199.** Special Problems in Botany. (1 to 15 each quarter) Pr., permission. Staff

*Courses for Graduates Only*

**200.** Seminar. (½)

**210, 211.** Phyto-plankton. (3, 3)

**220.** Problems in Fungi. (2 to 5 each quarter) — Stuntz

**233.** Research. (2 to 5 each quarter)

**250.** Advanced Algology. (2 to 5) Pr., 30 credits of botany.

**251.** Advanced Bryology. (2 to 5)

**275.** Problems in Plant Physiology. (2 to 5 each quarter) — Naylor

## CHEMISTRY

(For Chemical Engineering, see p. 163)

*Professors Benson, Norris, Powell, Robinson, Tartar, Thompson; Associate Professor Cady; Assistant Professors Dauben, Kuether, Lingafelter, Sivertz; Instructors Anderson, Gregory, Sherwood*

**1-2.** General Chemistry. (5-5) Open only to students without high school chemistry.

**3-4.** General Chemistry. (5-5) Open only to students without high school chemistry. For nonmajors requiring only 10 credits.

**5-6.** General Chemistry. (5-5) Pr., high school chemistry. For nonmajors requiring only 10 credits.

**8-9-10.** General Chemistry and Qualitative Analysis. (5-5-5) Offered by College of Pharmacy for pharmacy students only.

**21-22.** General Chemistry. (5-5) Pr., high school chemistry. For students who will continue with Chemistry 23.

**23.** Elementary Qualitative Analysis. (5) Pr., 2 or 22.

**24-25-26.** General Chemistry. (3-3-3) Engineers only. Pr., high school chemistry.

**37-38-39.** Organic Pharmaceutical Chemistry. (5-5-5) Offered by College of Pharmacy for pharmacy students only.

**101.** Advanced Qualitative Analysis. (5) Pr., 23. — Robinson

**102.** Advanced Qualitative Analysis. (4) For chemical engineers. Pr., 23. — Robinson

**104.** Food Chemistry. (4) Pr., 111 and 132. — Norris

**107.** Quantitative Analysis. (4) Gravimetric, for chemical engineers. Pr., 23. — Thompson

**108.** Quantitative Analysis. (4) Volumetric, for chemical engineers. Pr., 107. — Thompson

**109.** Quantitative Analysis. (5) Gravimetric. Pr., 23. — Thompson

**110.** Quantitative Analysis. (5) Volumetric. Pr., 109. — Thompson

**111.** Quantitative Analysis. (5) For nonmajors. Pr., 23. — Thompson

**131, 132.** Organic Chemistry. (5, 5) Pr., 22. — Dauben, Powell

**133.** Organic Chemistry. (5) For chemistry majors. Pr., 132. — Dauben, Powell

**134.** Qualitative Organic Analysis. (5) Pr., 132. — Powell

**135-136.** Organic Chemistry. (3-3) For home economics and nursing students. Pr., 4 or 6. — Powell

**140-141.** Elementary Physical Chemistry. (3-3) For nonmajors. Pr., 111. — Sivertz

**144.** Biological Chemistry. (5) For home economics students. Pr., 136. — Norris

**150.** Undergraduate Thesis. (2 to 5) Pr., senior standing in chemistry.

**155.** Oceanographical Chemistry. (3) Methods of analysis and the general physical and chemical properties of sea water and sea products. Pr., 111, 132, or equivalent. — Thompson

**156.** Oceanographical Chemistry. (3) Laboratory methods. Taken simultaneously with Chem. 155. — Thompson, Robinson

**161-162, 163.** Biological Chemistry. (5-5, 3) Pr., 111, 132. — Norris

**166.** Biochemical Preparations. (2 to 3) Pr., 162. — Norris

**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.

Teachers' Course in Chemistry. (See Education 75C.)

*Courses for Graduates Only*

**200.** Departmental Seminar. (No credit)

**201.** Chemical Thermodynamics. (3) The development of the First and Second Laws of Thermodynamics and their application to chemical systems. Pr., 182. — Tartar

202. Chemical Thermodynamics. (3) The Third Law of Thermodynamics. Introduction to Statistical Thermodynamics. Methods of measurement, calculation, and estimation of thermodynamic properties of systems. The use of tabulated thermodynamic data. Pr., 201. Tartar

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. Tartar

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. Catalytic surfaces. Pr., 182. Lingafelter

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, 212. Advanced Organic Preparations. (2, 2) Dauben

213. Chemical Thermodynamics. (3) Not open to those having 201. Pr., 182. Lingafelter

214. Phase Rule. (3) Development of the phase rule in connection with one-component and multi-component 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. The transition-state theory of chemical reactions as applied to reactions in gaseous and in liquid systems. Pr., 202. Lingafelter

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) The quantum theory of valence. 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

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 to 6) Mainly laboratory work with occasional conferences. Pr., 182. Thompson

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 to 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). Dauben

249. Graduate Seminars. (†) Offered as desired by various members of the staff.

250. Research. Maximum total credit: for master's degree, 9 cr.; for doctor's degree, 45 cr.

## CLASSICAL LANGUAGES AND LITERATURE

*Professors Densmore, Read, Thomson; Acting Associate Lisle*

### I. Greek

1-2, 3. Elementary Greek. (5-5, 5) Densmore

4, 5. Socrates. (3, 3) Based on Plato, Xenophon, Aristophanes. Should be accompanied if possible by 8 and 9. Pr., 3. Read

6. The World of Homer. (3) Readings from the story of Achilles. Pr., 5. Read

7. New Testament Greek. (3) Read

8, 9. Grammar and Composition. (2, 2) Pr., 3. Densmore

†To be arranged.

**51.** Greek Authors. (No credit) Sight-reading. Pr., 5 or permission. **Densmore**

**104, 105.** Drama. (3, 3) **Densmore**

**106.** Lyric Poetry. (3) **Densmore**

**191, 192, 193.** Literary Criticism and Sophocles. (3 to 5 ea.) Textual criticism. Aristotle and other ancient critics. Independent critical study of one play. Pr., Greek 106. A reading knowledge of Latin required. **Densmore**

*Courses for Graduates Only*

**201, 202, 203.** Greek Philosophers. (3 to 5 ea. qtr.) **Densmore**

**231.** Research in Special Authors. (3 to 5) For 1947-1948, Euripides. **Densmore**

### II. Latin

**1-2, 3.** Elementary Latin and Caesar. (5-5, 5) **Lisle**

**4, 5, 6.** Cicero and Ovid. (5, 5, 5) Pr., two years high school Latin or Latin 1-2, 3 in university. Review of grammar and syntax. **Lisle**

**21.** Cicero: De Senectute. (5) With grammar and composition. Pr., 6 or three and one-half years high school Latin.

**24.** Sallust. (5) Pr., as for 21.

**25.** Ovid: Metamorphoses. (5) Pr., as for 21. **Thomson**

**100.** Livy. (5) Pr., 21, 24, 25, or permission. **Thomson**

**101.** Horace. (5) Pr., as for 100. **Thomson**

**104.** Martial: Epigrams. (5) Pr., as for 100.

**106.** Syntax and Prose Composition. (3) Pr., 100 or equivalent.

**153.** Augustine: Confessions. (3) Pr., 100. **Read**

**154.** Lucretius. (3) Pr., as for 100. **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.

Teachers' Course in Latin. (See Educ. 75P.)

*Courses for Graduates Only*

**200.** Research. (†) **Staff**

**207.** Seneca: Moral Essays. (3) **Thomson**

**211.** Latin Novel. (3) **Read**

**287.** Medieval Latin. (3) Pr., permission. **Benham**

### 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.

**17.** Greek and Roman Art. (5)

**18.** Greek and Roman Mythology. (3)

**111.** Greek Civilization. (5) Research for advanced students. Pr., permission. **Densmore**

**113.** Greek Drama. (5)

Not offered in 1947-1948: *Greek* 101, 102, 103, History; 122, Grammar and Composition; 151, 152, 153, Plato; 211, 212, Hellenistic Literature. *Latin* 23, Virgil: Georgics and Bucolics; 22, Catullus; 102, Tacitus: Germania and Agricola; 103, Plautus and Terence; 107, Cicero: Letters; 109, Pliny: Letters; 156, Horace: Satires and Epistles; 165, Cicero: De Finibus; 166, Satire; 204, Tacitus: Histories; 214, Suetonius: Augustus; 218, Cicero: De Natura Deorum; 220, Elegy; 285, 286, Vulgar Latin; 288, Medieval Latin. *Antiquities in English:* Greek 11, Greek Civilization; Latin 11, Roman Civilization; Latin 13, Roman Literature; Latin 113, Masterpieces of Latin Literature.

## DRAMA

*Professor Hughes; Associate Professor Conway; Assistant Professor Harrington; Associates Carr, Gray, White Foley; Theatre Assistants Bell, Johnson, Valentinetti, Maxwell*

**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. **Johnson**

†To be arranged.

**104.** Scene Design. (3) Pr., 103. Conway

**105.** Theatrical Costume Design and Construction. (3) Maxwell

**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, or 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 115 or permission.

**121, 122, 123.** Advanced Acting. (3, 3, 3) Group acting. Styles in acting: tragedy, comedy; period, modern. Pr., 51, 52, 53. 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

**131.** Projects in Drama. (1 to 4) Staff

**134, 135, 136.** Children's Theatre. (3, 3, 3) Theory and methods. Participation in productions. Emphasis on directing. Pr., 53. Foley

**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

*Courses for Graduates Only*

**210, 211, 212.** Research in Drama. (5, 5, 5) Pr., permission. Hughes

**240, 241, 242.** Thesis Research. (†) Hughes

**For other courses in Drama, see English 154, 170, 171, 172, 217, 218, 219.**

## ECONOMICS AND BUSINESS

*Professors Preston, Burd, Cox, Dakan, Demmery, Engle, Farwell,* Gregory, Hall, McConahey, Mackenzie, Miller, Mund, Skinner, Smith; Professor Emeritus McMahon; Associate Professors Brown, Butterbaugh, Huber, Lorig, Simpson; Assistant Professors Buechel, Forrest, Hald, Lockling,* Mathy, Robinson, Roller, Sheldon, Sutermeister, Thayer, Walker, Wollett, Worcester; Lecturers Botzer, Burrus, Cluck, Draper, Fordon, Gifford, Hamack, Happ, Jordan, Murphy, Purdue, Stull; Instructor Brewer; Associates Cheever, Condon, Floyd, Klima, Moore, Peasley, Richins, Walderhaug, Yang*

E.B. 1-2 are required for majors in economics and business and should also be taken by students who plan to devote two courses to economics. Students who take but one course in economics must choose E.B. 4, *Survey of Economics and Business.* All advanced courses have at least one specified intermediate course or equivalent as a prerequisite. The following courses are open only to professional majors in the College of Economics and Business, except by permission of the dean of the college and the instructor concerned: 123, 126, 127, 132, 135, 136, 138, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 167, 170, 178, 193.

### Lower-Division Courses

**1-2.** Principles of Economics. (5-5) The first half of the course is primarily descriptive. It surveys the organization of the economic system and its institutions. Such topics as forms of business organization, banks, money, securities, and government and business are discussed. The second half is analytical. It deals with production costs and prices, and the distribution of the national income in the form of wages, interest, rents, and profits under conditions of competition and monopoly.

**3.** General Economics. (3) Condensation of E.B. 1-2 for students in engineering, forestry, chemistry, and pharmacy. Pr., sophomore standing.

**4.** Survey of Economics. (5) *Not* open to students in Economics and Business, economics majors in the College of Arts and Sciences, or others who expect to continue with Economics and Business courses.

**6.** Development of Economic Institutions. (5) Provides a knowledge of the growth and development of the major institutions of our society, both as to their European origins and their subsequent modifications. May be elected as a substitute for History 7. If elected it should precede E.B. 1-2. Mathy

Economic Geography. (See Geography 7.)

†To be arranged.

**12, 13, 14. Typewriting.** (1, 1, 1) Students who present one or more units of typewriting as entrance credit may not receive credit for E.B. 12. Hamack, 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 E.B. 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. No prerequisite. Murphy

**20, 21. Shorthand and Typewriting Review.** (2, 2) Open to all students who for any reason are not qualified to meet the prerequisites for E.B. 116. Students having had E.B. 18, or having presented more than one unit of shorthand for entrance credit, may not receive credit for 20 and 21. Happ

**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 interrelationships. Pr., sophomore standing. Botzer, Purdue, Wollett, Brown

**55. Business Law.** (5) Negotiable instruments, bailments, sales of personal and real property. Pr., 54. Purdue, Brown

**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 economics and business. Pr., sophomore standing and English requirement of respective college. Burrus, Wollett

**60. Statistical Analysis.** (5) Statistical methods and their application to practical economic and business problems. Pr., 1-2. Butterbaugh

**62, 63. Principles of Accounting.** (5, 5) The fundamental theory of accounts. Three lectures, four hours a week in laboratory. Pr., sophomore standing; 62 pr. for 63.

### Intermediate Courses

**101. Industrial Management.** (5) The internal organization of the business enterprise and topics related thereto; standards, incentives, labor-management cooperation, planning, etc. Pr., 1-2. Robinson

**103. Money and Banking.** (5) Functions of money; standards of value; principles of banking with special reference to the banking system of the United States. Pr., 1-2. Dakan, Preston

**104. Principles of Transportation.** (5) General survey of the elements of transportation and communication. Pr., 1-2. Sheldon, Brewer

**105. Economics of Labor.** (5) Economic factors in labor problems; economic and social aspects of labor and employing organizations; analysis of government measures with regard to labor problems. Pr., 1-2. Thayer, Buechel

**106. Principles of Marketing.** (5) Principles, processes, systems; middlemen and their functions; legislation. Pr., 1-2. Forrest, Burd, Miller

**107. World Economic Policies.** (5) Economic and commercial relations of nations; international economic organizations; basic principles and practices of foreign trade. Pr., 1-2. Skinner

**108. Principles of Insurance.** (5) Nature and business uses of the more important types of life, fire, marine, and casualty insurance and surety bonding. State regulation of insurance. Pr., 1-2. Stull

**109. Principles of Real Estate I.** (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., 1-2. Demmery

**110. Accounting Analysis and Control.** (5) Analysis and interpretation of accounting statements, with principles of valuation. Pr., 63. Gregory

**111. Advanced Theory of Accounts I.** (5) Application of accounting theory to business problems. Pr., 110. Draper

**112. Advanced Theory of Accounts II.** (5) Pr., 111. Draper

**115. Business Correspondence.** (5) Analysis of principles, including psychological factors; study of actual business letters in terms of these fundamentals. Pr., 1-2; Engl. 1, 2. Murphy

**116, 117. Secretarial Training:** (5, 5) Advanced shorthand and typewriting. Speed studies in taking dictation, and in transcription. General office practice and procedures. Hamack

**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 and one 1-hour laboratory daily. Pr., 117. Happ

**119. Office Management.** (5) Office organization; supervision of office functions; office personnel problems. Hamack

**120. Business Organization and Combination.** (5) Covers the field of business ownership organization and industrial concentration. Pr., 1-2. Dakan

### Advanced Courses

#### Banking and Finance

**121. Corporation Finance.** (5) Pr., 63 and 103. Dakan

**122. Principles of Investment.** (5) Pr., 103 or senior standing. Dakan

**123. Investment Analysis.** (5) Analytical study of typical industrial, public utility, and railroad securities; current corporation reports and prospectuses as a basis for determining investment values. Pr., 122. Dakan

125. **Advanced Money and Banking.** (5) Presupposes a knowledge of our existing financial organization and devotes attention to questions of banking and monetary policy. Pr., 103.

126. **Bank Credit Administration.** (3) Based upon selected cases of loans to Pacific Northwest industries and agriculture. Pr., 63, 103, and permission. Truax

127. **Foreign Exchange and International Banking.** (5) Foreign currencies and banking systems; foreign exchange markets; theory of international exchange; financing of exports and imports. Pr., 103. Huber

128. **Personal Insurance.** (5) Scientific basis of life insurance; types of policies; premium rates and reserves. Pr., 108. Stull

129. **Property Insurance.** (5) Coverage of risks; types of companies; standard fire insurance contract. Pr., 108.

130. **Foreign Trade of Latin America.** (5) Industrial and agricultural development, foreign trade, foreign exchange and investments. Pr., 107 or permission. Mathy

### Foreign and Domestic Commerce

131. **Principles and Practices of Foreign Trade.** (5) Analysis of foreign trade with reference to historical trends, composition and direction, prices, employment, standard of living, and national incomes. Government policies regarding foreign trade. Pr., 107. Huber

132. **Problems in Foreign Trade.** (5) Export and import operations; foreign market analysis; credits; trade channels; trade instruments; customs procedure. Economic analysis of specific problems in foreign trade. Pr., 107. Huber

133. **Retailing.** (5) Profit planning; markup; turnover; inventories; expense, stock, markup, and buying control; operating activities. Pr., 106. Miller

134. **Advertising.** (5) Relation to demand, cost, price, consumer choice, marketing; who pays; research; organizations; techniques; social controls. Pr., 106. Forrest

135. **Advanced Retailing.** (2) Analysis of retail problems from the point of view of management. Pr., 133 and marketing major. Miller

136. **Advanced Advertising.** (2) Analysis of advertising problems from the point of view of management. Pr., 134 and marketing major. Forrest

137. **Retailing Field Work.** (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., 133 or 134, and marketing major. Miller, Forrest

139. **Marketing Problems.** (3) Analysis of marketing problems from the point of view of management. Pr., 138 and permission. Miller

### Public Utilities and Transportation

140. **Airport Management.** (3) Economic aspects of airport planning. Financing airports. Airport operation and management. Pr., 146.

141. **Regulation of Public Utilities.** (5) Economic, legislative, and administrative problems of regulation. Pr., 104. Hall

142. **Advanced Economics of Public Utilities.** (5) Public utility rates and rate structure; costs; plant utilization and management policies. Hall

143. **Railway Transportation.** (5) Critical evaluation of problems of finance, operation, competition, combination, and regulation. Pr., 104. Sheldon

144. **Water Transportation.** (5) Problems of joint and special costs, competition, rate practices, rate agreements, shipping subsidies, intercoastal regulations. Pr., 104. Sheldon

145. **Highway Transportation.** (3) Treatment of the principles used in the traffic and operating divisions of highway transportation. Pr., 104. Sheldon

146. **Air Transportation.** (5) Economic principles, with particular reference to operating methods and costs; traffic promotion; schedule maintenance; safety; governmental regulation. Pr., 104. Sheldon

147. **Air Law and Regulation.** (3) National and international regulation of commercial aviation. Administrative and judicial control by Civil Aeronautics Board. Local regulation. The work of P.I.C.A.O. and I.A.T.A. Pr., 146. Sheldon

148. **Traffic Management.** (5) Problems of routing, expediting, auditing, demurrage, reconsignment, port and terminal facilities. Pr., as for 147. Brewer

149. **Marine Insurance and Carriers' Risks.** (5) Liabilities of rail and water carriers; plans of marine underwriters; insurable interests; warranties. Pr., 143 or 144 or 145 or 146. Farwell

### Management and Accounting

150. **Advanced Industrial Management.** (5) Case studies of companies from the viewpoint of the chief executive. Pr., 101. Robinson

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. Robinson

152. **Government Accounting.** (5) A study of accounting and financial reporting for municipal, county, state, and federal governments. Pr., 110. Lorig

153. **Accounting Systems.** (5) A thorough study of accounting and personnel problems to be considered in developing and installing accounting systems. Pr., 112. 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

156. **Income Tax Accounting.** (5) A study of Federal Revenue Acts and their application to individuals and different types of business organizations. Pr., 112. McConahey, 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., 157. McConahey

### Advanced Economics and Business

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., 105. Wollett

163. **Economics of Consumption.** (5) Historical development of human wants; standards of living; attempts to control consumption through individual and group action. Pr., 105. Worcester

164. **Labor Relations.** (5) Study of labor relations and collective bargaining in various branches of American industry, together with an analysis of experience here and abroad with government intervention in labor disputes. Pr., 105. Hopkins, Thayer

166. **Industrial Relations for Engineers.** (3) This is a summary course dealing with the principles and practices of the management of personnel in industry. For students in engineering. Pr., 3 and junior standing. Should be taken with or preceded by Psych. 123.

167. **Personnel Administration.** (5) Policies and techniques designed to achieve proper placement of individuals according to their interests, abilities, and skills; development in them of interest, efficiency, and cooperation. Mackenzie

169. **Real Estate II.** (5) Types of real estate uses and their characteristics; appraisals of farm and urban land and improvements; property rights, real estate finance; management of real property; leases. Pr., 109. Demmery

170. **Advanced Statistical Analysis.** (5) Analysis of problems and cases to develop ability in applying statistical technique to practical problems in economics and business. Pr., 60. Butterbaugh

171. **Public Finance and Taxation I.** (5) Growth of public expenditures; underlying principles and theory of various forms of public revenue; character of various forms of taxation; the principles and practices of public credit and of public financial administration. Pr., 103. Hall

172. **Public Finance and Taxation II.** (5) Analysis of fiscal thought; methods and problems in expenditure analysis; study of tax systems; equity and incidence in taxation; critical evaluation of the use of public credit and the custody and disbursement of public funds. Pr., 171. Hall

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. Demmery

178. **Law in Accounting Practice.** (3) Business associations and bankruptcy. Pr., 54, 55. Brown

181. **Economic Development of the United States.** (5) Special attention to manufactures, commerce, labor, finance, and agriculture. Pr., 30 upper-division credits in economics and business. Mathy

182. **Economic Problems of the Far East.** (5) Commercial policies, exchange and finance, distribution, transportation, labor, reconstruction problems, industrialization, relation of government to business, agriculture, the problems of a "dependent" economy. Pr., 107 or permission. Huber

183. **Economic Problems of China.** (5) Agricultural production; agrarian reform problems; local market economy; industrialization; taxation; currency and banking; foreign cooperation in Chinese development. Yang

185. **Advanced Economics.** (5) A study of markets, the making and control of prices, pricing formulas for industrial products, the laws of cost, and application of price analysis to wages, rent, interest, and profit. Pr., 120 university credits. Mund

187. **History of Economic Thought.** (5) The rise of modern capitalism, and the development of thought on the system of free enterprise. Special attention is given to the Mercantilists, the Physiocrats, Adam Smith, Ricardo, the Socialists, and to recent economic thought. Pr., 185, or senior standing and permission. Mund

188. **Comparative Economic Systems.** (5) A survey of the present economic systems of the leading nations. Emphasis to be placed upon a comparison of private competitive enterprise in democratic countries with socialism, communism, and fascism. Pr., 2 plus 10 cr. upper-division economics, or permission.

### Research Courses for Undergraduates and Graduates

193A, B, C. **Problems in Wholesaling, Retailing, and Advertising.** (3, 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., 134, 135, 136, permission. Burd

194A, B. **Research in Transportation.** (3, 3) Open only to qualified students in transportation who will be placed in part-time contact with transportation agencies. Pr., permission. Sheldon

195A, B, C. **Research in Management and Accounting.** (3, 3, 3) Open to qualified undergraduate and graduate students. Pr., permission. Gregory

**196A, B, C. Research in Public Utilities or Public Finance.** (3, 3, 3) Open to qualified undergraduate and graduate students. Pr., permission. Hall

**197C. Research in International Trade.** (3) Open to qualified undergraduate and graduate students. Pr., permission. Huber

**199B, C. Research in Real Estate and Business Fluctuations.** (3, 3) Open to qualified undergraduate and graduate students. Pr., permission. Demmery

*Courses for Graduates Only*

**200A, B, C. Thesis Seminar.** (No credit)

**202B. Graduate Seminar in Finance.** (5 to 7) Pr., permission. Preston

**204C. Graduate Seminar in Transportation.** (5 to 7) Economic aspects of current transportation problems. Pr., permission. Sheldon

**205C. Graduate Seminar in Public Finance.** (5 to 7) Pr., permission. Hall

**206B. Graduate Seminar in Labor.** (5 to 7) Theories and problems. Pr., one advanced course in labor, and permission. Hopkins

**208A. Graduate Seminar in Economics.** (5 to 7) Systematic review of the theories of value, price, and distribution; special reference to recent developments. Pr., permission. Mund

**210A, C. French and German Economists.** (3, 3) Pr., permission. Skinner

**214A. Graduate Seminar in International Economics.** (5 to 7) Pr., permission. Huber

**235. Graduate Seminar in Marketing.** (5 to 7) Social, economic, and business implications of current problems in marketing. Pr., one marketing course and permission. Burd

**251. Graduate Seminar in Administration.** (5 to 7) A study of the administrative function with emphasis upon organization, leadership, and control within the business unit. Pr., one advanced course in management, and permission. Mackenzie

**258. Graduate Seminar in Accounting.** (5) Pr., permission. McConahey

**Teachers' Courses in Economics and Business.** (See Educ. 75E, 75F.)

Not offered in 1947-1948: 155, Cost Accounting II; 165, European Labor Problems; 177, Social Insurance; 212, Seminar in Public Service Problems.

## EDUCATION

*Professors Powers, Bolton, Cole, Corbally, Draper, Dvorak,* Osburn, Stevens, Williams; Associate Professors Jessup, Hayden*

*An all-University grade-point average of at least 2.5 is prerequisite to and required in all Education courses leading to the Three-Year Secondary Certificate.*

**1. Education Orientation.** (2) Credit only to freshmen and sophomores. Required of all undergraduates planning to secure the Three-Year Secondary Certificate. Williams

### I. Elementary Courses (Upper-Division Credit)

**9. Psychology of Secondary Education.** (3) Pr., 1, Psych. 1. Powers, Batie

**30. Washington State Manual.** (0) For all applicants for Washington teaching certificates. Corbally, Jessup

**60. Principles of Secondary Education.** (3) Pr., 1, 9, 70, 71-72, 75, 90. Analysis of the problems of the junior and senior high school and the junior college. Draper

**70. Introduction to High School Procedures.** (5) Pr., 1, 9. Williams, Jessup

**71-72. Cadet Teaching.** (Semester basis, 5-3) Course 72 may precede or follow 71, but both courses must be taken to make a total of 8 credits for cadet teaching. Pr., 1, 9, 70, 90, 75 or approved equivalent, and all-University grade-point average of at least 2.5. Work is done in the Seattle schools; a student should leave three consecutive hours free in either the morning or the early afternoon for this course. Education 30 must be taken during the same quarter as Education 71. Assignments are made in room 113B Education Hall the first day of the fall quarter and the third Monday in January. 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) Education 30 must be taken the quarter immediately preceding or following 71N-72N. Pr., as for 71-72. 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

**90. Measurement in Secondary Education.** (2) Pr., 1, 9, 70. A study of measurement in today's schools; the construction of achievement tests; and principles underlying the application of test results. Hayden

*On leave.

### II. Intermediate Courses (Upper-Division and Graduate Credit)

**101.** Educational Psychology. (3) Theoretical principles and experimental backgrounds. Powers

**104.** Psychology and Training of Exceptional Children. (5) Atypical children studied from the point of view of the classroom teacher. Hayden

**120.** Educational Sociology. (3) Problems of education related to process of social evolution. Jessup

**121.** Remedial Teaching. (3) Osburn

**122.** Diagnosis in Education. (3) Osburn

**125.** Teaching Reading and Remedial Reading. (3) Osburn

**127.** Adult Education. (3) Corbally

**140.** School Supervision. (4) The improvement of school work through the in-service education of teachers. Jessup

**141.** Supervision of Elementary School Subjects. (4) Jessup

**145V.** Principles and Objectives of Vocational Education. (3) Aims and objectives, state plan, federal aid. Corbally

**146.** Extracurricular Activities. (3) An analysis of the extracurricular programs in the secondary schools. Draper

**147.** Principles of Guidance. (3) Corbally

**153.** Elementary School Curriculum. (4) Jessup

**180, 181, 182.** History of Education. (3, 3, 3) Social interpretation of the historic beginnings of education. Jessup

**183.** Historical Backgrounds of Educational Methods. (3) Williams

**184.** Comparative Education. (5) Modern education in foreign countries. Jessup

**188.** Philosophy of Education. (3) Jessup

**191.** Advanced Educational Measurement. (3) Pr., 90 or equivalent. Hayden

**193.** Character Education. (3) Powers

**197, 198, 199.** Individual Research. (2 to 5 ea. qtr.) Pr., consent of department. Indicate instructor and field. See 298, 299, 300. Staff

### III. Advanced Courses (Open to Graduates Only)

**201.** Advanced Educational Psychology. (3) Pr., courses in general and educational psychology. Powers

**235, 236, 237.** Organization of Supervisory and Administrative Programs. (5,5,5) Types of school organization; supervision and professional improvement of staff; pupil accounting; system of grading; classification and program of subjects. Cole

**260-261.** Seminar in Secondary Education and Curriculum. (2-2) Pr., 164-165 or permission. Draper

**265, 266.** College Problems. (5, 5) The new instructor and administrative organization. Stevens

**267, 268, 269.** Guidance and Counseling. (5, 5, 5) Counseling in colleges and public schools. Students must reserve time each week for duties in a counselor's office. Discussion and reports. Stevens

**270, 271.** Problems in Modern Methods. (3, 3) Williams

**275.** Improvement of College Teaching. (5) Stevens

**287, 288, 289.** Seminar in Philosophy of Education. (3, 3, 3) Williams

**291.** Methods of Educational Research. (3) Required of advanced degree candidates in Education. A study of practices and methods in conducting research. Designed to assist students in planning, organizing, and writing theses. Hayden

**298, 299, 300.** Individual Research. (†) Staff
Field of interest should be indicated by letter when registering. Indicate instructor.

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. Higher education
I. Curriculum
J. Guidance and extracurricular activities
K. Remedial and special education

**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 a 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

†To be arranged.

### *Special Methods Courses in Secondary Subjects*

**75A.** Art. (2) Pr., Educ. 1, 9, 70, senior standing in art, consent. Johnson

**75B.** Botany. (2) Pr., Educ. 1, 9, 70, and two years of botany. To be taken with or before 71. Blaser

**75C.** Chemistry. (2) Pr., Educ. 1, 9, 70, and at least 20 credits of college chemistry of average "B" grade. Tartar

**75D.** Civics. (2) Pr., Educ. 1, 9, 70.

**75E.** Commercial Course, Accounting. (5) Two credits count as education, three credits as economics and business. Pr., Educ. 1, 9, 70, and 30 credits of the 49 required for a major in commercial teaching, including 10 credits in accounting. O. E. Draper

**75F.** Commercial Course, Shorthand and Typewriting. (5) Pr., Educ. 1, 9, 70; E.B. 16-17-18, and permission. Hamack

**75H.** English. (5) Two credits count as education and three as English. Pr., Educ. 1, 9, 70. Emery

**75K.** French. (2) Pr., Educ. 1, 9, 70; French 103 and 158. Simpson

**75L.** German. (2) Pr., Educ. 1, 9, 70; German 120, or permission. Vail

**75M.** History. (5) Special reference to work of high school; two credits count as education and three as history. Pr., Educ. 1, 9, 70. Davis

**75NA.** Home Economics. (3) Two credits count as education. Pr., Educ. 1, 9, 70; 25 credits in home economics. McAdams

**75NB.** Home Economics. (5) Organization and methods for nurses, dietitians, internes, employees of hospitals or other institutions. Pr., 25 credits in home economics. McAdams

**75O.** Geography. (2) Pr., Educ. 1, 9, 70, and permission; Geog. 1 and 14 additional credits in geography.

Journalism. (See Journalism 125 for teachers' course.)

**75P.** Latin. (2) Pr., Educ. 1, 9, 70; 20 credits of college Latin.

**75Q.** Mathematics. (3) Two credits count as education, one as mathematics. Pr., Educ. 1, 9, 70; Math. 109 or equivalent. Jerbert

**75R.** Senior High School Music. (2) Pr., Educ. 1, 9; Music 98. Adams, Munro

**75U.** Physical Education for Men. (2) Pr., Educ. 1, 9, 70, and permission. Reeves

**75V.** Health and Physical Education for Women. (2) Pr., Educ. 1, 9, 70; P.E. 156, 162, 163, 164. Ruth Wilson

**75X.** Speech. (5) Pr., Educ. 1, 9, 70. Nelson

**75Y.** Spanish. (2) Pr., Educ. 1, 9, 70; Spanish 103 and 158. Simpson

**75Z.** Zoology. (2) Pr., Educ. 1, 9, 70; 20 credits in zoology.

## ENGINEERING

### I. AERONAUTICAL ENGINEERING

*Professors F. S. Eastman, Kirsten; Associate Professor V. J. Martin; Assistant Professors Dwinnell, Ganzer; Associate Rossman; Lecturer White*

**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 lect.; one combined lab. 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.

**121.** Lighter-than-air Craft. (3) Aerostatics; design and operation of rigid and nonrigid types. Pr., 102.

141. **Aircraft Propulsion.** (3) Screw-propeller theory, design, and performance calculation. Pr., 102, 171.

142. **Advanced Aircraft Propulsion.** (3) Pr., 141.

161. **Applied Differential Equations.** (3) Application of ordinary differential equations to the solution of various engineering problems. Vibrations; reaction propulsion. 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.** (1, 1, 1) Pr., senior standing.

191, 192, 193. **Research.** (2 to 5 ea. qtr.) Pr., senior standing.

*Courses for Graduates Only*

201. **Theoretical Aerodynamics I.** (3) Potential flow theory; circulation; rotation; downwash and ground effects; lift distribution; viscosity effects.

202. **Compressibility.** (3) Compressible fluid theory; shock wave phenomena; empirical results and applications.

203. **Dynamic Stability.** (3) Theory and calculations; application to design and flight testing.

204. **Aircraft Vibration and Flutter.** (3) Forced vibrations with damping; beam vibration; flutter phenomena theory and design applications.

205. **Theoretical Aerodynamics II.** (3) Spanwise and chordwise pressure distributions. Applications to wing layout and airfoil section design problems.

206. **Advanced Airplane Design.** (3) Advanced application of theoretical and experimental results to the aerodynamic design of the aircraft.

211, 212, 213. **Research.** (2 to 5 ea. qtr.)

217, 218, 219. **Graduate Seminar.** (†)

222. **Elastic Stability.** (3) Column and plate instability; stiffened panels with combined loadings; buckling of shells; elastic energy methods.

223. **Aircraft Structural Design.** (3) Selection of optimum type structure; design of spars and monocoque components; shear distribution and torsion; effects of shear lag.

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.

252. **Supersonic Aerodynamics.** (3) Mathematical approach to supersonic flow problems. Plane and oblique shock-wave phenomena. Experimental methods and applications.

Not offered in 1947-1948: 83, General Aeronautics; 151, Special Aeronautical Designs; 173, Aircraft Structural Mechanics; 221, Elasticity in Aircraft.

## II. CHEMICAL ENGINEERING

*Professor Benson; Associate Professor Moulton; Assistant Professors McCarthy, West*

51. **Industrial Chemical Calculations.** (2) Application of chemical units and laws in industrial calculations as applied to combustion processes. Two lectures. Pr., Chem. 23 or 26, Math. 33, or equivalents. **Moulton**

52. **Industrial Chemical Calculations.** (2) Material and heat balances over combustion furnaces and gas producers. Two lectures. Pr., 51. **Moulton**

53. **Industrial Chemical Calculations.** (2) Calculations for lime and cement kilns, sulphur compounds, crystallization processes. Two lectures. Pr., 52. **Moulton**

74. **Elementary Electrochemistry.** (2) Two lectures. Not open to chemists and chemical engineers. Pr., Chem. 26, Physics 98. **Moulton**

121. **Chemistry of Engineering Materials.** (5) Three lectures and two lab. periods. Pr., Chem. 111. **Benson, Moulton**

122. **Inorganic Chemical Industries.** (5) Development and control of inorganic unit processes. Three lectures and two lab. periods. Pr., Chem. 111. **Benson, Moulton**

123. **Organic Chemical Industries.** (5) Development and control of organic unit processes. Three lectures and two lab. periods. Pr., Chem. 111. **Benson, Moulton**

152. **Advanced Chemical Calculations.** (3) Mathematical study of chemical operations with solutions of typical engineering problems. Three lectures. Pr., Math. 41 or equivalent. **Moulton**

†To be arranged.

**171.** **Unit Operations.** (5) Flow of fluids, heat transfer, and drying. Three lectures and two lab. periods. Pr., 53. West

**172.** **Unit Operations.** (5) Distillation, adsorption, and extraction. Three lectures and two lab. periods. Pr., 171. West

**173.** **Unit Operations.** (5) Evaporation, mechanical separation, crushing and grinding, and crystallization. Three lectures and two lab. periods. Pr., 172. West

**174.** **Chemical Engineering Calculations.** (3) Applications of thermodynamics in chemical engineering unit operations and processes. Pr., Chem. 182.

**176, 177, 178.** **Chemical Engineering Thesis.** (1 to 5 ea. qtr.) An assigned problem is investigated as a research project, and a thesis written. Benson, McCarthy, Moulton, West

**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. Benson

**237.** **Chemistry of High Polymers.** (2) Fundamentals of substances with high molecular weight, including study of valance 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

**241, 242, 243.** **Advanced Unit Operations.** (3, 3, 3) Heat transfer; fluid flow; evaporation; drying; distillation; adsorption and extraction; chemical engineering thermodynamics. Three lectures. Pr., 173.

**244, 245. 246.** **Advanced Unit Operations.** (3, 3, 3) Special problems in advanced unit operations. Three lectures. Pr., 241.

**247.** **Industrial Electrochemistry.** (3) Theoretical and applied electrochemistry; electrodeposition and electrochemical processes. Three lectures. Pr., Chem. 182 or permission. Moulton

**249.** **Graduate Seminar.** (†) Offered as desired by various members of the staff.

**250.** **Research.** (†) Maximum total credit: for master's degree, 9 credits; for doctor's degree, 45 credits.

## III. CIVIL ENGINEERING

*Professors Van Horn, Farquharson, Harris, May, Miller, More, Tyler; Associate Professors Hennes, Moritz, Rhodes, Sergev, Smith; Assistant Professors Campbell, Chittenden, Collier; Instructors Chenoweth, Horwood, Jarvi, Mason, Meese, Mittet, Pendleton; 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. Preceded by or concurrent with Physics 97; 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. Sergev

**92.** **Mechanics.** (3) Mechanics of materials. Theory, analysis, and design of machine and structural members. Pr., 91 or permission. Sergev

**93.** **Mechanics.** (3) Dynamics and mechanics of materials, continued. Pr., 91, 92. Sergev

**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. 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., 112. 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., 114. Chittenden

**116, 117, 118.** **Structural Engineering for Architects.** (4, 4, 4) Girders, columns, and roof trusses in timber and steel; concrete slab, joist, column design, etc. Pr., junior standing in architecture, Math. 56, G.E. 48. Jensen

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†To be arranged.

### Transportation Engineering

**121.** Roads and Pavements. (3) Road-building methods and materials. Pr., junior standing in engineering. Hennes

**123.** Railway and Waterway Engineering. (3) Locomotive performance and train resistances; roadbed; railway location. Port development; breakwaters; channel control works. Pr., 113, 142. Hennes

**124.** Highway and Runway Design. (3) Theories of rigid and flexible pavements; roadway design; intersections. Airfield surfacing and drainage. Pr., 121. Hennes

**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) The principles of highway engineering as applied to the surfacing and drainage of airfields. Pr., senior or graduate standing; not open to civil engineering students. Hennes

**128.** Highway Administration. (3) Financing, planning, and operation of highways. Pr., graduate standing or permission. Hennes

### 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

**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

**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

**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. Van Horn, Tyler

**151.** Sanitation and Plumbing. (2) For architects. Hauan

**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

**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

### Engineering Materials

**162.** Materials of Construction. (3) Portland cement and concrete, concrete mixtures. Five hrs. lab. Pr., 92. Collier

**163.** Materials of Construction. (3) Strength and physical characteristics of timber, steel, and structural aluminum alloys. Five hrs. lab. Pr., 92. Smith

**166.** Soil Mechanics. (3) Engineering properties of soils; bearing capacity and settlement of foundations. Four hrs. lab. Pr., senior standing in engineering. Hennes

**167.** Earthwork Engineering. (3) Design, construction, and analysis of earthwork. Four hrs. lab. Pr., 166. Hennes

### Structural Analysis and Design

**171, 172, 173.** Structural Theory. (3, 3, 3) Stresses and deflections of trusses and rigid frames; the mechanics of reinforced concrete, steel, and wood members and connections. Pr., 92. Miller, Sergev

**175, 176, 177.** Structural Design. (3, 3, 3) Design of reinforced concrete, steel, and wood structures, members, and connections. Pr., 171 for 175; 172 for 176. Miller, Rhodes

**181, 182, 183.** Advanced Structures. (3, 3, 4) Stresses and deflections in structures and structural members; statically indeterminate cases. Seniors and graduates in civil engineering. Pr., 177. More, Miller

*Special Senior and Graduate Courses*

‡191, 193, 195. **Advanced Professional Design and/or Analysis.** (2 to 5 ea. qtr.)

‡192, 194, 196. **Research.** (3 to 6 ea. qtr.) Special investigations by seniors or advanced students under the direction of members of the staff.

209. **Engineering Relations.** (3) A study of business relations and economic conditions involved in engineering projects. Pr., senior or graduate standing.

*Courses for Graduates Only*

‡210, 212, 214. **Research** (2 to 5 ea. qtr.)

‡220, 222, 224. **Seminar.** (2 to 5 ea. qtr.)

221. **Theory of Elasticity.** (3) Sergev

223. **Advanced Strength of Materials.** (3)

225. **Elastic Stability.** (3) Sergev

298. **Thesis.** (3 to 5 credits ea. qtr., total not to exceed 9)

## IV. ELECTRICAL ENGINEERING

*Professors A. V. Eastman, Loew, Hoard, Lindblom, Shuck, G. S. Smith; Associate Professor Cochran; Assistant Professors Hill, Lewis; Instructors Palmer, Rogers; Acting Instructors Jacobsen, Robbins*

99. **Direct-current Circuits.** (5) Five hours lecture and recitation, three hours lab. Beginning course for E.E. majors on direct-current circuit theory, including Ohm's Law, Kirchhoff's Law, Thevenin's Theorem, Superposition Theorem, effects of temperature. Pr., Math. 33.

101. **Direct Currents.** (5) Three hours lecture and recitation, four hours lab. and problems. Short course in direct-current circuits and machinery for those who are not electrical engineering students. Pr., Physics 98, Math. 33.

105. **Electric Wiring.** (2) Two hours lecture and recitation. Special course for architects.

109. **Basic Field Theory.** (5) Four hours lecture and recitation, four hours lab. Basic study of magnetic and dielectric fields under static conditions. Simple transient phenomena in electric circuits. Pr., 99, Math. 41.

111. **Direct-current Machinery.** (3) Four hours lecture and recitation. Construction, operation, and characteristics of direct-current machinery. To be taken with 112. Pr., 109.

112. **Direct-current Machinery Laboratory.** (4) Eight hours lab. Experimental work on direct-current machinery. To be taken with 111.

121. **Alternating Currents.** (5) Three hours lecture and recitation, four hours lab. and problems. 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, four hours lab. and problems. Short course for those who are not electrical engineering students, covering vacuum-tube construction, rectifiers, amplifiers, oscillators, and other electronic phenomena. Pr., 121.

141. **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. Junior or senior elective. Pr., 109. Shuck

152. **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

154. **Design of Electrical Apparatus.** (4) Two hours lecture, six hours lab. Design of switchboards, transformers, alternators, alternating-current motors, etc. Pr., 152. Lindblom

159. **Alternating-current Circuits.** (5) Three hours lecture and recitation, four hours lab. Theory of single-phase and three-phase circuits including vector notation. Pr., 109.

161. **Alternating-current Machinery.** (4) Six hours lecture and recitation. Theory of transformers, induction motors, alternators, synchronous motors, single-phase motors. To be taken with 162. Pr., 111 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) Five hours lecture and recitation, 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, etc. Pr., 161.

170, 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.

‡Students registering for these courses must indicate their field of study by a letter symbol after the course number, for example: 193H. These engineering fields of study and their symbols are: Hydraulics (H), Materials (M), Structural (S), Sanitary (W), and Transportation (T).

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.

181. **Vacuum Tubes and Electronics.** (6) Five hours lecture and recitation, four hours lab. Fundamentals of vacuum tubes; theory of rectifiers and amplifiers; photoelectric cells; thyratrons; applications to power and communication fields. Pr., 159.

183. **Radio.** (6) Five hours lecture and recitation, four hours lab. Theory of vacuum-tube oscillators, modulators, detectors, and amplifiers; applications in radio and other high-frequency fields. Pr., 181.

185. **Communications Networks.** (6) Five hours lecture and recitation, 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.

190. **Radio-Telephone Transmitter Practice.** (2) Supervised study and practice in radio-telephone transmitter operation. Credit allowed only after student has passed U.S.F.C.C. first-class radio-telephone license examination. Pr., 183.

194. **Seminar.** (2-5)

195. **Electric Transients.** (4) Four hours lecture and recitation, three hours lab. Single and double energy transients in R, L, and C circuits; standing and traveling waves. Pr., 159. Smith

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

*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., 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

210, 212, 214. **Research.** (2 to 5 ea. qtr.)

221. **Advanced Transients.** (5) Three hours lecture and recitation, four hours lab. Transient phenomena in rotating machinery, transmission lines; corona; lighting. 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

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., 183. Cochran

261. **Wave Propagation.** (6) Five 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. Eastman

## V. GENERAL ENGINEERING

*Professors Wilcox, Warner; Associate Professors Brown, Rowlands; Assistant Professors Boehmer, Douglass, Engel, Jensen; Instructor Gullikson; Lecturer Bliven*

1. **Engineering Drawing.** (3) Orthographic projection; lettering. Should be preceded by or accompanied by solid geometry. Boehmer

2. **Engineering Drawing.** (3) Reading and execution of working drawings. Pr., 1. Douglass

3. **Drafting Problems.** (3) Descriptive geometry. Pr., 1, 2. Warner

7. **Engineering Drawing.** (3) Short course for forestry students. Warner

11. **Engineering Problems.** (3) Orientation course; training in methods of analyzing and solving engineering problems. Deals principally with dynamics. Pr., high school physics, advanced algebra. Brown

12. **Engineering Problems.** (3) Analytical and graphical statics. Pr., 1, 11, Math. 31. Jensen

**21.** Plane Surveying. (3) Methods, use of instruments, computations, mapping. U.S. public land surveys. Pr., 1, 2, or equivalent, and trigonometry. Engel

**47-48-49.** Theory of Building Construction. (3-3-3) Statics, strength of materials, and design of structural members and connections. Pr., Math. 56 and junior standing in architecture. Jensen

**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 Professor A. V. Hall; Assistant Professor Roberts; Steering Committee: A. V. Eastman, Chairman; Van Horn, Tymstra*

**E.B. 3.** Economics for Engineers. (3)

**E.B. 57.** Business Law. (3)

**E.B. 166.** Industrial Relations. (3)

**English B.** Spelling, Punctuation, and Grammar. (0) A noncredit course for students whose written work shows them insufficiently prepared for English 40 (or who fail to pass the admission test for English 40).

**English 40.** Engineering Report Writing. (1) Practice in accurate presentation of data in engineering reports; drill in good sentence structure and vocabulary. Pr., passing of test in the mechanics of writing.

**English 81.** Technical Writing I. (1) Principles of clear expression and of logical analysis; technical description, exposition of a process, and general exposition; order letters and letters of instruction; the laboratory report. Pr., English 40.

**English 82.** Technical Writing II. (1) Principles of convincing expression: adaptation of material to readers of unlike levels; analysis and evaluation of different points of view; argumentative writing; propaganda analysis; letters of adjustment and application. Pr., English 81.

**English 83.** Technical Writing III. (1) Studies in individual expression: analysis of superior writers widely varying in type; comparisons and contrasts; experimentation with different forms of expression, in an endeavor to develop the student's own characteristic style. Pr., English 82.

**English 85.** Technical Writing. (3) A course equivalent to English 81, 82, and 83 for students with schedules that are irregular. Pr., English 40.

**English 123.** Humanities I. (3) The background of civilization: earth, as viewed by astronomer, geologist, biologist, anthropologist; civilizations of the East. Readings in the works of outstanding thinkers; analysis and class discussion; training in speech and writing. Pr., English 83 or 85.

**English 124.** Humanities II. (3) Civilization in the West: Greece and Rome; the Medieval synthesis; the three modern cycles of advance. Readings in great literature; analysis and class discussion; training in speech and writing. Pr., English 123.

**English 125.** Humanities III. (3) World civilization: contemporary ideas and attitudes; trends in science, economics, and politics, in music, art, and literature; study of current magazines; training in speech and writing. Pr., English 124.

**English 194.** Nontechnical Reading I. (1) Individual reading: literary and informational reading, planned to meet the greatest needs of the individual student; brief outlines and comments; weekly conference. Pr., English 83 or 85.

**English 195.** Nontechnical Reading II. (1) Great names in literature: readings in important works of the past or of the present, and in the works of their interpreters and critics; brief reports and outlines; weekly conference. Pr., English 194.

**English 196.** Nontechnical Reading III. (1) Contemporary literature: current views; new outlooks in science, literature, or art; brief reports and outlines; weekly conference. Pr., English 195.

**Psychology 4.** Industrial Psychology. (3)

## VII. MECHANICAL ENGINEERING

*Professors Eastwood, McIntyre, McMinn, Schaller, Tymstra, Wilson, Winslow; Associate Professor Mills; Assistant Professor Cooper; Instructors Crain, Guidon, Hoye, Snyder, Sullivan*

**53.** Manufacturing Methods. (1) Principles of the founding of ferrous metals. Three hours lab. Schaller, Snyder, Sullivan

**54.** Manufacturing Methods. (1) Mechanical and heat treatment of steel; gas and electric welding. Three hours lab. Schaller, Snyder

**55.** Manufacturing Methods. (1) Fundamental theory and practice of machining operations on iron and steel. Three hours lab. Sullivan, Schaller

**81.** Mechanism. (3) Operation of machines involving the transmission of forces and the production of determinate motions. Three lectures. Pr., G.E. 3, Math. 32. McIntyre, Cooper, Crain

**82.** Heat Engines. (3) Various steam apparatus used in modern steam plants; construction, use, and reason for installation. Not open to freshmen. Three lectures. Pr., G.E. 2. Cooper, Crain, Guidon, Hoye

**83.** Steam-engineering Laboratory. (3) Calibration of instruments; horsepower tests; complete engine and boiler test. Two lectures, three hours lab. Preceded or accompanied by 82. McIntyre, Cooper, Crain, Hoye

**104.** Manufacturing Methods. (2) Founding, welding, and machining of nonferrous metals. Three hours lab. Schaller

**105.** Advanced Manufacturing Methods. (1) Individual problems of machining operations on mechanical equipment. Three hours lab. Pr., 55. Sullivan

**106.** Advanced Manufacturing Methods. (1) Study of machining problems from the standpoint of production. Three hours lab. Pr., 105. Sullivan

**107.** Production Planning. (1) Design and equipment of a representative manufacturing plant. Three hours lab. Pr., 106. Schaller

**108.** Production Management. (3) A study of the location, operation, and organization of manufacturing plants. Three lectures. Schaller

**109.** Factory Cost Analysis. (3) Analyzing shop operations from the standpoint of manufacturing costs. Three lectures. Schaller

**110.** Heating and Ventilation. (2) Abridged for architecture students. Two lectures. Pr., junior standing in architecture. Eastwood

**111, 112.** Machine Design. (3, 3) Six hours lab. Pr., C.E. 92. Tymstra, Cooper, Crain, Guidon, Hoye

**113, 114.** Machine Design. (2, 2) Advanced problems. Six hours lab. Pr., 112. Winslow, Tymstra

**115.** Steam-engine Design. (3) Computations and drawings. Six hours lab. Pr., 114. Winslow

**123, 124.** Engines and Boilers. (3, 3) Generation and use of steam in various types of boilers and engines. Three lectures. Pr., 83; preceded or accompanied by C.E. 91. Winslow

**151, 152.** Experimental Engineering. (3, 3) Continuation of 83, involving more extended and complete investigations. Six hours lab. Pr., 83. Wilson, McIntyre

**153.** Internal-combustion-engine Laboratory. (3) Tests and investigations on various internal combustion units. Six hours lab. Pr., 198. McIntyre

**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. 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. Schaller

**167.** Engineering Materials. (3) Properties of the various materials used in engineering construction. Two lectures, three hours lab. Pr., C.E. 92. McMinn, Mills

**182.** Heating and Ventilation. (3) Various systems of heating and ventilating methods with designs. Three lectures. Pr., 82. Eastwood

**183.** Thermodynamics. (5) Fundamental principles underlying the transformation of heat into work; special application to engineering. Five lectures. Pr., 82, junior standing in engineering. Eastwood, McMinn, Tymstra

**184.** Power Plants. (5) Design of steam power plants, involving their location, building, prime movers, and power transmission. Five lectures. Pr., 83, 123. Winslow, Cooper

**185.** Naval Architecture. (3) Theory of naval architecture. Displacement; stability; strength; construction. Three lectures. Pr., junior standing.

**186.** Naval Architecture. (3) Theory of naval architecture. Displacement; stability; strength; performance. Six hours lab. Pr., 185.

**187.** Naval Architecture. (3) Applications of principles of naval architecture. Calculations and design. Six hours lab. Pr., 112, 186.

**188.** Marine Engineering. (3) Application of mechanical engineering to ships, including propulsion. Three lectures. Pr., 186.

**189.** Refrigeration. (3) Thermodynamics of refrigeration and air-conditioning processes. Two lectures, three hours lab. Pr., 183. McMinn

**191, 192, 193.** Research. (2 to 5 ea. qtr.)

**195.** Thesis. (2 to 5) Investigation, design, or experiment. To be taken in the senior year. Wilson

**198.** Internal-combustion Engines. (3) Analysis and practice; stationary, marine, automobile, airplane, and diesel engines. Three lectures. Pr., 82. Wilson

**199.** Internal-combustion-engine Design. (3) Calculations and plans for the design of a given type of engine. Six hours lab. Pr., 198. Wilson

*Courses for Graduates Only*

**200.** Vibrations of Machinery. (3) Mathematical investigations of vibration phenomena with emphasis on applications to operating conditions of machines. Elective for approved seniors and graduates. Three lectures. Winslow

**202.** Advanced Engineering Materials. (3) Their properties, including metallographic, magnetic, and X-ray methods of inspecting and testing. Two lectures, three hours lab. Pr., 167. McMinn

**204.** Diesel Engines. (2) Analysis and practice. Diesel engines and gas turbines. Two lectures. Pr., 198. Wilson

**211, 212, 213.** Research. (3, 3, 3)

## ENGLISH

*Professors Griffith, Benham, Blankenship, Cox, Harrison, Hughes, Taylor, Winther; Associate Professors Cornu, Eby, Hall, Lawson, Savage, Stirling, Zillman; Assistant Professors Bostetter, Burns, Emery, Gillette, Kahin, Nix, Pellegrini, Person, Redford, Roberts; Instructors S. F. Anderson, Beal, Brown, Burgess, Colton, Ethel, Guberlet, Hilen, Kincaid, Kuhn, Mark, Vickner, Walters, Willis, Yaggy; Associates V. Anderson, Butterworth, Collingwood, Harris, Hemenway, Hunner, Huston, Kulisheck, MacKay, Morrison, Pittenger, St. Clair, Stubbs, Sylvester, Thompson, Thorpe; Lecturer Sperlin; Librarians Gilchrist, Hanson, Young*

*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 168.)

**A.** Elementary Composition. (No credit) For those who fail in entrance test for 1. Lawson in charge

**S.** English for Foreign Graduate Students. (No credit)

**1, 2, 3.** Composition. (3, 3, 3) Includes also methods of collecting material for longer papers; the study of evidence, fallacies, and proof; analysis of modern literature. Lawson in charge

**7.** Composition. (5) For forestry students only.

**31, 32, 33.** World Literature. (2, 2, 2) Readings from an anthology of classical (Greek and Roman), medieval, and modern literature.

**51, 52, 53.** Advanced Exposition. (3, 3, 3) Upper-division credit for upper-division students. Pr., 1, 2, 3, or equivalent. Person

**54.** Introduction to Nonfictional Writing. (3) Biographies, magazine and feature articles, and expository papers. Upper-division credit for upper-division students. Pr., 1, 2, 3, or equivalent.

**55, 56.** Advanced Writing. (3, 3) A student in any department may present material in the various forms of writing, or may write on a special subject, or may study writing as it is related to his major field. Recommended to English majors and others. Upper-division credit for upper-division students. Pr., 1, 2, 3, or equivalent.

**57.** Introduction to Modern Poetry. (5) Zillman

**58.** Introduction to Fiction. (5) Narrative poems, short stories, novels, plays. Upper-division credit for upper-division students.

**61, 62, 63.** Verse Writing. (2, 2, 2) Pr., 1, 2, 3. Zillman

**64, 65, 66.** Literary Backgrounds. (5, 5, 5) The most important English classics, their appreciation, literary forms, and historical relations. Grade of "A" or "B" grants upper-division credit to an upper-division student for the quarter in which the grade is earned.

**67, 69.** Survey of American Literature. (3, 3) Blankenship, Brown, Hilen

**70.** Advanced English. (3) For students in nursing at Harborview Hospital.

**72, 73.** Introduction to Modern Literature. (3, 3) Essays, poetry, novel, and drama.

**74, 75, 76.** Dramatic Composition. (3, 3, 3) Experimental creative work. Upper-division credit for upper-division students. Pr., 1, 2, 3, or equivalent. Redford, Savage

**77, 78, 79.** Narrative Writing. (3, 3, 3) Upper-division credit for upper-division students. Pr., 1, 2, 3, or equivalent.

**96.** The Bible as Literature. (5) Upper-division credit for upper-division students. Benham

**101.** Modern Reading. (3 to 5) For students in technology; reading in nontechnological fields. Hall

**102, 103.** English for Engineers. (3, 3) For students in the colleges of Engineering and Mines; representative authors of the past and present. Hall

**104.** Modern European Literature. (5) Harrison

**105.** Modern English Literature. (5) Harrison

**107, 108, 109.** Nontechnical Reading. (1, 1, 1) For students in the colleges of Engineering and Mines. Hall

**110, 111, 112.** Advanced Verse Writing. (2, 2, 2) Pr., 61, 62, 63. Zillman

**117.** History of the English Language. (5) Growth and development of the English language from Anglo-Saxon times to the present. Open to sophomores; 180 may be substituted for this course. Person

**120.** Modern Poetry. (5) Zillman

**131, 132, 133.** Advanced Nonfictional Writing. (5, 5, 5) Pr., 54. Burns

**137, 138, 139.** Advanced Short Story Writing. (5, 5, 5) Pr., 77, 78, 79, or permission. Harris, Redford

**140.** Social Ideals in Literature. (5) Model commonwealths. Literature and society. Benham

**144, 145.** Eighteenth-century Literature. (5, 5) 144: Swift, Pope, Defoe, Addison, and Steele; 145: Doctor Johnson and his circle; the preromantics. Cox, Cornu

**147, 148, 149.** Great English Novels. (3, 3, 3) Winther

**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. Griffith, Butterworth

**153, 154. English Literature: 1476-1642.** (5, 5) 153: The Renaissance; 154: non-Shakespearean Elizabethan drama. Taylor

**156, 157, 158. Novel Writing.** (5, 5, 5) Pr., 77, 78, 79, or permission. Savage

**161, 162, 163. American Literature.** (5, 5, 5) 161: Exclusive of New England; 162: New England; 163: Twain, Howells, James. Blankenship, Burns, Harrison

**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 Spensereans, the cavalier poets, the metaphysical poets; 168: Milton; 169: Dryden, Bunyan, Locke, the dramatists, the lyric poets. Ethel, Benham

**170, 171, 172. Shakespeare.** (5, 5, 5) 170: Introduction; 171: Comedies and Histories; 172: Tragedies and Romances. Pr., 170 for 171 and/or 172. Kahin, Pellegrini, Stirling, Taylor

**174, 175, 176. Late Nineteenth-century Literature.** (5, 5, 5) Pr., 174 for 175. Winther

**177, 178, 179. Early Nineteenth-century Literature.** (5, 5, 5) Pr., 177 for 178. Bostetter, Cox, Zillman

**180, 181, 182. Old English Language.** (5, 5, 5) Anglo-Saxon classics in the original. Butterworth

**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

**187. English Grammar.** (3)

**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 Romanic Languages.

### *Courses for Graduates Only*

**201. Graduate English Studies.** (5) Required of candidates for the master's degree. Griffith

**202, 203. Literary Criticism.** (5, 5) Required of candidates for the master's degree. Winther

**204, 205, 206. Chaucer.** (5, 5, 5) Required of candidates for the doctor's degree. Griffith

**207, 208. Fifteenth-century Literature.** (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. Benham

**209. Sixteenth-century Literature.** (5) The Renaissance and Spenser. Taylor

**210. Shakespeare's Contemporaries.** (5) Taylor

**217, 218, 219. Shakespeare.** (5, 5, 5) Taylor

**221, 222, 223. Seventeenth-century Literature.** (5, 5, 5) Benham

**224, 225, 226. American Literature.** (5, 5, 5) Eby

**230, 231, 232, 233. Old English.** (5, 5, 5, 5) Anglo-Saxon grammar, Old English prose and poetry; Middle English language; Beowulf. Required of candidates for the doctor's degree. Butterworth

**238, 239, 240. Early Nineteenth-century Literature.** (5, 5, 5) Cox

**241, 242, 243. Victorian Literature.** (5, 5, 5) Winther

**244, 245, 246. Eighteenth-century Literature.** (5, 5, 5) Cox

**250, 251, 252. Thesis Research.** (†) Student should not enroll for this course until he has chosen a thesis subject.

## FAR EASTERN

*Professor Taylor; Visiting Professors Carsun Chang, Karl A. Wittfogel, Wang Kan-yu; Associate Professors Michael, Schultheis, Spector, Tatsumi, Williston; Assistant Professors Shih, Yang; Instructors Chu, Gershevsky, Hsu, Pahn, Sunoo; Research Associate Wu; Associates Chi, Lavaska, Maki,* Matsushita*

### The Far Eastern Institute

**10. Survey, Problems of the Pacific.** (5) Taylor

**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. Schultheis

**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. Tatsumi

**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. Sunoo

**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.

†To be arranged.
*On leave.

**90.** History of China. (5) Survey of China's history from the earliest times to the present, with emphasis on the development of Chinese society. Schultheis

**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.

**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, Sunoo

**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.

**110.** Survey, Problems of the Pacific. (5) Taylor

**143.** Chinese Social Institutions. (5) Yang

**144.** Chinese History—Earliest Times to 221 B.C. (5) History of pre-imperial China. Pr., 90 or upper-division standing. Yang

**145.** Chinese History—221 B.C. to 906 A.D. (5) History of the development of the imperial Chinese state. Pr., 90, 144, or upper-division standing. Schultheis

**146.** Chinese History—906 A.D. to 1840 A.D. (5) History of the Wu Tai, Sung, Yuan, Ming, and early Ch'ing periods. Pr., 90, 144, or upper-division standing. Michael

**147.** Modern Chinese History. (5) Survey of modern Chinese society from 1840 to the present. Pr., 90 or upper-division standing. Schultheis

**148.** History of Republican China. (3) Taylor

**153.** Japanese Social Institutions. (5) Steiner

**157.** Modern Japanese History. (5) Survey of the beginnings and development of modern Japan, and Japan's transformation under American rule.

**167.** Modern Russian History. (5) Survey of the development of modern Russia, from the Revolution to the present.

**168.** Russia in Asia. (3)

**190.** Undergraduate Research. (3 to 5) For F.E. majors. May be repeated for credit. Pr., permission. Staff

**193.** Contemporary China. (3) Political, social, and economic situation in China. Wang

**199.** Seminar on China. (3) Survey of the principal literature on China in Western languages; introduction to the methodology of Chinese studies and Chinese historiography. Pr., permission. Schultheis

*Courses for Graduates Only*

**210, 211, 212.** Seminar on China. (3, 3, 3) Chinese historiography. Pr., permission. Schultheis

**220, 221, 222.** Seminar in Eastern Asia. (4, 4, 4) Taylor

**223.** Russian History and Government. (3)

**225, 226.** Seminar on Far Eastern Diplomacy. (3, 3) Staff

**280, 281, 282.** Research. (†) Pr., permission. Staff

**290, 291, 292.** Thesis. (2 to 5 ea. qtr.) Staff

For courses offered in other departments by the faculty of the Far Eastern Institute, see E. & B. 183; Philosophy 196; Pol. Sci. 114, 129, 132, 147, 166, 169.

For other courses on the Far East, see Anthrop. 112; Art 182, 183, 184; E. & B. 182; Geog. 103, 132, 133, 203.

## Chinese

**1.** Chinese Language. Intensive A. (10) Chu, Staff

**3.** Chinese Language. Intensive B. (10) Pr., 1 or equivalent. Chi, Staff

**101.** Chinese Language. Intensive C. (10) Pr., 3 or equivalent. Chu, Staff

**102, 103, 104.** Advanced Colloquial Chinese. (5, 5, 5) Pr., 101 or equivalent. Shih

**105, 106, 107.** Elementary Literary Chinese. (5, 5, 5) Pr., 101, or equivalent. Schultheis

**108.** Chinese Reference Works and Bibliography. (3) Introduction to the methodology of Sinology. Pr., 101 or equivalent. Schultheis

**155.** Literature of China in Translation. (5) Shih

*Courses for Graduates Only*

**200.** The Morphology and Syntax of Literary Chinese. (5) Shih, Schultheis

**201.** Chinese Bibliography. (3) Seminar on the problems of the exploitation of Chinese source materials. Schultheis

**202, 203, 204.** Readings in Literary Chinese. (5, 5, 5) May be repeated for credit. Staff

**205.** Structure of Chinese Ideographs. (3 to 5) Staff

†To be arranged.

### Japanese

1. Japanese Language. Intensive A. (10) — Matsushita, Staff
3. Japanese Language. Intensive B. (10) Pr., 1 or equivalent. — Tatsumi, Staff
101. Japanese Language. Intensive C. (10) Pr., 3 or equivalent. — Matsushita, Staff
102, 103, 104. Advanced Japanese Language. (5, 5, 5) Pr., 101 or equivalent. — Staff
105, 106. Advanced Japanese Language. (5, 5) Pr., 101 or equivalent. — Tatsumi
107. Advanced Japanese Grammar. Pr., 101 or equivalent. — Tatsumi
108. Elements of Soshu. (3) Pr., 101 or equivalent. — Staff
109. Elementary Japanese Composition. (5) Pr., instructor's permission. — Staff
158. Literature of Japan in Translation. (5) — Tatsumi

*Courses for Graduates Only*

200. Morphology and Syntax of the Japanese Language. (5) Pr., permission. — Tatsumi
201. Japanese Reference Works and Bibliography. (3) Seminar on the methodology of Japanology. Pr., permission. — Staff
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

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) Pr., 104, 105, or equivalent. — Staff

### Russian

1. Russian Language. Intensive A. (10) — Gershevsky, Staff
3. Russian Language. Intensive B. (10) Pr., 1 or equivalent. — Lavaska, Pahn
101. Russian Language. Intensive C. (10) Pr., 3 or equivalent. — Gershevsky, Lavaska
102, 103, 104. Advanced Russian Language. (5, 5, 5) Pr., 101. — Pahn
107, 108, 109. Advanced Russian Reading. (5, 5, 5) Pr., 101. — Staff
110. Advanced Russian Grammar and Composition. (5) Pr., 101 or equivalent. — Gershevsky
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, 1782-1946. — Spector

## FISHERIES

*Professors W. F. Thompson, Lynch; Acting Professor Dunlop; Associate Professor Donaldson; Instructors Welander, DeLacy; Lecturer Bell*

101. Comparative Anatomy of Fishes. (5) Morphology. Emphasis on evolution of structures in reference to phylogeny. Pr., Zool. 1, 2. — Welander
102. Classification and Identification of Soft-rayed Fishes. (5) Special attention given to salmon and trout. Pr., 101. — Welander
103. Classification and Identification of Spiny-rayed Fishes. (5) Special emphasis on game and food fishes. Pr., 102. — Welander
105, 106, 107. Commercial Aquatic Invertebrates. (5, 5, 5) Classification, life history, uses. Pr., Zool. 1, 2. — Lynch
108, 109, 110. Problems of Fisheries Science. (1, 1, 1) Required of all majors. — Dunlop
125, 126, 127. Early Life History of Fishes. (3, 3, 3) Pr., 101, 102; Chem. 1-2 or 21-22. — Donaldson
150. Natural Fish Foods and Water Supplies. (5) Fresh-water insects and crustacea and their relation to pond culture; physical and chemical determinations of the suitability of water; algae, higher plants, and miscellaneous invertebrates in relation to fish. Pr., Zool. 1, 2; Chem. 1-2 or 21-22. — Lynch
151. Propagation of Salmonoid Fishes; Methods of Hatching and Rearing. (5) 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 Fish. (5) Feeding and efficiency of diets; food costs and supplies; nutritional diseases. Pr., 101, 102; Chem. 1-2 or 21-22. — Donaldson

153. Hatchery Biology. (5) Propagation of pond, salt-water, and aquarium fishes; stream improvement; stocking policies. Pr., 101, 102; Chem. 1-2 or 21-22. Donaldson

154. Diseases of Fish. (5) Pr., 101, 102; Microbiology 101. Lynch

156. Later Life History of Fishes: Age and Growth. (3) Pr., 101, 102. DeLacy

157. Later Life History of Fishes: Migration and Geographic Distribution. (3) Pr., 156. DeLacy

158. Later Life History of Fishes: Racial Differentiation and Laws of Population. (3) Pr., 157. DeLacy

180, 181, 182. Fisheries Technology: An Introduction. (5, 5, 5) Pr., permission. Bell

190, 191, 192. Elementary Problems. (2 to 5 ea. qtr.) Pr., 15 credits in fisheries. Staff

195, 196, 197. Fisheries Literature. (2 to 5 ea. qtr.) Preparation of research programs and reports. Pr., 15 credits in fisheries. Thompson

*Courses for Graduates Only*

201, 202, 203. Research. (2 to 5 ea. qtr.) Pr., 25 credits in fisheries or their equivalent in zoology. Staff

205, 206, 207. Graduate Seminar. (2 to 5 ea. qtr.) Required of all graduate students. Thompson

## FORESTRY AND LUMBERING

*Professors Marckworth, Grondal, Pearce, Winkenwerder; Associate Professors Robertson, Schrader; Assistant Professor Brockman; Instructor Covington*

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. Marckworth

4. Forest Fire Protection. (3) Factors influencing their spread, methods of presuppression, detection, and suppression. Required of all freshmen. Marckworth

5. First Aid to the Injured. (2) Dr. Hall

6. General Forestry. (3) For nonmajors. Winkenwerder

8. Forestry Problems. (5) Methods of attack, emphasizing accuracy, analysis, and interpretation of forestry data. Pr., Math. 4. Schrader

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

21. Silvics. (3) Relation of trees and forests to soil, moisture, light, and temperature; forest ecology. Pr., 1b, 3, Bot. 19. Brockman

40. Silviculture. (2) Field studies and nursery practice. Given at Pack Forest. Pr., 21. 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

62. Field Problems in Forest Mensuration. (6) Given at Pack Forest. Pr., 1b, 60, G.E. 7. Covington

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

105. Wood Preservation. (3) Classification and control of wood-destroying agencies; mechanical properties of treated wood. Pr., 111, Bot. 18. Grondal

106 Wood-preservation Laboratory. (2) Evaluation of preservatives; methods of testing and inspection of treated material. Must be preceded or accompanied by 105. Grondal

108. Timber Design. (3) Beams, columns, trusses, timber connectors and fastenings; design, fabrication and erection of timber structures. Pr., 104. Schrader

109. Wood Technology. (3) Identification, taxonomy, physical and chemical properties of wood. Pr., 1a, 1b, Physics 3 or 6, 10 credits in chemistry, Bot. 17. Grondal

111. Wood Structure. (3) Identification, xylotomy, and elementary microtechnique. Pr., 109. Grondal

115. Forest Protection. (3) Fire plans; forestry practice in the control of insect and fungus attacks. Pr., 4. Brockman

119. Forest Policy. (3) Development of forest policies; forest laws. Pr., senior standing. Marckworth

122. Silvicultural Methods. (5) Type and site classification; intermediate and final cuttings; natural and artificial regeneration. Pr., 21, 40.

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 Administration and Regulation. (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) Correlation of grazing with other forest uses; range regulation and economics. Pr., 21, Bot. 19. Brockman

**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.

**158.** Forest Utilization. (5) Secondary and derived forest products. Pr., 15.

**159.** Plywood, Lamination, and Glues. (3) 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. (4, 4, 4, 4) 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, E.B. 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

**187.** Senior Logging-engineering Field Trip. (16) Development of a complete logging plan and cost analysis in a large operation. Pr., 186. 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

### *Courses for Graduates Only*

**202.** Thesis. (3 to 6 ea. qtr.) Total requirement nine credits.

**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. Marckworth

**208.** Graduate Seminar. (3) Required of graduate students. Staff

**210, 211, 212.** Graduate Studies. (3 to 5 ea. qtr.) In fields for which there is not sufficient demand to organize regular courses.

**213, 214, 215.** Research. (3 to 5 ea. qtr.)

**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

## GENERAL LITERATURE

### *Professor Benham; Instructor Hilen*

**101.** Introduction to Criticism and Literature. (5) May receive credit in English. Benham

**151, 152, 153.** Masterpieces of European Literature. (3, 3, 3) Pr., sophomore standing. Hilen

**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. Benham

**194, 195, 196.** General European Literature. (3, 3, 3) Pr., 193. From approximately 1650 A.D. to approximately 1900. Benham

For other courses that form a part of the general literature program, see English, and the foreign language departments.

## GENERAL STUDIES

*Advisory Committee: H. B. Densmore (Greek), Chairman; J. D. Barksdale (Geology); Russell Blankenship (English); Viola Garfield (Anthropology); J. R. Huber (Economics); Helen Kahin (English); E. C. Lingafelter (Chemistry)*

**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[1]

**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[1]

**191, 192, 193.** Senior Study. (†) Pr., permission.

Not offered in 1947-1948: 21-22, American Social Trends.

## GEOGRAPHY

*Professor Martin; Associate Professors Church, Earle; Assistant Professors Stanislawski, Williams; Instructor Sherman; Acting Instructors Rankin, Tennant, Thompson; Acting Associate Carter*

**1.** Survey of World Geography (5) World regions; man's relation to his habitat Not open to students who have had 7 or 70. Williams, Rankin

**2.** Physical Geography. (5) Land forms; soils; waters; mineral products; topographic maps. Thompson

**4-5.** Survey of World Geography. (2-2) Similar to Geography 1. Williams, Tennant, Staff

**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, Sherman, Staff

**11.** Weather and Climate. (5) World distribution of temperature, pressure, winds, precipitation. Weather maps. Sherman, Carter

**15.** Mountain Geography. (2) Highland areas of the world, agricultural, pastoral, and industrial; mountain communities; recreational values; barrier and boundary theories. Thompson

**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. Williams, Rankin

**102.** Geography of United States. (5) Regional and industrial. Pr., 1, 7, or junior standing. Williams, 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

**105.** Geography of South America. (5) Genesis and development of culture regions; resources, economic activities, and relations. Pr., 1, 7, or permission. Stanislawski

**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) Agriculture, resources, colonization. Pr., 1, 7, or permission. Earle

**108.** Geography of Canada and Alaska. (3) Regions, resources, economic and social development; northern settlement. Pr., 1, 7, or permission. Thompson

**109.** Geography of Caribbean America. (5) Genesis and development of economic and culture regions. Pr., 1, 7, or permission. Stanislawski

**110.** Resources of the Pacific Northwest. (2) Rural and urban development; industry; regional problems. Rankin

**111.** Climatology. (5) Same as 11, but with additional work. Not open to those who have had 11. Pr., junior standing. Sherman, Carter

**112.** Meteorology. (5) Physics of the atmosphere. Pr., 11 or 111. Church

**119.** Physical Climatology. (5) Climatic elements, controls, classifications, collection and use of climatic data. Pr., 11 or 111, or permission. Church

**121.** Regional Climatology. (5) Climatic types and their continental distribution. Pr., 119 or permission. Church

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[1]M. Jacobs (Anthro.), R. Penington (Art), V. Sivertz (Chemistry), W. S. Hopkins, J. R. Huber, V. Mund (Economics), C. T. Williams (Education), R. G. Tyler (Engineering), J. B. Harrison (English), F. Williston (Far Eastern), H. B. Densmore (General Studies), G. Costigan (History), G. Lutey (Liberal Arts), A. H. Taub (Math.), G. McKay (Music), A. I. Melden, H. J. Phillips, M. Rader (Philosophy), D. H. Loughridge, E. A. Uehling (Physics), A. Martin (Physiology), L. A. Mander, T. I. Cook (Political Science), R. Gundlach (Psychology), Rev. J. Bartlett (Religion), Howard L. Nostrand (Rom. Lang.), R. W. O'Brien, Mrs. Laile Bartlett (Sociology), M. H. Hatch (Zoology).

†To be arranged.

122. Aeronautical Meteorology. (3) The troposphere. Radiation, temperature, clouds, fog, thunderstorms, ice formation on aircraft. Engineering juniors and seniors only. Sherman

125. Geographic Background of American History. (3) Martin, Stanislawski

132. Islands of the Pacific. (5) Geography, climate, resources, peoples, etc. Pr., 1, 7, or permission. Earle

133. Geography of the U. S. S. R. (3) Agriculture, resources, industrial development. Pr., 1, 7, or permission. Williams

140. Geography in the Social Studies. (2) Pr., 10 credits in geography, or permission.

152. Air Mass Analysis. (3) The frontal theory. Vertical and horizontal properties of air masses. Life cycle of extra-tropical cyclones. Pr., 112 or 122. Church

153, 154. Meteorological Laboratory. (3, 3) Weather charts based on frontal and isentropic methods. Church

155. Influences of Geographic Environment. (5) Theory of occupance; urbanization; human adjustment. Pr., 20 credits of geography, or permission. Earle

156. Weather Instruments and Observations. (2) Pr., 112. Sherman

160. Cartography. (5) Map projections, symbols, scales, sketch mapping, block diagrams. Williams, Sherman

162. Advanced Cartography. (†) Pr., 160. Williams, Sherman

170. Conservation of Natural Resources. (5) Public policy; land reclamation; resource utilization. Martin

175. Political Geography. (3) Geographic basis of national and international problems. Pr., 10 credits of geography, or permission. Stanislawski, Williams

177. Urban Geography. (3) Major cities of U.S. Pr., junior standing. Martin

192. Readings in Climatology or Meteorology. (†) Pr., permission. Church

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

202. Seminar: Writing and Critique. (3) Martin

203. Seminar in Asia. (3) Earle

204. Seminar in Europe. (3) Martin

205. Seminar in Latin America. (3) Stanislawski

207. World Resources and Industries. (†) Staff

211. Research in Meteorology or Climatology. (†) Church

220. Land Utilization. (†) Sherman

250, 251, 252. Thesis Research. (†) Staff

255. History and Theory of Geography. (†) Earle

295. Individual Conference and Research. (†) Staff

301, 302, 303. Individual Research. (†) Staff

## GEOLOGY

*Professors Goodspeed, Weaver, Fuller; Associate Professors Barksdale, Coombs, Mackin*

1. Survey of Geology. (5) Coombs

2. Geology in World Affairs. (5) Geological occurrence, world distribution and production of coal, petroleum, and the important industrial minerals. Pr., 1. Barksdale

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 credits of geology, or Zool. 1 and 2. Weaver

10. Engineering Geology. (5) Elements of geology for civil engineers. Mackin

100. History of Geology. (3) Required of all majors in geology. Pr., 15 credits in geology. Barksdale

102. Geology in World Affairs. (5) Same as 2, but with additional work. Pr., 1, junior standing. Barksdale

†To be arranged.

**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, or Zool. 1 and 2; junior standing. Weaver

**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, 131, or permission. Mackin

**113.** Physiography of Western United States. (5) Pr., as for 112. Mackin

**114.** Map Interpretation: Constructional Landforms. (5) Pr., 5, 6, 7. Mackin

**116.** Glacial Geology. (5) Pr., 5 and 6. Mackin

**121.** Mineralogy. (5) Determinative crystallography and blowpipe analysis. Pr., 5, and high school chemistry. Coombs

**123.** Optical Mineralogy. (3 or 5) Petrographic microscope and recognition of common minerals in thin section. Pr., 5, 121 (except for upper-division chemistry students). Goodspeed

**124, 125.** Petrography and Petrology. (3 or 5 ea. qtr.) Systematic study of rocks with the petrographic microscope. Pr., 123 for 124; 124 for 125. Goodspeed

**126.** Sedimentary Petrography. (3 or 5) Correlation of sedimentary rocks by their mineral constituents. Pr., 124. Coombs

**127.** Ore Deposits. (5) Their form, structure, mineralogy, petrology, and mode of origin. Pr., 121, 124. Goodspeed

**129.** Mineral Resources—Metals. (3) Pr., 127. Goodspeed

**130.** General Paleontology. (5) Systematic study of fossils. Pr., 7, or Zool. 1 and 2. Weaver

**132.** Invertebrate Paleontology. (5) Fossils of each geologic period. Pr., 7, or Zool. 1 and 2. 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

**142.** Structural Geology. (5) Interpretation of rock structures and their genesis. Pr., 5, 6, 7. Barksdale

**143.** Advanced Structural Geology. (3) Pr., 142. Barksdale

**144.** Field Methods. (5) Geologic and topographic surveying and recording. Pr., 143, G.E. 21. Barksdale

**160.** Principles of Geomorphology. (5) Pr., permission. Mackin

**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 Work in General Geology. (†) Open to advanced undergraduates upon permission.

### *Courses for Graduates Only*

Two modern foreign languages are necessary for graduate work in geology.

**201.** Advanced Petrography and Petrology of Igneous Rocks. (†) Goodspeed

**202.** Advanced Petrography and Petrology of Metamorphic Rocks. (†) Goodspeed

**203.** Advanced Petrography and Petrology of Sedimentary Rocks. (†) Coombs

**212.** Advanced Studies or Field Work in Physiography. (†) Mackin

**220.** Advanced or Research Work in Mineralogy, Petrography, and Petrology. (†) Goodspeed, Coombs

**227.** Advanced or Research Work in Economic Geology. (†) Goodspeed

**230.** Advanced or Research Work in Paleontology and Stratigraphy. (†) Weaver

**240.** Advanced Studies in Structural Geology. (†) Barksdale

Not offered in 1947-1948: 3 and 103, Geology of the Pacific Northwest; 128, Mineral Resources—Nonmetals; 135, Study of Ammonites; 136, Geology of South America; 150, Elements of Seismology.

†To be arranged.

## GERMANIC LANGUAGES AND LITERATURE

***Professors Vail, Eckelman, Lauer, Meisnest; Associate Professor Meyer; Assistant Professor Wesner; Instructors Ankele, Reed, Schertel, Wilkie***

Students of mathematics and the applied sciences should take German 1-2, 3, an additional course in second-year German, 60, and the upper-division scientific courses for specialized reading.

Students of history and the social sciences should elect German 10 or 30 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.

**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) Especially valuable as preparation for 120, 121, 122. 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. **Ankele**

**60. Lower-division Scientific German.** (3) Pr., 4, 5, or 6.

**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**

**120, 121, 122. Grammar and Composition.** (2, 2, 2) Primarily for majors and minors. To be taken preferably in the junior or senior year. Pr., 8 credits of second-year German or equivalent. **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**

**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. **Wesner**

**145. Modern Novels.** (3) Pr., 130 or equivalent. **Eckelman**

**166. Goethe's *Faust*, Part I.** (3) Pr., 130 or equivalent. **Vail**

**167. Goethe's *Faust*, Part II.** (3) Pr., 130 or equivalent. **Vail**

**180, 181, 182. Nineteenth-century Literature.** (3, 3, 3) Alternates with 183, 184, 185.

**183, 184, 185. History of German Literature.** (3, 3, 3) To the Age of Goethe. Pr., 130 or equivalent. Alternates with 180, 181, 182. Not offered in 1947-1948. **Wilkie, Vail**

**198. Studies in German Philology.** (1 to 5) Pr., 130 or equivalent.

**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.

**100. Masterpieces of German Literature.** (5) The Middle Ages to the Age of Goethe. **Vail**

**102. Goethe.** (3) **Eckelman**

**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. Time for all courses will 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)

**220.** Goethe. (5)

**221.** Schiller. (4)

**222.** Lessing. (3)

**230.** The Romantic Movement. (4)

**231.** The Literature of the Nineteenth Century. (5)

**232.** The Literature of the Twentieth Century. (3)

**240.** The 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)

**295, 296, 297.** Seminar in Germanic Philology. (1 to 5 ea. qtr.)

Not offered in 1947-1948: 1R, 2R, 3R, First-year Reading; 1S, 2S, 3S, First-year Speaking; 1X, 2X, 3X, First-year Intensive; 101, The Novel; 103, The Drama; 140, Heimatkunst; 141, Recent Novellen; 143, Expressionism and Twentieth-century Realism; 147, 148, Modern Drama; 160, Lessing's Life and Dramatic Works; 162, Goethe's Lyric Poetry; 163, Goethe's Dramatic Works; 168, Schiller's Historical Dramas; 186, Lyrics and Ballads.

## HISTORY

*Professors Holt, Levy, Lucas, Savelle; Associate Professors Costigan, Dobie, Gates, Katz; Assistant Professors Emerson, Stanislawski; Associate Davis*

**1.** Medieval European History. (5) From the Roman World to 1500. — Dobie, Katz

**2.** Modern European History. (5) From 1500 to the Present. — Dobie, Emerson

**5-6.** English Political and Social History. (5-5) By special work, upper-division students may receive upper-division credit. — Costigan

**7.** A Survey of the History of the United States. (5) By special work, upper-division students may receive upper-division credit. — Gates, Holt, Savelle

**41-42.** Latin American History. (5-5) — Stanislawski

**72-73.** Ancient History. (5-5) The Mediterranean world. Greece and Rome. By special work, upper-division students may receive upper-division credit. — Katz

**103.** The Roman Republic. (5) — Katz

**110.** The Byzantine Empire. (5) — Katz

**114.** The Culture of the Renaissance. (5) — Lucas

**115.** The Reformation. (5) — Lucas

**120.** Medieval Civilization: Art, Letters, Religion, Education, and Thought. (5) — Lucas

**128.** France from the Reformation to the French Revolution. (5)

**129.** The French Revolution and Napoleonic Era. (5)

**131.** Europe, 1870-1914. (5) — Emerson

**133.** Europe Since 1914. (5) — Emerson

**134.** Germany from 1648 to 1914. (5) — Emerson

**141.** American Revolution and Confederation. (5) — Savelle

**158.** The United States in World Affairs, 1776-1861. (5) — Holt

**159.** The United States in World Affairs, 1861 to the Present. (5) — Holt

**164.** History of Washington and Pacific Northwest. (5) — Gates

**165.** The Westward Movement. (5) — Gates

**180.** History of the British Empire Since 1783: Britain in India, Africa, and the Pacific. (5) — Dobie

**183.** England in the Nineteenth Century. (5) — Costigan

**199.** Individual Conference and Research. (1 to 5) — Staff

Teachers' Course in History. (See Educ. 75M.)

Geographic Background of American History. (See Geog. 125.)

*Courses for Graduates Only*

**201.** Historiography: Ancient, Medieval, and Modern European. (5) Required of all graduate students majoring in history. — Katz and Staff

**202.** Historiography: English and American. (5) Required of all graduate students, including those taking a minor in history. — Katz and Staff

**203, 204.** Philosophy of History. (5, 5) — Costigan

Courses in Fields of Specialization

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

**231.** Modern European History. (5)

**232.** Modern European History. (5) — Emerson

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. (†) Restricted to students writing doctoral theses. — Staff

**300, 301, 302.** Individual Research or Thesis Work. (†) — Staff

Not offered in 1947-1948: 100, Greece in the Age of Pericles; 101, Alexander the Great, and the Hellenistic Period; 106, English Constitutional History; 111, Greek and Roman Political Institutions; 112, Introduction to Roman Law; 118, 119, Medieval Civilization; 124, Economic History of Europe since the Industrial Revolution; 130, Europe, 1814-1870; 132, History of the Modern Colonial Empires; 140, American Colonial History; 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, History of American Industrial Society; 155, History of Canada; 181, History of the British Empire since 1783: British Commonwealth of Nations; 182, England in the Eighteenth Century; 184, England in the Twentieth Century; 188, History of Australia; 189, History of New Zealand and Pacific Islands.

## HOME ECONOMICS

*Professors Rowntree, Denny, Payne, Terrell; Associate Professors Bliss, Dresslar; Assistant Professors Featherstone, McAdams, Obst; Lecturer Wade; Instructors Johnson, Johnston, Lloyd, Parks, Smith, Warning; Acting Instructors Rose, Sandin*

**7.** Introduction to Home Economics. (1) Orientation course for freshmen, emphasizing goals of a college education, opportunities in different fields in home economics, and abilities needed in each field. — Rowntree

**9.** Nutrition and Food Preparation for Student Nurses. (5) Pr., chemistry. — Bliss

**12.** Clothing Construction and Selection. (5) Prerequisite to later clothing courses. — Warning, Obst

**15.** Food Preparation. (3) Lectures, demonstrations, and laboratory practice. Prerequisite to advanced food courses. — Dresslar

**24.** Textiles for Nonmajors. (2) Fibers and fabrics, their characteristics, varieties, uses, and care. — Denny

**25.** Textiles. (5) Fibers and fabrics. Relation of raw materials, construction, and finish to quality, use, and cost of fabrics. — Denny

**26.** Institution Textiles. (3) Specifications for purchase for hospitals, hotels, and clubs; testing; storage; and care. — Denny

**41.** Home Furnishing. (3) Traditional and contemporary furniture, rugs, pictures, and tableware. Color harmony. For nonmajors. — Obst

†To be arranged.

**83.** **Food and Nutrition.** (5) Meal preparation, nutrition, and management. For nonmajors. Lloyd

**84.** **Clothing and Textiles.** (5) Construction and selection. For nonmajors. Warning

**101, 102.** **Needlecraft.** (2, 2) Historic laces and embroideries of various nationalities; application of authentic and original designs. Pr., 12 or 13, Art 9. Payne

**104.** **Nutrition.** (2) A nontechnical presentation of the modern knowledge of foods and nutrition. Rowntree

**105.** **Diet Therapy for Nurses.** (5) Pr., 9, organic chemistry, physiology. Johnson

**106.** **Nutrition for Public Health Nurses.** (5) Johnson

**107-108.** **Nutrition.** (5-3) Pr., 15, organic chemistry, physiology. Rowntree

**109.** **Managing Family Finances.** (3) Family practices of spending and saving; social security and other government programs affecting family expenditures. For nonmajors. Johnson

**110.** **Foods.** (5) For technology students. Dresslar

**112.** **Costume Design and Construction.** (3) Flat-pattern designing; wool technique. Clothing for children. Pr., 12 or 13, Art 9. Warning

**113.** **Costume Design and Construction.** (3) Design by draping; 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.** **Food Preparation.** (5) Advanced food preparation, introduction of experimental techniques. Family meal service. Pr., 15, general chemistry. Dresslar

**116.** **Meal Planning and Preparation.** (3) Application of economic and nutritional principles to meal preparation. Pr., 108, 115. Lloyd

**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; food selection and care; planning of kitchen layout and specifications of equipment. Pr., 116. Terrell

**123.** **Institution Management I.** (3) Food-service organization and administration; finances; personnel and equipment; housing and furnishing standards. Open to students in institution-administration curricula or by permission. Terrell

**124.** **Institution Management II.** (5) Institution accounting problems and cost control. Pr., 123. Terrell, Parks

**126.** **Demonstration Cookery.** (3) Techniques and methods adapted to teaching and business. Pr., 115. Dresslar

**131.** **Clothing Selection.** (2) Emphasizes appropriateness to personality and occasion as well as judgment of quality and cost. For institutional majors and for nonmajors. Payne

**132.** **Design by Draping.** (3) Costume design by draping in fabric on dress forms. Pr., Art 11.

**133.** **History of Costume.** (5) Culture as expressed in costumes. A large collection of national costumes enriches the course. Source material for professional designers. Pr., 112, Art 169. Payne

**141.** **The House, Equipment, and Management.** (3) Housing, standards, floor plans and construction, time and energy studies. Pr., physics. Lloyd

**144.** **Income Management.** (4) Financial problems of the family. Economic conditions and government programs affecting family financial management and consumption; consumer credit, insurance, and savings. Pr., Econ. 1 or 4. Johnston

**145.** **Family Relationships.** (3) Importance of family experience in personality development. Social, emotional, and economic factors in marriage adjustment and human relationships. Rowntree

**146.** **Home Furnishing and Textiles.** (5) Economic and aesthetic values; historic and modern furniture, pictures, rugs, tapestry, china, glass, silver; textile fabrics and their uses and care. Primarily for art majors. Featherstone

**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. Featherstone

**148.** **Home-management House.** (3 for prospective teachers; 2 for all others) Organization, financial management, records, housekeeping, food preparation and service, and hospitality. For home economics majors. Pr., senior standing. Lloyd

**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) Construction; operation; care required; routing of work. Pr. or parallel, 124. Terrell

**181.** **Consumer Problems.** (3) The effect on the consumer of marketing policies, costs, and trends; and his influence on production and distribution. Pr., Econ. 1 or 4. Johnston

**187.** **Experimental Cookery.** (3) May carry graduate credit. Pr., 115, permission. Dresslar

188. **Advanced Textiles.** (3) Testing methods, analysis of fabrics, legislation, standardization. Pr., 25, Econ. 4. **Denny**

189. **Hand Weaving.** (2) Color design, texture, technique of weaving, and interpretation of drafts. **Featherstone**

190. **Child Nutrition and Care.** (3) Study of physical, mental, and emotional health of children. Pr., or parallel, 104 or 107. **Rowntree**

191. **Diet Therapy.** (3) Pr., 108. **Johnson**

195. **Research in Home Economics.** (†) Special problem selected and developed in the field of home economics. Pr., fifth year. **Staff**

196, 197. **Supervised Field Work.** (15, 15) Twelve months of work in the fifth year. Pr., 180 credits. The following are acceptable:
A. Hospital internship approved by the American Dietetic Association.
B. Administrative internship approved by the American Dietetic Association. **Terrell**

198. **Historic Textiles.** (3) Art expression in fabrics. Collection of rare materials is available for study. Pr., 25, 147, Art 11. **Denny**

**Teachers' Course in Home Economics.** (For junior and senior high school, see Educ. 75NA and 71N-72N; for institution administration, see Educ. 75NB.)

*Courses for Graduates Only*

200. **Readings in Food Selection and Preparation.** (†) Pr., 116. **Dresslar**

202. **Home Economics Education.** (†) **McAdams**

204. **Introduction to Research Techniques in Nutrition.** (†) Taken with 214. Pr., 108. **Johnson**

205, 206. **Research in Nutrition.** (†) Mineral or energy metabolism, animal feeding, or dietary studies. Pr., 204. **Johnson**

207, 208, 209. **Research in Textiles.** (†) Pr., permission. **Denny**

211, 212. **Research in Costume Design.** (†) Pr., 114, 133. **Payne**

214, 215. **Readings in Nutrition.** (†) Library research. Pr., 108. **Rowntree, Johnson**

220, 221, 222. **Research in Institution Administration.** (†) Problems of food service and housing units. Pr., 121, 122, 123, 124, or equivalent. **Terrell**

245. **Social and Economic Problems of the Consumer.** (†) Family adjustment to differing social and economic conditions. Social and other legislation in relation to consumers. Intersection of production, distribution, and consumption of consumer goods. Pr., 144, 145, 181. **Johnston**

250. **Thesis.** (9)

Not offered in 1947-1948: 111, Nutrition (for technology students).

## JOURNALISM

*Professors Everest, Jones, McKenzie; Associate Professors Benson, Christian, Frost, Kennedy, Mansfield; Assistant Professor Astel; Acting Assistant Professor Ryan; Associates Helberg, Jacobsen, Murton*

1. **Exploring Journalism.** (2) Required in the freshman year of journalism majors. **Everest**

51. **Preliminary News Writing.** (5) Required in the sophomore year of journalism majors. **Christian, Ryan, Jacobsen, Helberg and Staff**

84. **Editorial Techniques.** (2) Required of sophomore journalism majors. Pr., 51. **Staff**

90, 91, 92. **Contemporary Affairs.** (2, 2, 2) **McKenzie**

116. **Propaganda as a Social and Political Force.** (5) **McKenzie**

125. **Principles of High School Journalism.** (5) For teachers in high schools and junior colleges. Editorial, advertising, circulation, and mechanical production of school publications. Offered during Summer Quarter only. Pr., 51.

130. **Fundamentals of Advertising.** (3) Display, attention devices, media. Pr., E.B. 1-2. **Jones**

131. **Display Advertising.** (4) Layouts and copy writing. Open only to majors in journalism or E. and B. majors in advertising and marketing. Pr., 130 or E.B. 134. **Jones**

132. **Advertising Typography.** (2) 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 E. and B. majors in advertising and marketing. Pr., 130 or E.B. 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 E.B. 134. **Jones**

†To be arranged.

**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**

**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 sequence: advertising campaigns and media, advanced copy writing, advanced advertising laboratory, radio advertising, selling techniques, and public relations. **Everest, 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**

**171-172. Magazine and Feature Writing and Trade Journalism.** (3-3) **Mansfield**

**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**

**181, 182, 183. Editorial Techniques.** (2 to 5 ea. qtr.) Journalism majors only. **Astel**

**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**

**250. Research in Journalism.** (3 to 5) Pr., permission. **Staff**

## LAW

*Professors Falknor, Ayer, Gose, Green, Harsch, Levy, Martin, Nottelmann, O'Bryan, Richards, Shattuck, Sholley, Taylor; Associate Professor Cross; Assistant Professors Gallagher, Marsh, Rutledge, Wollett; Lecturers Davis, Reaugh, Shefelman*

### First Year

*All first-year subjects are required*

**‡101. Contracts.** A. (3-); W. (4-); S. (3) Shepherd, Cases on Contracts. **Shattuck, Davis**

**‡102. Torts.** A. (3-); W. (4-); S. (3) Seavey and Thurston, Cases on Torts. **Richards, Reaugh**

**‡104. Property I, II.** A.W.S. (3-3-3) Aigler, Bigelow, and Powell, Cases on Property, Vols. 1 and 2. **Cross, Marsh**

**105. Criminal Law and Procedure.** W. (4) Harno, Cases on Criminal Law, 2nd ed. **Green, Rutledge**

**106. Legal Method.** A. (5) Dowling, Patterson, and Powell, Materials for Legal Method. **Gallagher, Green, Harsch, Sholley**

**112. Agency.** S. (4) Seavey, Cases on Agency. **Gose, Taylor**

### Second Year

*All second-year subjects are required*

**111. Wills.** W. (3) Mechem and Atkinson, Cases on Wills and Administration, 2nd ed. **Richards**

**‡114. Equity.** A.W. (4-4) Walsh, Cases on Equity. **Nottelmann**

**‡115. Evidence.** A.W. (4-4) McCormick, Cases on Evidence. **Falknor**

**116. ‡Bills and Notes.** A. (4) Britton, Cases on Bills and Notes, 3rd ed. **Taylor**

**‡119. Constitutional Law.** A.W.S. (3-3-3) Sholley, Cases on Constitutional Law. **Sholley**

**127. Code Pleading.** S. (3) Cathcart & Howell, Cases on Code Pleading. **Richards**

### Third Year

*All third-year subjects are required*

**117. The Legal Profession.** S. (3) Cheatham, Cases and Materials on the Legal Profession. **Shefelman**

**121. Administrative Law.** S. (4) Gellhorn, Cases on Administrative Law. **Rutledge**

**‡123. ‡Property III.** A.W. (3-3) Aigler, Bigelow, and Powell, Cases on Property, Vols. 1 and 2. **Cross**

**‡126. Trusts.** W.S. (3-3) Scott, Cases on Trusts, 2nd ed. **Nottelmann**

‡No examination for credit until completion of entire course.

‡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. 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. Green

‡145. Credit Transactions. A.W. (3-3) Shattuck, Washington Materials on Security Transactions. Shattuck

‡149. Business Associations. A.W. (4-4) Casebook to be announced. Gose, Taylor

### Fourth Year

#### *Required Courses*

‡118. Conflict of Laws. W.S. (2-3) Cheatham, Dowling, Goodrich and Griswold, Cases and Material on Conflict of Laws. Sholley

124. Community Property. W. (3) Mechem, Sholley, Luccock, Cases on Washington Law of Community Property. Harsch

135. Legislation. S. (4) Horack, Cases on Legislation. Harsch

146. Taxation. A. (5) Griswold, Cases on Federal Taxation, 2nd ed. Harsch

199. Seminars and Individual Research Courses. Ten credits required of the following one-quarter seminars, each carrying five credits.

199B. Banking Law and Advanced Problems in Security. S. (5) Shattuck

199C. Social Legislation. W. (5) Sholley

199D. Law of Income Taxation. W. (5) Harsch

199F. Corporation Practice. S. (5) Gose

199H. Administrative Law. A. (5) Rutledge

199I. Civil and Criminal Procedure. A. (5) Falknor

199J. Labor Law. S. (5) Nottelmann

199L. Property Law. A. (5) Marsh

#### *Elective Fourth-Year Courses*

‡122. International Law. A.W. (3-3) Briggs, The Law of Nations. Martin

125. Trade Regulation. W. (4) Casebook to be announced. Rutledge

128. Damages. S. (3) McCormick on Damages. Taylor

138. Future Interests. S. (4) Leach, Cases on Future Interests, 2nd ed. Cross

139. Administration of Debtors' Estates. S. (4) Casebook to be announced. Marsh

141. Admiralty. A. (4) Lord and Sprague, Cases on Admiralty, 2nd ed. Richards

147. Municipal Corporations. A. (4) Tooke, Cases on Municipal Corporations, 2nd ed. Shefelman

151. Labor Law. W. (4) Casebook to be announced. Wollett

199K. Research Problems in Law. A.W.S. (1 to 3 ea. qtr.) 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 1947-1948: 100, Property I; 110, Sales; 113, Domestic Relations; 129, Drafting of Legal Instruments; 130, Legal Bibliography; 131, Quasi-contracts; 132, Legal Accounting; 133, Public Utilities; 134, Federal Jurisdiction and Procedure; 136, Insurance; 137, Water Rights; 140, Mining Law; 152, Modern Civil Law; 190, Roman Law; 191, Comparative Law; 199A, Trusts; 199E, Constitutional Law, and 199G, Comparative Law.

## 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 in 1947-1948: 114, 115, 116, Realism in Philosophy, Literature, and the Arts.

‡No examination for credit until completion of entire course.

## LIBRARIANSHIP

*Associate Professor Gitler; Professor C. W. Smith; Assistant Professors Groves, Gallagher, Turner; Lecturer H. C. Bauer; Associate Stokke*

### Preprofessional Courses‡

‡151. **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 only. Groves

‡161. **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

‡163. **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. Turner

‡164. **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. Turner

### 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. Smith

211. **Bibliography and Reference.** W. (3 or 4) Study of reference material by subject; subject bibliography. Pr., 210. Smith

212. **Bibliography and Reference.** S. (3) United States and other government publications. Pr., 211

220. **Classification, Cataloging, and Subject Headings.** A. (4) Introduction to classification of books according to the Dewey Decimal System, and basic elements of cataloging and subject heading.

221. **Classification, Cataloging, and Subject Headings.** W. (3) Further study of Dewey classification and of cataloging and subject-heading principles and practices. Pr., 220.

222. **Classification, Cataloging, and Subject Headings.** S. (3 or 5) Comparison of Library of Congress classification with that of Dewey; advanced problems in cataloging. Pr., 221.

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 nonfiction; book reviews and their sources, publishers, translations, and editions are studied. The writing of annotations is included. Gitler, Turner

231. **Selection of Books for Libraries.** W. (3) Continuation of 230. Practical problems of selection, stressing the use of *Publishers' Weekly*. Pr., 230. Gitler, 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

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‡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.

**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.

Not offered in 1947-1948: Second-year Library Work with Children.

## MATHEMATICS

*Professors Carpenter, Ballantine, McFarlan, Taub, Winger; Associate Professors Birnbaum, Cramlet, Jerbert, Mullemeister; Assistant Professors Avann, Beaumont, Haller, Kingston, Zuckerman*

Mathematics 1 may be taken concurrently with Mathematics 4, and Mathematics 2 with Mathematics 4, 5 or 7, 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.

**4.** **Plane Trigonometry.** (5) Pr., one and one-half years algebra, one year plane geometry.

**5.** **College Algebra.** (5) Pr., one and one-half years algebra.

**6.** **Analytic Geometry.** (5) Pr., 2, 4.

**7.** **Algebra and Introduction to Statistics.** (5) Pr., one and one-half years algebra and permission. This course may replace 5 in the requirements for a major.

**11.** **Theory of Investment.** (5) Interest, annuities, amortization, capitalization, depreciation, sinking funds, etc. Pr., one year algebra.

**12.** **Mathematics of Finance and Insurance.** (5) Pr., 11.

**13.** **Elements of Statistical Method.** (5) Pr., one year algebra, 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.

**54, 55, 56.** **Mathematics for Architects.** (3, 3, 3) Pr., one and one-half years algebra, one year plane geometry; each course prerequisite to the following course.

**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) Pr., 109.

**150, 151.** **Advanced Analysis.** (2, 3) Selected topics in advanced differential calculus. Pr., 109 or 114; 150 for 151.

**152, 153.** **Interpolation and Approximation.** (3, 3) Pr., differential calculus. Ballantine

**160.** **Vector Analysis.** (5) Pr., differential calculus (107 or 33). Jerbert

**180.** **Matrices and Determinants.** (3) Pr., 109.

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§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.

**181.** Calculus of Probabilities. (5) Pr., 109.

**182.** Classical Methods of Statistical Inference. (5) Pr., 180, 181.

**183.** Theory of Correlation. (5) Pr., 182.

**184** Chi-tests. (5) Pr., 183.

**185.** Biometrics. (5) Statistical methods applied to biological problems. Pr., 4, 5, 6.

**197, 198, 199.** Seminar in Mathematics. (†) Offered as desired by various members of the staff.

Teachers' Course in Mathematics. (See Educ. 75Q.)

*Courses for Graduates Only*

All courses numbered above 200 require 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) | Beaumont |
| **214, 215, 216.†** | Higher Calculus. (3, 3, 3) | Kingston |
| **217, 218, 219.** | Collineation Groups. (2, 2, 2) | Winger |
| **224, 225, 226.** | Functions of a Real Variable. (3, 3, 3) | McFarlan |
| **241, 242, 243.** | Functions of a Complex Variable. (2, 2, 2) | Zuckerman |
| **254, 255, 256.** | Differential and Riemannian Geometry. (3, 3, 3) | Cramlet |
| **277, 278, 279.** | Theory of Lattices. (2, 2, 2) | Avann |

**281.** General Theory of Estimation and Testing Hypotheses. (5) Pr., 184.

**282.** Analysis of Variance. (5) Pr., 183.

**284.** Least Squares Time Series. (5) Pr., 184.

**285.** Sequential Analysis. (5) Pr., 182.

**289.** Seminar in Probability and Statistics. (†) Pr., permission.

**290.** Research for Thesis Work. (†) Pr., permission.

Variations from the above program for succeeding years will be made by selections from the following courses:

UNDERGRADUATE: Survey of Mathematics, Advanced Analytic Geometry, Introduction to Actuarial Science, Algebraic Curves, Elementary Theory of Numbers, Projective Geometry, Calculus of Observations, Foundations of Algebra.

GRADUATE: Topology, Finite Differences, Analysis Situs, Higher Plane Curves, Calculus of Variations, Theory of Relativity, Functionals and Integral Equations, Orthogonal Functions, Multivariate Statistics.

## MEDICINE AND DENTISTRY

### I. DEPARTMENTS OF MEDICAL SCIENCE

#### Anatomy

*Professors Windle, Worcester; Associate Professors Kellogg, Thomas; Assistant Professors Becker, Everett, Skahen; Lecturer Scheyer; Instructors Chambers, Johnson; Clinical Associates Dirstine, Hutchins, Hutchinson, Jones, Tasher, MacKay, Norgore, Watson; Clinical Assistant Lay*

**117-118.** Elementary Anatomy and Physiology. (3-3) For students in School of Nursing. Pr., permission of department chairman.

**128-129.** Human Anatomy. (10-6) Gross, head and neck, microscopic, neurology. For students of the School ot Dentistry.

**151-152-153.** Human Anatomy. (8-8-4) For students of the School of Medicine.

**161-162.** Microscopical Anatomy. (4-4) For students of the School of Medicine. Pr., gen. zool., comparative vertebrate anatomy, embryology, and permission from department chairman

**163.** The Nervous System. (6) For students of the School of Medicine. Pr., 161 and 162, o special permission of department chairman.

*Course for Graduates Only*

**250.** Research. (†)

#### Biochemistry

*Professor Norris; Assistant Professor Kuether*

**127.** Biochemistry. (6) For dental students. Pr., matriculation in the Dental School, or permission. Norris, Kuether

**167-168.** Biochemistry. (6-6) For medical students. Pr., matriculation in the Medical School, or permission. Norris, Kuether

†To be arranged.

*Courses for Graduates Only*

200. Seminar. (0)

249. Special Topics. (2-3) Pr., permission. Staff

250. Research. (†) Staff

Internal Medicine

*Professor Turner; Associate Professors Green, Pullen; Clinical Professors Bannick, Bennett, Francis, Palmer, Watts; Clinical Assistant Professors Altose, Birkeland, Bowers, Capaccio, Chew, Davies, Eggers, Friedman, Gill, Haviland, Hildebrand, Hofrichter, King, Krantz, Lincoln, Sherwood, Soderstrom, Stroh, Zimmerman; Lecturers Ferguson, Jared, Lemere*

151. Introduction to Human Behavior. (1) Lemere

152. Introduction to Medico-social and Medico-economic Problems. (1) Ferguson, Jared

153. Introduction to Public Health Economics and Medical Statistics. (1) Powers

154. Introduction to Physical Diagnosis. (2) Turner, Pullen, Green

155. Physical Diagnosis and Clinical Demonstration. (2) Staff

Microbiology

*Professors Evans, Henry, Hoffstadt; Associate Professors Weiser, Ordal; Assistant Professor Douglas; Associate Duchow*

100. Fundamentals of Bacteriology. (6) Pr., 10 credits in botany or zoology, Chem. 131, and permission. Ordal

101. General Bacteriology. (5) Pr., Chem. 2 or 22. Staff

106. Serological Technique. (3) Pr., 135 or 151. Staff

120, 121, 122. Applied Bacteriology. (5, 5, 5) Practical experience in media room, public health, private hospital, or industrial laboratories. Fifteen hours per week. Pr., permission and letter to laboratory. Duchow, Evans

130, 131. Industrial Microbiology. (5, 5) Pr., 100 or 101; Chem. 111, 132. Douglas, Ordal

135-136. Microbiology. (6-1) For students of the School of Dentistry. Pr., permission of the department chairman. Evans and Staff

151, 152, 153. Microbiology. (6, 6, 6) For students of the School of Medicine. Pr., Chem. 132; 10 cr. zoology or botany; permission of department chairman. Evans and Staff

199. Problems in Microbiology. (†) Qualified senior students are assigned specific problems in industrial, medical, or general microbiology. Staff

*Courses for Graduates Only*

Ten undergraduate credits and permission are prerequisites to all graduate courses.

200. Seminar. (1) Pr., graduate standing. Staff

201. Physiology of Bacteria. (4) Offered in 1948-1949. Douglas, Ordal

202. Filtrable Viruses. (4) Offered in 1947-1948. Evans, Hoffstadt

213. Principles of Immunology. (†) Offered in 1948-1949. Weiser

250. Research. (†) Not on subject used for thesis. Staff

251. Research. (†) On subject used for thesis. Staff

Pathology

*Professor Lippincott; Assistant Professors Chipps, Ellerbrook, Ricker; Clinical Assistant Professors Lund, Jensen; Clinical Instructors Edmonds, Mason; Research Associates Rhees, Thornton*

131-132-133. Pathology. (2-2-3) For students of the School of Dentistry.

139, 140. General and Special Pathology. (†) For students of the School of Dentistry.

151, 152, 153. General and Special Pathology. (4, 4, 4) For students of the School of Medicine.

160. Autopsy Technique. (†) For third-year medical students.

161. Autopsy Demonstration and Correlation Clinic. (4) For third- and fourth-year medical students.

170. Oncology. (†) For third-year medical students.

173. Neuropathology. (†) For fourth-year medical students.

175. Pathology of the Hematopoietic Diseases, Including Peripheral Blood and Tissues. (†) For fourth year medical students.

176. Clinical Pathological Conference. (†) For fourth-year medical students.

*Course for Graduates Only*

200. Seminar. (†)

†To be arranged.

### Pharmacology

*Professor Dille; Associate Professor Green; Assistant Professor Loomis*

**61.** Pharmacology and Therapeutics. (3)

**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. (6-5) For students of the School of Medicine.

**185, 186.** Experimental Pharmacology. (2, 2) For students of the College of Pharmacy. Pr., 101, 102, 103.

**187.** Biological Assays. (2) Pr., 185, 186.

### Physiology and Biophysics

*Professor Ruch; Associate Professor Martin; Assistant Professors Carlson, Patton, Skahen; Instructor Milford; 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 of departmental chairman. Skahen

**126.** Human Physiology. (6) For students of the School of Dentistry. Three lectures, six hours laboratory, two quiz hours. Martin, Staff

**151-152.** Human Physiology. (7-7) For students of the School of Medicine, and for graduate students by permission. Three lectures, eight hours laboratory, one quiz. Ruch, Staff

#### *Courses for Graduates Only*

**200.** Seminar. (†)

**225, 226, 227.** Advanced Mammalian and Clinical Physiology. (†) Guided study of the experimental literature of physiology and biophysics. Pr., graduate student in physiology. Ruch and Staff

**231, 232, 233.** Experimental Mammalian and Clinical Physiology. (†) Supervised practice in the experimental and operative techniques of physiological and biophysical research. Pr., graduate student in physiology. Ruch and Staff

**250.** Research. (†) Pr., permission.

Not offered in 1947-1948: 116, Biophysics.

### Public Health and Preventive Medicine

*Professor Powers; Clinical Associate Professor Ringle; Clinical Assistant Professors Kahl, Farner, Palmquist, Fouts; Clinical Instructors Vaughn, Jensen, Dewey, Giedt, Northrup, Lundy; Pediatrician and Director of University Child Health Center, Rollin E. Cutts*

#### *Courses Open to ALL Upper-division and Graduate Students*

**103.** Epidemiology. (3) No laboratory.

**121.** Public Health Administration. (3) Pr., Bacteriology 103 or Public Health 119, or equivalent. Powers

**122.** Biostatistics. (2) Public Health 121 should precede. Powers, Vaughn

**124.** Industrial Hygiene. (3) Public Health 121 should precede. Farner

#### *Courses for Medical Students*

**151.** Biostatistics. (2)

**153.** Introduction to Public Health and Preventive Medicine. (3)

**154.** Industrial Hygiene. (3)

**155.** Clinical Preventive Medicine. (3)

**156.** Clerkships. (†)

### Surgery

*Professor Harkins*

**151-152-153.** Introduction to Surgery. (1-1-1) Harkins

†To be arranged.

## II. DEPARTMENTS OF DENTAL SCIENCE

### Crown and Bridge

*Clinical Professor Anderson; Clinical Instructors German, Smith*

**101.** Elementary Crown and Bridge Technic. (4)

**125-126-127.** Crown and Bridge Technic. (2-2-2)

**128-129.** Ceramics. (2-2)

### Operative Dentistry

*Professor Jones; Clinical Professor Hampson; Associate Professor Pratt; Clinical Instructors German, Lewis, Smith*

**101-102.** Elementary Operative Dentistry Technic. (2-2)

**103-104.** Oral Anatomy. (4-4)

**125-126-127.** Operative Dentistry Technic. (2-2-2)

**128.** Clinical Orientation. (2)

### Prosthodontics

*Clinical Professor Stansbery; Clinical Associate Professor Schultz*

**101-102-103.** Elementary Prosthetic Dentistry Technics. (2-2-2)

**125-126-127.** Full Denture Technics. (2-2-2)

**128-129-130.** Partial Denture Technics. (2-1-1)

### Additional Courses in Dentistry

*Professors Jones, Brauer; Clinical Professor Foote; Associate Professor Thomas; Assistant Professor Nelsen*

**Oral Diagnosis 101.** Nomenclature. (1)

**Oral Diagnosis 126-127.** Roentgenology Technic. (2-1)

**Dental Histo-Pathology 101.** Comparative Dental Anatomy. (1)

**Dental Histo-Pathology 102.** Dental Histology and Embryology. (4)

**Dental Histo-Pathology 125.** Oral Hygiene. (1)

**Dental Histo-Pathology 126.** Pulp Canal Therapy Technic. (2)

**Dental Materials 125.** Dental Materials. (2)

**Dental Science and Literature 101.** Orientation. (1)

**Dental Science and Literature 125.** Dental History. (1)

**Pedodontics 101.** Public Health and Hygiene. (1)

**Pedodontics 125.** Pedodontic Technic. (2)

**Pedodontics 126-127-128.** Preventive Dentistry. (1-1-1)

## MILITARY SCIENCE AND TACTICS (ARMY R.O.T.C.)

*Colonel Jones; Major D'Amelio, Major Backstrom, Major Donlon, Major Mix; Captain Merrick, Captain Noreen; First Sergeant Johnson; Master Sergeants Martin, Wallis, Kowalski, Gage; Technical Sergeant Putnam; Staff Sergeants Powell, Liddle, Stephens, O'Kelley*

The instruction for the first two years, together with that provided for the third and fourth years, constitutes the courses prescribed by the War Department for institutional units of the Reserve Officers' Training Corps. The advanced courses, those of the third and fourth years, are open to selected students who have completed the first two years (elementary course) of instruction and training or have been granted credit for its equivalent in accordance with regulations.

### First Year

**8, 9, 10.** Branch Immaterial. (2, 2, 2) World military situation; military organization; hygiene and first aid; leadership, drill, and exercise of command; individual weapons and marksmanship; maps and aerial photographs; National Defense Act and R.O.T.C.

### Second Year

**64, 65, 66.** Branch Immaterial. (2, 2, 2) World military situation; leadership, drill, and exercise of command; physical development methods; maps and aerial photographs; military administration; evolution of warfare; military law and boards.

### Third Year

**104, 105, 106.** Infantry. (3, 3, 3) Military leadership, psychology, and personnel management; leadership, drill, and exercise of command; military problems of the United States; occupied territories; military law and boards; tactics and technique (communications, gunnery, technique of fire, fire control, motors and transportation, organization, tactics, the military team, troop movements.)

**114, 115, 116. Coast Artillery Corps.** (3, 3, 3) Military leadership, psychology, and personnel management; leadership, drill, and exercise of command; military problems of the United States; occupied territories; military law and boards; basic gunnery, fire control and technique of fire (characteristics of materiel, communications, organization, seacoast artillery tactics, motors and transportation, troop movements, the military team).

**124, 125, 126. Quartermaster Corps.** (3, 3, 3) Military problems of United States; occupied territories; organization and functions of Quartermaster Corps; organization for supply in the army; administration of civilian personnel; the military team; military law and boards of officers; military leadership, psychology, and personnel management; property accountability; unit and organizational supply; leadership, drill, and exercise of command; classification of supplies, use of stock catalogues, and basis of allowances; depot supply; station supply.

**134, 135, 136. Signal Corps.** (3, 3, 3) Military leadership, psychology, and personnel management; leadership, drill, and exercise of command; military problems of the United States; occupied territories; military law and boards; signal communication for all arms and services; organization and missions of the Signal Corps; organization of the infantry division and its signal and communication components; message center and signal center procedure; field wire communication fundamentals; communication security; field radio communication fundamentals; the military team; Signal Corps photography.

**144, 145, 146. Transportation Corps.** (3, 3, 3) Military leadership, psychology, and personnel management; leadership, drill, and exercise of command; military problems of the United States; occupied territories; military law and boards; organization and function of the Transportation Corps; transportation services; transportation control; military freight movements; military passenger movements; military motor transport; ports, zone of interior; amphibian trucks and harbor craft; stevedore operations; transportation services, theater of operations; the military team.

**130. Advanced Camp.** (3) Offered in summer only.

### Fourth Year

**154, 155, 156. Infantry.** (3, 3, 3) Command and staff; military teaching methods; psychological warfare; geographical foundation of national power; leadership, drill, and exercise of command; combined and joint operations; military mobilization and demobilization; tactics and technique (communications, gunnery, technique of fire and fire control, new developments, supply and maintenance, tactics, troop movements).

**164, 165, 166. Coast Artillery.** (3, 3, 3) Command and staff; military teaching methods; psychological warfare; geographical foundation of national power; leadership, drill, and exercise of command; combined and joint operations; military mobilization and demobilization; characteristics of materiel; gunnery, fire control, and orientation; new developments; seacoast artillery tactics; supply and maintenance; troop movements.

**174, 175, 176. Quartermaster Corps.** (3, 3, 3) Command and staff; military teaching methods; psychological warfare; geographical foundation of national power; leadership, drill, and exercise of command; combined and joint operations; military mobilization and demobilization; depot supply; fiscal procedures; procurement procedures; station supply; storage, warehousing, and materiel handling; quartermaster inspection service.

**184, 185, 186. Signal Corps.** (3, 3, 3) Command and staff; military teaching methods; psychological warfare; geographical foundation of national power; leadership, drill, and exercise of command; combined and joint operations; military mobilization and demobilization; wire communications (materiel); radio communications (materiel); applied signal communications (division); signal supply and repair; higher echelon signal communications and equipment.

**194, 195, 196. Transportation Corps.** (3, 3, 3) Command and staff; military teaching methods; psychological warefare; geographical foundation of national power; leadership, drill, and exercise of command; combined and joint operations; military mobilization and demobilization; transportation law; ports, zone of interior; ports, theater of operations; shop operations; transportation services, theater of operations; movement control, theater of operations.

**154a, 155a, 156a. Infantry (Interim).** (3, 3, 3) Adjustment of fire; administration; carbine caliber 30; combat intelligence; combat orders; communications; drill, ceremonies, and inspections; fire control instruments; leadership; map and aerial photograph reading (advanced); methods of instruction; military law; motor maintenance.

**164a, 165a, 166a. Coast Artillery Corps (Interim).** (3, 3, 3) Antiaircraft artillery intelligence; service, aircraft warning service, and general combat intelligence; administration; ammunition, types and characteristics; artillery materiel, general; communications; drill, ceremonies, and inspections; military law; leadership; motor officers' duties; gunnery, fire control, and position finding for AAA guns; map and aerial photo reading (advanced); materiel and service of the piece for AAA automatic weapons and associated equipment; methods of instruction.

**174a, 175a, 176a. Quartermaster Corps (Interim).** (3, 3, 3) Classification of supplies, use of stock catalogues and basis of allowances; depot supply; exercise of leadership; fiscal procedures; maps and aerial photograph reading; methods of military instruction; organization and function of quartermaster corps; procurement procedures; property accountability and responsibility; salvage operations and procedures; station supply; storage, warehousing, and materiel handling; unit and organization supply.

**184a, 185a, 186a. Signal Corps (Interim).** (3, 3, 3) Introduction to course; exercise of leadership; methods of military instruction; maps and aerial photograph reading; signal communication for all arms and services; organization and missions of the Signal Corps; organization of the infantry division, and its signal and communication components; field wire communication fundamentals; wire communication (materiel); field radio communication fundamentals; radio communication (materiel); applied signal communications (division); signal supply and repair; higher echelon signal communications and equipment; message centers.

## MINING, METALLURGICAL, AND CERAMIC ENGINEERING

*Professors Roberts, Daniels; Assistant Professor Zwermann; Instructors Denny, Finley; Associate Pifer*

Prospectors Course (See page 126)

**Mining 10.** Prospecting and Mining. (0) Three hours lecture, five hours laboratory; field trips. Pifer

**Mining 11.** Advanced Prospecting and Mining. (0) Pifer

**Mining 20.** Milling. (0) Two hours lecture, five hours laboratory. Roberts, Pifer

**Mining 21.** Advanced Milling. (0) Roberts

**Metallurgy 30.** Metals. (0) Three hours lecture, two hours laboratory. Daniels

### Mining Engineering

**51.** Elements of Mining. (3) Prospecting, boring, drilling, explosives, rock breaking. Pr., G.E. 1, 2, or sophomore standing. Daniels

**52.** Methods of Mining. (3) Metal, coal, and placer mines, nonmetallic deposits. Pr., 51. Daniels

**101.** Milling. (3) Preliminary course. Pr., junior engineering standing. Roberts

**103.** Mine Rescue Training. (1) The use of oxygen rescue apparatus; first aid; instruction during first six weeks of quarter. 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.

**122.** Coal-mining Methods. (3) Pr., 51, 52. 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) Pr., 101. Roberts

**162.** Economics of the Mineral Industry. (4) Mine valuation; costs of plant and operation; financial provisions; mining law. Pr., senior engineering standing. Roberts

**163.** Mining Engineering. (4) Principles and practice. Laboratory studies of air compressors, drills, etc.; studies at nearby mines. Pr., senior engineering standing. Roberts

**171.** Mine Ventilation. (3) Daniels

**176.** Coal Preparation. (3) Dry and wet cleaning processes; control by float-and-sink methods. Examinations of washing plants at local mines. Pr., 101, Met. 103. Daniels

**182.** Mineral-industry Management. (3) Employment of labor, systems of payment, social and economic aspects. Pr., senior engineering standing, E.B. 3. Daniels

**191, 192, 193.** Thesis. (†) In mining, metallurgical, or ceramic engineering. Completed thesis due three weeks before graduation. Pr., senior standing. Minimum total of five credits required. Staff

### *Courses for Graduates Only*

**201, 202, 203.** Seminar. (1, 1, 1) Lectures and discussions. Required of fellowship holders in the College of Mines. Staff

**211, 212, 213.** Graduate Thesis. (†) In mining, metallurgical, or ceramic engineering. Finished thesis due one month before graduation. Total of nine credits allowed for thesis. Staff

**221, 222, 223.** Metal Mining. (†) Roberts

**231, 232, 233.** Mineral Dressing. (†) Roberts

**251, 252, 253.** Coal Mining. (†) Daniels

**271.** Cooperative Research with U.S. Bureau of Mines. (6)

### Metallurgical Engineering

**53.** Elements of Metallurgy. (3) Metals and alloys, fuels, refractory materials, furnaces, the extraction of the common metals from their ores. Open to all sophomore engineers. Pr., Chem. 23. Finley

**96.** Making, Shaping, Treatment, and Properties of Iron and Steel. (5) Given by Extension only. Daniels

**101.** Fire Assaying. (3) Testing of reagents, crushing, sampling, and assaying of ores, furnace and mill products. Pr., Chem. 111. Finley

**102.** Metallurgical Laboratory. (2) Pr., 53. Finley

**103.** Fuel Technology. (4) Primary and manufactured fuels; source, composition, methods of utilization, and economy. Pr., junior standing. Daniels, Finley

**104.** Nonferrous Metallurgy. (3) Pr., 53. Finley

†To be arranged.

**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 determination of elements in ores and furnace products. Pr., Chem. 109, 110, or 111. Finley

**155.** Iron and Steel. (3) Their metallurgy and manufacture, 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.

**163.** Metallography. (3) Preparation, photomicrography, study of metal sections. Open to all senior engineering students.

**165.** Metallurgical Calculations. (3) Physical chemistry of the metallurgist, slag calculations, furnace problems. Pr., 104.

**166.** Advanced Nonferrous Metallurgy. (3) The extraction of the metals. Pr., senior in mines or graduate standing. Staff

*Courses for Graduates Only*

**221, 222, 223.** Advanced Metallurgy. (†) Pr., graduate standing. Staff

**261, 262, 263.** Fuels and Combustion. (†) Daniels

Ceramic Engineering

**90.** Industrial Minerals. (3) Nonmetallic minerals and their products. Pr., sophomore standing in mines, engineering, or science. Zwermann

**100.** Clays, Plasticity, and Suspension. (3) Pr., 90. Zwermann

**101.** Firing and Firing Problems. (3) Vitrification of clay; melting, fusion, crystallization of silicates. Pr., 100. Zwermann

**102.** Ceramic Decoration. (3 to 6) Its value; colors, surface textures, glazes. Pr., 101.

**104.** Calculations for Bodies and Glazes. (3) Physics and chemistry of preparing, drying, firing, and testing ceramic materials and glazes. Pr., junior standing in mines or engineering.

**105.** Drying and Drying Problems. (3) The physics and chemistry of drying clay products. Pr., junior standing in mines or engineering.

**110.** Ceramic Physical-Chemical Measurements. (2) Testing of clays and other ceramic materials. Pr., junior standing in mines or engineering.

**121, 122, 123.** Ceramic Products Laboratory. (5, 5, 5) Pr., 90 to 110. Zwermann

**131, 132, 133.** General Ceramics, Pottery Techniques. (3 to 5 ea. qtr.) (For 3 hrs. credit, 6 hrs. lab.; for 5 hrs. credit, 8 hrs. lab. and a special problem.) Industrial and craft methods of manufacturing ceramic products, mainly architectural terra cotta and pottery; decorative processes; glaze studies. No prerequisites. Denny

**161, 162, 163.** Glazes, Enamels, and Refractories. (†) Pr., permission.

**190.** Industrial Minerals. (3) Same as 90. Pr., junior standing. Not open to those who have had 90. Zwermann

*Courses for Graduates Only*

**221, 222, 223.** Ceramic Research. (†) The ceramic resources of the Pacific Northwest; or new products or processes. Zwermann

**231, 232, 233.** Physical Measurements. (†)

**241, 242, 243.** Industrial Minerals Research. (†)

## MUSIC

*Professors Munro, McKay, Werner; Associate Professors Hall, Jacobson, Lawrence, Normann, Welke, Woodcock; Assistant Professors Bostwick, Creel, Eichinger, Irvine, Kirchner, Terry, Wilson; Instructors Adams, Bonsack, Johnson, Linden, Risegari, Snader, Thiel, White, Zulch; Associates Beck, Benno, Cloud, Donoghue, Graf, Horsfall, Peterson, Phillips, Schardt, Smith, Stroessler; Lecturer Kinscella*

The following courses are suitable for students not majoring in music (such students should consult the music adviser): Music 14, 21, 22, 23, 44, and courses in vocal or instrumental study and ensemble.

**1, 2, 3.** Instrumental Instruction. (2 or 3 ea. qtr.) Secondary piano (Section A). Solely for prospective music majors and minors who do not have entrance requirement for Music 24. See description for 48, 49, 50. Bostwick in charge

**1AX-2AX-3AX.** Elementary Piano. (1-1-1) Group instruction. For music students not majoring in piano. Fee, $5. Bostwick, Johnson

**1CX-2CX-3CX.** Elementary Voice. (1-1-1) Group instruction. For music students not majoring in voice. Fee, $5. Wilson, Adams

†To be arranged.

4. **Introduction to Music Literature and History.** (3) Technique of listening and of using reference materials in relation to concert programs. For music majors and minors only. Terry

5. **Sight Singing and Analysis.** (2) Unison and part singing incorporating simple intervals and rhythmic patterns in major. Terry in charge

6. **Ear Training and Notation.** (1) Scales, intervals, and chords in major; improvisation and transposition of simple melodies; melodic dictation; keyboard drill. Terry in charge

7, 8, 9. **Instrumental Instruction.** (2 or 3 ea. qtr.) Secondary piano (Section A). Pr., 3 or permission. Bostwick in charge

7AX-8AX-9AX. **Elementary Piano.** (1-1-1) Group instruction, second year. Fee, $5. Bostwick, Johnson

7CX, 8CX, 9CX. **Elementary Voice.** (1, 1, 1) Group instruction, second year. Fee, $5. Wilson, Adams

10-11-12. **University Singers.** (0-0-2) Study, preparation, and performance of oratorios, cantatas, and other large choral works. No prerequisites. Lawrence

14. **Music Theory.** (2) Practical information for the amateur on the theoretical background of music. Nonmajors only. A survey of the materials of music, its notation and terminology. Correlation with musical scores by means of singing, writing, and the use of recorded music. Not open to students who have had 14s. Terry in charge

15. **Intermediate Sight Singing and Analysis.** (1) Continuation of 5. Unison and part work in minor; more advanced rhythmic patterns. Pr., 5 or exemption. Terry in charge

16. **Intermediate Ear Training and Notation.** (2) Scales, intervals, and chords in minor; improvisation, transposition, and dictation of more difficult melodies. Pr., 6. Terry in charge

18, 19, 20. **Instrumental Instruction.** (2 or 3 ea. qtr.) Secondary piano (Sec. A) or violin (Sec. B) for majors in another field. See description for 48, 49, 50.

21. **Survey of Music.** (5) Backgrounds for understanding of musical forms, idioms, styles. Kinscella

22. **Music Appreciation: Symphonic Music.** (2) For the general student. Upper-division credit for upper-division students. Irvine

23. **Music Appreciation: Opera.** (2) Special attention to Metropolitan broadcasts. Upper-division credit for upper-division students. Irvine

24. **First-year Theory I.** (4) Elementary principles of harmony and counterpoint applied in sight singing, ear-training, creative writing, and keyboard improvisation. Pr., 15, 16, and 2AX or exemption. Terry in charge

25. **First-year Theory II.** (4) Principles of harmony and counterpoint continued. Pr., 24, and 3AX or exemption. Terry in charge

26. **First-year Theory III.** (4) Principles of harmony and counterpoint continued through secondary chords. Pr., 25, and 7AX or exemption. Terry in charge

27, 28, 29. **Eurhythmics.** (1, 1, 1) Experience and understanding of rhythm in music through the synchronization of mind and body. Thiel

30, 31, 32. **University Band.** (1, 1, 1) For underclassmen not registered in Military Band. Welke

37, 38, 39. **Piano Ensemble I.** (1, 1, 1) Reading symphonic literature arranged for two pianos. Pr., permission.

41-42-43. **Orchestral-instruments Laboratory.** (1-1-2) Class instruction in string, woodwind, and brass. May be repeated on different instrument. Pr., 24. Kirchner, Normann, Welke

44. **Music Appreciation: Modern Symphonic Music.** (2) General survey of orchestral music since 1900. Upper-division credit for upper-division students. Woodcock

45-46-47. **University Singers.** (1-1-1) Men's group selected from those registered for 10-11-12 on basis of audition. Pr., permission. Lawrence

48, 49, 50. **Vocal or Instrumental Instruction.** (2 or 3 ea. qtr.) Weekly studio class in interpretation and repertory, and one or two individual half-hour lessons per week. The course numbers indicate successive grades of advancement, and any number may be used in any quarter. Detailed description of the courses in vocal and instrumental music 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 ($A_1$), Creel ($A_2$), Woodcock ($A_3$), Bostwick ($A_4$), Normann ($A_5$)
- B. Violin or Viola.
- C. Voice. Werner ($C_1$), Lawrence ($C_2$), Wilson ($C_3$), Snader ($C_4$), Adams ($C_5$)
- D. Violoncello, Bass. Kirchner ($D_1$), Smith ($D_2$)
- E. Organ. Eichinger
- F. Woodwind. Horsfall (flute, $F_1$), Benno (oboe, $F_2$), Phillips (clarinet, $F_3$), Peterson (bassoon, $F_4$), Swarner (clarinet, $F_5$)
- G. Brass. Schardt (horn, $G_1$), Stroessler (trumpet, $G_2$), Cloud (trombone, $G_3$)
- H. Harp. Beck ($H_1$), Graf ($H_2$)

54. **Berlioz, Liszt, Strauss.** (2) Pr., 4 or 21.

55. **Russian Composers.** (2) The Russian Five and Chaikovski. Pr., 4 or 21.

60. **Advanced Orchestral Instruments (Wind).** (2) Class instruction. Pr., permission. Welke

**62. Advanced Orchestral Instruments (String).** (2) Class instruction. Pr., permission. Kirchner

**65-66-67. Choral Ensemble.** (1-1-1) Women's Glee Club. Werner

**68, 69, 70. Vocal or Instrumental Instruction.** (2 or 3 ea. qtr.) See description for 48, 49, 50. Pr., 50.

**77, 78, 79. Advanced Eurhythmics.** (1, 1, 1) Experience and understanding of rhythm in music taught through the synchronization of mind and body. Pr., 29. Thiel

**80-81-82. University Singers.** (1-1-1) A cappella choir of mixed voices selected from those registered for 10-11-12 on basis of audition. Pr., permission. Lawrence

**83. Piano Repertory I.** (2) J. S. Bach, Scarlatti, K. P. E. Bach, and other harpsichordists. Reading of representative compositions with emphasis upon stylistic performance. Pr., permission. Jacobson

**84. Piano Repertory II.** (2) Haydn and Mozart. Pr., permission. Jacobson

**85. Piano Repertory III.** (2) Early-nineteenth-century composers. Pr., permission. Jacobson

**90, 91, 92. University Concert Band.** (1, 1, 1) Audition required first week of quarter. Welke

**93, 94, 95. University Symphony Orchestra.** (1, 1, 1) Auditions first week of quarter. Kirchner

**98. Choral Music I.** (2) Interpretation and analysis of contrapuntal choral compositions. Sight reading. Pr., 26 or permission. Terry, Hall

**99. Counterpoint I.** (5) Regulation of concurrent melodies. Sixteenth-century motet style. Pr., 98. Creel

**101. Advanced Harmony.** (5) Chromatic harmonies and modulations. Pr., 99. McKay

**102, 103, 104. Opera Workshop.** (2, 2, 2) Active participation in standard opera repertoire. Pr., permission. Linden

**105. French Impressionists.** (2) Pr., 4.

**106. Modern Spanish and British Composers.** (2) Pr., 4.

**112. Musical Forms.** (5) Analysis and exercises in composition. Pr., 26. Woodcock

**116. Junior High School Music.** (3) Contribution to the needs of the adolescent. Pr., 136, Education 75R. Hall

**118, 119, 120. Vocal or Instrumental Instruction.** (2 or 3 ea. qtr.) See description for 48, 49, 50. Pr., 70.

**121-122-123. Madrigal Singers.** (1-1-1) An organization of selected voices. Hall

**124, 125, 126. Chamber Music.** (1, 1, 1) Small instrumental groups both with and without piano. Pr., permission. Jacobson

**128. Choral Music II.** (2) Reading skill and interpretation. Pr., 98. Terry, Hall

**132. Haydn, Mozart, and Beethoven.** (2) Orchestral and chamber music. Pr., 112. Risegari

**136. Technique of Conducting.** (3) Experience in directing choral group. Pr., 98. Munro

**138. Accompanying.** (2) Music of different types and periods for piano in combination with voice or instruments. Pr., permission. Woodcock

**139. Piano Ensemble II.** (1) Two-piano literature for advanced pianists. Pr., permission. Bostwick

**143. Orchestration.** (3) Composing and arranging for instrumental and vocal ensembles. Pr., 99, 112. McKay

**145. Church Music.** (2) Comprehensive study of the chant, hymn, anthem, solo, and small ensemble. Pr., 136. Adams

**148, 149, 150. Vocal or Instrumental Instruction.** (2 or 3 ea. qtr.) See description for 48, 49, 50. Pr., 120.

**151. Richard Wagner.** (2) Pr., 4.

**153. Modern Russian and Finnish Composers.** (2) Pr., 4.

**154. Scoring for Band.** (2) The study of tone color, range, registers, voicing, transposition, fingering, arranging, transcriptions. Pr., 26, 43. Welke

**155. Supervision of School Music.** (5) Pr., 116. Normann

**156. Instrumental Music in the Schools.** (2) Survey of materials; technics of the instrumental program in the elementary and secondary schools. Normann

**157, 158, 159. Composers' Laboratory, First Year.** (3, 3, 3) Pr., permission. McKay

**161. Music in the Americas.** (3) To the beginning of the twentieth century. Lecture and illustration. Pr., junior standing. Kinscella

**162. Music in the Americas.** (3) The twentieth century. Lecture and illustration. Pr., junior standing. Kinscella

**163. Counterpoint II.** (4) Style of Bach. The invention and fugue. Pr., 99. Irvine

**165-166-167. Piano Teaching.** (2-2-2) Survey of teaching material, consideration of materials, supervised practice teaching. Pr., permission. Woodcock

**168, 169, 170. Vocal or Instrumental Instruction.** (2 or 3 ea. qtr.) See description for 48, 49, 50. Pr., 150.

**173, 174, 175. Keyboard Transposition and Improvisation.** (2, 2, 2) Pr., permission. Terry

**177, 178, 179. Composers' Laboratory, Second Year.** (3, 3, 3) For majors in composition and others specially qualified. Pr., permission. McKay

**180.** Orchestral Conducting. (3) Pr., 43, 136. **Welke**

**181.** History of Keyboard Music. (3) Pr., 112. **Kinscella**

**187.** Music of the Middle Ages. (3) Pr., 193. **Munro, Woodcock**

**190.** Palestrina to Bach. (3) Pr., senior standing. **Munro**

**191.** Vocal Literature: Haydn to Debussy. (3) Pr., senior standing. **Wilson**

**192.** Contemporary Music. (3) Pr., senior standing. **McKay, Wilson**

**193.** Music-history Reading Course. (5) Required of senior music majors and of graduate students from other institutions. **Terry, Woodcock**

**195.** Choral Conducting. (3) Pr., 136. **Munro**

**199.** Senior Recital. (2)

Teachers' Course in Music. (See Educ. 75R.)

*Courses for Graduates Only*

**200.** Introduction to Musicology. (2) Survey of scope, aims, and methods; training in research procedure. Lectures, reports, and discussions. Pr., permission. **Irvine**

**210.** History of Musical Performance. (2) **Munro**

**218, 219, 220.** Graduate Vocal or Instrumental Instruction. (2 or 3 ea. qtr.) Pr., thirty credits in the same branch of music. See description for 48, 49, 50.

**221.** History of Instruments. (2) **Irvine**

**222.** History of Notation. (2) **Irvine**

**230.** Seminar in Music Education. (1 to 3) Selected topics in secondary-school music and supervision. Pr., permission. **Munro**

**233.** Seminar in Musicology. (1 to 3) Selected topics in music history, literature, and theory. Pr., permission. **Irvine**

**240, 241, 242.** Graduate Composition. (†) Original work, including composition submitted as thesis. **McKay**

**250, 251, 252.** Research and Thesis. (†) Individual study. Pr., permission. **Irvine, Munro**

Not offered in 1947-1948: **87**, Gregorian Chant; **133, 134, 135**, Piano Repertory IV, V, VI; **160**, Song; **211**, Music of the Elizabethan Age; **212**, Opera; **223**, History of Music Theory.

## NAVAL SCIENCE

*Captain Emory; Commander Fritter; Lieutenant-Commander Fidel; Lieutenant-Commander McNeill; Lieutenant-Commander Bailey; Major Milne; CBM Davis; CQM McGuire; CSM Pendleton; CSK Tinsley; CGM Johnson; Staff Sergeant Kolesar; CY Martin*

### First Year

**1.** Introduction to Naval Science. (3) Naval customs, traditions, law, organization.

**2.** Seamanship and Communications. (3) Basic seamanship and communications.

**3.** Communications and Tactics. (3) Basic ship handling and communications.

### Second Year

**51.** Ordnance. (3) Basic principles of guns and explosives.

**52.** Fire Control. (3) The basic methods of control of surface and antiaircraft fire.

**53.** Electronics. (3) Advanced methods of fire control and the fundamentals of electronic equipment carried aboard naval vessels.

### Third Year

**101.** Piloting. (3) Beginning navigation.

**102.** Navigation. (3) Advanced navigational techniques.

**103.** Ship Handling. (3) Basic training in escort tactics.

### (Marine Corps)

**104.** Military History. (3) Military history of the United States.

**105.** Principles of War and Basic Military Training (Marine Corps). (3) Basic infantry weapons and elementary map and aerial photograph reading.

### Fourth Year

**151.** Naval Engineering. (3) Naval marine-engineering installations and auxiliary machinery.

**152.** Advanced Naval Engineering. (3) Internal-combustion engines with emphasis on the Diesel engine.

**153.** Ship Construction and Stability. (3) Buoyancy and stability of ships, hull design, and watertight integrity.

†To be arranged.

(Marine Corps)

**155.** Marine Tactics. (3) Tactical employment and supply of a Marine infantry unit.

**156.** Combat Technique. (3) Advanced combat tactics and duties of a company officer.

**157.** Amphibious Operations. (3) Amphibious warfare and combined operations.

(Supply Corps)

**158.** Introduction to Supply and Supply Ashore. (4) Supply organization, material procurement, receipt, expenditures, and inventory control.

**159.** Supply Ashore (Continued) and Supply Afloat. (4) Accounting reports and returns. Receipt, storage, and expenditure of material afloat; reports and returns.

**160.** Supply Afloat (Continued). (4) Commissary, ship's store, and clothing and small stores.

## NURSERY SCHOOL AND CHILD DEVELOPMENT

*Assistant Professor Evans; Associate Kanoff*

**101.** Child Development. (3) The first six years. Pr., Psych. 1 and junior standing. Staff

**102.** Child Guidance. (3) Problems and guidance of the first six years. Pr., 101 or permission. Staff

**103.** Nursery School Curriculum and Methods. (3) Staff

**107.** Books and Stories in the Nursery School. (2) Two hours lab., one hour conference. Pr., 101, 102, 103, 111, or equivalent. Staff

**111.** Creative Activities in the Nursery School. (2) Two hours lab., one hour conference. Pr., 101, 102, 103, or equivalent. Staff

**112.** Play and Play Materials in the Nursery School. (2) Two hours lab., one hour conference. Pr., 101, 102, 103, 111, or equivalent. Staff

**117.** Nursery School Practice Teaching. (5) Pr., 101, 102, 103, or equivalent; Psych. 1; and permission. Staff

**118.** Advanced Nursery School Practice Teaching. (5) Pr., 101, 102, 103, 117, or equivalent; Psych. 1; and permission. Staff

## NURSING

*Professor Soule; Associate Professors Leahy, Olcott; Assistant Professors Boyle, Cross, Eklind, Hoffman, Korngold, Patterson, Svelander, Tschudin; Instructors Airth, H. Anderson, J. M. Anderson, Barry, Blackman, Boyer, Burke, Caldwell, Coffman, Crawford, Farrell, Felton, Gallagher, Gray, Jacobson, Jamison, Kerby, Kinnaman, Kintner, Lamberty, Lankford, Larson, McDonald, MacIvor, Markham, Maxey, Milroy, Morgan, Northrop, Rykken, Smith, Steele, Stoleson, Tillotson, White*

**1.** History of Nursing. (3) Open to any woman student. Jamison, Leahy

**5.** Prevention and Care of Illness in the Home. (3) The utilization of community resources is stressed in regard to maintaining optimum health for the child. Anderson, Cross

Courses 120-149 inclusive are Hospital Division courses. They are open only to students in Curriculum A or in approved schools of nursing.

**120.** Principles and Practice of Elementary Nursing. (5) Felton, Hoffman, Jamison, Kerby

**121.** Advanced Nursing Procedures and Methods of Planning Individualized Nursing Care. (3) Felton, Hoffman, Jamison, Kerby

**122.** Practice in Elementary Nursing and Special Hospital Departments. (3) Medical and surgical services correlated with laboratory, X-ray, and pharmacy experience. Felton, Hoffman, Jamison, Kerby

**123.** Introduction to Medical and Nursing Science. (3) Svelander, Felton

**124.** Principles of General Medicine, Surgery, Otolaryngology, and Nursing Care. (5) Airth, Rykken, Caldwell

**125.** Principles of Medical and Surgical Specialties and Their Nursing Care. (5) Airth, Caldwell, Rykken, White

**128.** Medical Nursing Practice. (6) Including communicable disease and related out-patient clinics. Gray, Rykken, Caldwell, Stoleson

**129.** Principles of Special Therapy. (2) Light, electricity, heat, water, massage, exercise, and occupation as aids in care or control of disease processes. Anderson

**130.** Principles of Preventive Medicine and Nursing Care in Communicable Diseases. (4) Svelander, Stoleson

**132.** Surgical Nursing and Diet Therapy Practice. (6) Six weeks in general surgical service with related out-patient clinics and six weeks in diet therapy. Airth, Gray, Northrop

**133.** Operating Room and Emergency Service Practice. (6) Ten weeks in operative nursing and anesthetic care. Two weeks in emergency service. Steele, Gray, Boyer

**134.** Nursing Practice n Surgical Specialties. (6) Orthopedic, emergency surgery, head injury, urology, gynecology, ear, nose and throat, related out-patient clinics. Airth, White

137. **Introduction to Public Health Nursing.** (2) — **Smith**

138. **Professional Problems in Nursing.** (2) — **Svelander, Korngold**

139. **Principles of Pediatrics and Pediatric Nursing.** (5) Physical and mental development of normal children included. — **McDonald, MacIvor, Markham**

140. **Pediatric Nursing and Nursery School Practice.** (6) — **McDonald, MacIvor, Markham**

141. **Principles of Obstetrics and Obstetrical Nursing.** (5) — **Lankford, Barry**

142. **Obstetrical Nursing Practice.** (6) — **Gray, Lankford, Barry**

143. **Nursing Practice in Special Fields.** (6) 12 weeks in tuberculosis, out-patient, and industrial nursing. — **Blackman, Jacobson, Staff**

144. **Senior Nursing Practice.** (6) 12 weeks advanced nursing practice in a hospital or a public health agency. — **Olcott, Svelander, Tschudin, Patterson, Staff**

145. **Tuberculosis Nursing Practice.** (3) Six weeks in a tuberculosis sanatorium. — **Maxey, Jacobson, Blackman, Burke, Staff**

146. **Visiting Nursing Practice.** (3) Six weeks in a public health agency. — **Patterson, Staff**

147. **Principles of Psychiatry and Psychiatric Nursing.** (5) — **Lamberty**

148. **Psychiatric Nursing Practice.** (6) — **Lamberty, Kintner, Staff**

149. **Principles of Ward Management and Bedside Teaching.** (3) Management of ward routines and assistant head nursing, including individual and bedside teaching. — **Olcott, Tschudin, Staff**

### *Courses for Graduate Registered Nurses Only*

150. **Principles of Teaching Nursing and Health.** (5) — **Boyle, Tschudin**

151. **Administration of Schools of Nursing.** (5) — **Olcott**

152. **Supervision of Hospital Departments.** (5) Ward teaching and supervision. — **Olcott, Boyle**

153. **Hospital Administration in Relation to Nursing Service.** (5) — **Hoffman**

154. **Practice Teaching and Supervision in Hospitals.** (10) Pr., 150, 152. — **Olcott, Tschudin**

155, 156, 157. **Advanced Nursing Practice in Clinical Specialties.** (3 ea. qtr.) — **Staff**

158. **Advanced Nursing Practice in Emergency, Fracture, and Neurological Injuries.** (3) — **White**

159. **Principles of Advanced Nursing.** (2) Integration of all aspects of nursing in the solution of nursing problems in special clinical fields. — **Boyle, Cross**

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) Public health theory combined with planned field trips. — **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. **Survey of Current Literature in Specialized Fields in Public Health Nursing.** (2) Pr., 167. — **Patterson**

166. **Advanced Field Work.** (12) Pr., 164. — **Patterson**

167. **Principles, Organization, and Administration of Public Health Nursing.** (3) Policies and developments in national, state, and local public health nursing services. — **Leahy, Smith**

168. **Special Fields of Public Health Nursing.** (5) — **Patterson**

178. **Principles, Organization, and Administration of Industrial Nursing.** (3) — **Jahncke**

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. — **Hoffman**

190. **Methods of Supervision of Public Health Nursing.** (3) — **Leahy**

191. **Personnel and Counseling Problems in Nursing.** (3) — **Leahy**

192. **Field Work in Placement and Counseling.** (8 to 16) Practice in offices where placement for nurses is carried on, and in the general field of personnel work such as department stores and industry. 20-40 hours per week. — **Leahy**

195. **Survey of Trends in Contemporary Nursing.** (3) Particular emphasis on postwar problems. — **Soule**

*Courses for Graduates Only*

**201, 202, 203. Seminar in Nursing Problems.** (†) Pr., graduate registered nurse, thirty credits in nursing. Soule, Staff

**205. Research in Nursing Education, Hospital Administration, Public Health Nursing.** (†) Pr., 150, 151, 152, 167, 168. Soule, Staff

**Service Courses for Other Hospitals**

Requirement: Student must be employed as an attendant in an approved hospital.

**6. Principles and Practice of Elementary Attendant Nursing.** (3) Lamberty

**9. Principles of Psychiatry and Psychiatric Attendant Nursing.** (3) Lamberty

**11. Sociology for Hospital Attendants.** (3) Lamberty

## OCEANOGRAPHY

*Professors T. G. Thompson, Norris, Robinson, Utterback; Associate Professors Church, Mackin, Ordal*

**1. Survey of Oceanography.** (5) Church

*Courses for Graduates Only*

**249. Graduate Seminar.** (†) Staff

**250. Research in Oceanography.** (†) Staff

**Courses in Marine Zoology.** (See Zoology 106, 107, 125, 126.)

**Courses in Marine Botany.** (See Botany 210, 211, 275.)

**Courses in Oceanographical Chemistry.** (See Chemistry 155, 156, 225.)

**Course in Physical Oceanography.** (See Physics 166.)

**Courses in Geology.** (See Geology 116, 126, 131, 200.)

## PHARMACY, PHARMACOGNOSY, PHARMACEUTICAL CHEMISTRY AND TOXICOLOGY

*Professors Goodrich, Johnson, Rising, Fischer; Associate Professor Plein; Assistant Professors Arrigoni, Youngken; Instructor Rasanen*

**Practical Pharmacy**

**1-2-3. Fundamental Principles and Processes of Pharmacy, Elementary Pharmaceutical Preparations.** (3-3-3) Two lectures, one laboratory. A study of the practical application of mathematics and physics to pharmacy. Theoretical and practical consideration of weights and measures, alligation, specific gravity, temperature conversions, percentage solution, sublimation, vaporization, distillation, crystallization, comminution, and other applied pharmacy processes. Manufacture of U.S.P. and N.F. galenical preparations; development of laboratory technique; study of the U.S.P. and N.F. Rising

**4. History of Pharmacy.** (2) Two 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. Plein

**9-10-11. Prescriptions.** (3-3-3) Two lectures, one laboratory. A study of fundamental principles of prescription compounding and dispensing, with emphasis on accuracy and technique. Latin nomenclature, vocabulary, abbreviations, and prescription reading are included. Pr., Pharmacy 1-2-3, Chemistry 8-9-10. Plein

**15. Home Remedies.** (2) Two lectures. A study of the remedies and cosmetic preparations commonly used in the home, from the point of view of composition, effectiveness, and safety. Rising

**51. Elementary Pharmacy.** (2) For nurses only. Two lectures. Survey of fundamental knowledge of the theory of dispensing pharmacy. Larson

**113-114-115. Professional Pharmacy.** (5-5-5) Two lectures, one quiz, two laboratories. A study of prescriptions from active files. The principles of professional pharmacy are discussed under such headings as general practice, hospital pharmacy, veterinary pharmacy, and dental pharmacy. Remedial agents in treatment of tropical diseases. Professional films and informed speakers. The laws and regulations governing the profession. Pr., Pharmacy 9-10-11. Rising

**118. Pharmaceutical Accounting.** (5) Five lectures. Principles of bookkeeping and accounting as applied to the retail store and to meet the needs of the practicing pharmacist. Draper

**173. Cosmetic Manufacturing.** (3 to 5) One lecture, one to three laboratories. Preparation and manufacture of many types of cosmetics and a study of their physical, chemical, and physiological properties. Rising

**182, 183, 184. New Remedies.** (3, 3, 3) Three lectures. The important official and nonofficial remedies currently found in modern practice considered from the standpoint of composition, manufacture, dosage, and properties. Plein

**191. Undergraduate Research.** (1 to 5) Open to juniors and seniors. Research problems in manufacturing and dispensing pharmacy. Rising, Plein

†To be arranged.

*Courses for Graduates Only*

**201.** Major Research for M.S. degree. (Maximum of 25 credits) **Rising, Plein**

**202.** Major Research for Ph.D. degree. (Maximum of 45 credits) **Rising, Plein**

### Pharmacognosy

**12, 13, 14. Pharmacognosy.** (3, 3, 3) Three lectures. Plant and animal drugs, their sources, methods of collection, preservation, identification, active constituents, and adulteration. **Goodrich, Youngken**

**104-105. Microscopy.** (3-2) One lecture, two laboratories; one lecture, one laboratory. The use of the microscope. Stains and microchemical techniques in examining powdered drugs, cereal products, mold spores, pollens, and vegetable and animal fibers. The study of adulteration and contamination of drugs, foods, spices, and fabrics. Pr., 14. **Youngken**

**106. Medicinal Plants.** (2) One lecture, one 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. Preparation of herbarium specimens. Analysis of marketing and market values. Pr., 14. **Youngken**

**112. Biologicals.** (3) Three lectures. The study of animal products and antibiotics from the standpoint of types used in medicine, their origins, modes of action, and preparations. Among the products included are whole and desiccated glands, hormones, bacterial products, serums, vaccines and related products, and mold constituents. Pr., Microbiology 101. **Youngken**

**193. Histological Technique and Research Problems.** (1 to 5) Open to juniors and seniors. **Youngken**

*Courses for Graduates Only*

**205.** Major Research for M.S. degree. (Maximum of 25 credits) **Goodrich, Youngken**

**206.** Major Research for Ph.D. degree. (Maximum of 45 credits) **Goodrich, Youngken**

### Pharmaceutical Chemistry and Toxicology

**5. Gravimetric Quantitative Analysis.** (5) Two lectures, one quiz, two laboratories. The principles of gravimetric analysis, including its application to pharmaceutical compounds. Pr., Chemistry 10. **Rasanen**

**6. Volumetric Quantitative Analysis.** (5) Two lectures, one quiz, two laboratories. The principles of volumetric analysis, including its application to drugs and preparations of pharmaceutical importance. Pr., 5. **Rasanen**

**16. Pharmaceutical Calculations.** (2) Two lectures. A survey of mathematics, including the study of proportions, the law of exponents, elementary quadratic equations, logarithms, and plane trigonometry as applied specifically to problems in pharmacy and pharmaceutical chemistry. **Rasanen**

**107. Urinalysis.** (2) One lecture, one laboratory. The qualitative and quantitative detection and determination of physiological and pathological constituents of urine. Pr., 6. **Rasanen**

**108. Pharmacopoeial Assaying.** (2) One lecture, one laboratory. The assay of various official products involving the application of special analytical techniques. Pr., 6. **Rasanen**

**192. Research Problems.** (1 to 5) Open to juniors and seniors. Research problems in pharmaceutical chemistry. **Fischer, Arrigoni**

**195-196. Pharmaceutical Chemistry.** (5-5) Two lectures, one quiz, two laboratories. The pharmacy and chemistry of carbohydrates, proteins, fats, fixed and volatile oils, waxes, glycosides, resins, dyes and preservatives used in foods, and other plant and animal principles. The laboratory work consists of qualitative tests and quantitative methods for determining component parts. Pr., 6 and Chemistry 39. **Fischer**

**197. Pharmaceutical Chemistry and Toxicology.** (5) Two lectures, one quiz, two laboratories. History, source, structure, synthesis, qualitative detection, and quantitative determination of alkaloids. Includes the separation and identification of poisons from animal tissues. Pr., 6 and Chemistry 39. **Fischer**

*Courses for Graduates Only*

**203.** Major Research for M.S. degree. (Maximum of 25 credits) **Fischer, Arrigoni**

**204.** Major Research for Ph.D. degree. (Maximum of 45 credits) **Fischer, Arrigoni**

**211-212-213. Advanced Pharmaceutical Chemistry.** (5-5-5) Three lectures, two laboratories. 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 investigation, and vitamin determinations. Open to qualified students after conference with instructor. **Arrigoni**

## PHILOSOPHY

***Professor Nelson; Associate Professor Rader; Assistant Professors Melden, Phillips, 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, Phillips, Smullyan**

**2. Introduction to Social Ethics.** (5) The nature of the good society and of right social action. The rival ideals of aristocracy, liberal democracy, fascism, and communism. **Rader**

**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. **Melden**

**5.** **Introduction to Logic.** (5) Deductive and inductive logic. Conditions of clear statement and valid reasoning. Propositions, contradiction, 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) Ancient, medieval, and modern. **Rader**

**104-105-106.** **Metaphysics.** (3-3-3) Theories of reality; nature of existence, appearance and reality, causation, relation of mind to body, pluralism and monism, the self and human freedom. Pr., 1 or 102 or permission. **Nelson**

**110.** **Philosophy of Mind.** (5) Theories of the nature of the mind, the relation between mind and body, the self, memory, the unconscious, introspection, and our knowledge of other minds. Pr., 1. **Melden**

**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 of the humanities. Pr., 5. **Smullyan**

**112.** **Philosophy of History.** (5) An analysis of the basic concepts employed in historical interpretation. **Phillips**

**129.** **Philosophy of Art.** (5) Theories of the nature of art and beauty. The creative process, the materials and structure of the work of art, the contemplation and criticism of aesthetic objects. The role of art in democracy and the machine age. **Rader**

**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. **Phillips**

**143.** **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**

**193.** **Advanced Logic.** (5) Symbolic logic; critical examination of logical doctrine bearing on philosophical questions; inductive method. Pr., 5. **Nelson**

**196.** **The Ethical and Political Philosophy of China.** (3) **Shih**

**197, 198, 199.** **Readings in the Philosophical Classics.** (2, 2, 2) **Phillips**

*Courses for Graduates Only*

**241-242-243.** **Seminar in Plato and Aristotle.** (4-4-4) Pr., permission. **Rader**

**251, 252, 253.** **Research in Philosophy.** (1 to 6 ea. qtr.) Pr., permission. **Staff**

Not offered in 1947-1948: 123, Philosophy in English Literature of the 19th Century; 137-138-139, Development of Social Philosophy; 144-145, American Philosophy; 207-208-209, Seminar in Philosophy of Science; 214-215-216, Seminar in Logic; 234-235-236, Seminar in Descartes, Spinoza, Leibniz; 237-238-239, Seminar in Locke, Berkeley, Hume; 244-245-246, Seminar in Kant and Hegel.

## PHYSICAL AND HEALTH EDUCATION

### I. FOR MEN

*Professor Belshaw; Assistant Professors Auernheimer, Cutler, Kunde, Peek, Reeves, Torney; Instructors Mills, Stevens; Associates Buckley, Clark, Edmundson, Eriksen, McLarney, Ulbrickson, Welch*

**1, 2, 3.** **Adapted Activities.** (1, 1, 1) Gymnastics, games, and sports to meet the needs of the individual. **Cutler**

**7, 8, 9.** **Physical Education Activities for Freshman Majors.** (2-2-2) **Staff**

**10, 11, 12.** **Physical Education Activities for Sophomore Majors.** (2-2-2) **Staff**

**16 to 70.** **Physical Education Activities.** (1 each) Course 16, handball; 17, basketball; 18, tennis; 19, playground ball; 20, golf$\phi$; 21, track; 22, crew (class); 23, fencing; 24, boxing; 25, tumbling; 26, apparatus and stunts; 27, wrestling; 28, volleyball; 29, swimming; 30, soccer; 31, touch football; 32, badminton; 33, archery; 34, calisthenics; 35, jiu jitsu; 36, speedball; 51, freshman varsity crew; 52, varsity crew; 53, freshman varsity football; 54, varsity football; 55, freshman varsity track; 56, varsity track; 57, freshman varsity swimming; 58, varsity swimming; 59, freshman varsity basketball; 60, varsity basketball; 61 freshman varsity baseball; 62, varsity baseball; 63, freshman varsity tennis; 64, varsity tennis; 65, varsity golf; 66, Pack Forest; 67, varsity skiing; 68, varsity volleyball; 69, varsity hockey. **Staff**

**15.** **Personal Health.** (2) Health information that affords a basis for intelligent guidance in the formation of health habits and attitudes. **Reeves**

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$\phi$Golf instruction fee (payable to golf club), autumn, spring, $3; winter, $1.75.

## II. FOR WOMEN

*Professor Hutchinson; Associate Professors deVries, McLellan, Rulifson, Wilson; Assistant Professors Gunn, Horne, Kidwell, McGound, MacLean, Waters; Instructor Fox; Associates Berry, Slaughter*

### Activity Courses

**11, 12, 13. Physical Education Activities for Freshman Majors.** (2, 2, 2) Hockey, soccer, speedball, basketball, badminton, tennis, stunts and tumbling.

**14, 51, 52, 53. Physical Education Activities for Sophomore Majors.** (2, 2, 2, 2) Practice in the skills and techniques of gymnastics, folk dancing, tap and clog and social dancing, swimming, and modern dance.

**57 to 98. Physical Education Activities.** (1 ea. qtr.) Course 57, fencing; 58, advanced fencing; 61, folk and national dancing; 62, clog and tap dancing; 63, advanced clog and tap dancing; 64, hockey; 65, basketball; 66, advanced folk dancing; 67, tennis; 68, stunts and tumbling; 69, advanced tennis; 70, athletic games; 75, archery; 76, advanced archery; 82, volleyball; 83, indoor baseball; 84, badminton; 85, canoeing; 86, advanced badminton; 87, golf$\phi$; 88, advanced golf$\phi$; 89, bowling‡; 90, skiing; 91, modern dancing; 92, advanced modern dancing; 93, advanced bowling‡; 95, elementary swimming; 96, intermediate swimming; 97, advanced swimming; 98, diving; 99, lifesaving.

### Health Education Course

**10. Health Education.** (2) Health problems of freshman women. McLellan, Horne, Gunn, Waters

## III. PROFESSIONAL COURSES FOR MEN AND WOMEN

**101. Methods and Materials in Gymnastics, Stunts, and Tumbling.** (3) WOMEN. Pr., or accompanying course, Anat. 110 and Zool. 7. MacLean, Wilson

**102. Problems in Physical and Health Education and Recreation.** (2) MEN and WOMEN. Relation of problems to professional study. Hutchinson, Reeves

**107. Personal and General Hygiene.** (3) MEN. Advanced course designed primarily for professional students in physical education. Pr., sophomore standing. Reeves

**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. Wilson

**111. Rhythmic Activities for Small Children.** (2) WOMEN. Educational value, significance in child development, methods of presentation. Wilson

**112. Elementary-school Athletic Program.** (3) WOMEN. Progressive series from the hunting games and elementary forms to the standard athletic activities of adolescent years. 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 posture. Pr., Zool. 7. Belshaw

**116. First Aid and Safety.** (3) MEN and WOMEN. May satisfy both the Standard and Advanced American Red Cross First Aid Certification. 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., 14, 51, 52. deVries, Wilson

**122. Kinesiology.** (3) MEN and WOMEN. Analysis of leverage in body movement and problems of readjustment in relation to posture and to physical education activities. Pr., 115, Zool. 7. Cutler

**124. Playground Program.** (3) MEN and WOMEN. Activities suitable for various age levels, i.e., handcraft, music, dramatics, nature study, low organized games, free play, social recreation, contests and tournaments, story telling, special features, and outing activities. Pr., 145 and six credits in methods courses. Kunde

**126. Observation and Practice Teaching.** (In Recreation) (2 or 4) MEN and WOMEN. Fifty hours of practice teaching in organized recreation centers. Pr., 145 and six credits in methods courses. 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 significance of current movements and existing local and national organizations; administrative practices; organization of activities. Pr., junior standing, Psych. 1, Soc. 1. 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. 7. Kidwell, Cutler

**136. Athletic Training and Conditioning.** (1) MEN. Pr., 116 and senior standing.

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$\phi$Golf instruction fee (payable to golf club), autumn, spring, $3; winter, $1.75.
‡Bowling fee (payable at bowling alley), $4.20.

**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. 7, 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 and permission; or 162, 163, 164. For men, 3 credits; for women, 2 credits. **Torney, Hutchinson**

**153. Methods and Materials in Health Teaching.** (3) MEN and WOMEN. The place of health instruction in the elementary and high school; the general program; subject matter and methods. Pr., senior standing and 145, 165, Zool. 7. **McLellan**

**155. Dance Composition.** (2) WOMEN. Practice in modern dance; analysis of choreography; opportunity for creative work. Pr., 92, 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., 52 or 92, 118. **deVries**

**158. Methods in Teaching Apparatus, Tumbling, and Stunts.** (2) MEN. Pr., permission. **Auernheimer**

**159-160. Dance Production.** (2-2) WOMEN. Costuming, lighting, staging for dance concerts and festival programs. Pr., 52 or 92, 118. **deVries**

**161. Methods in Teaching Boxing and Wrestling.** (2) MEN. Pr., permission. **Mills, Stevens**

**162. Methods and Materials in Teaching Folk, Tap, and Clog Dancing.** (2) WOMEN. Pr., 14, 51, 118. **Wilson**

**163. Methods and Materials in Teaching Sports.** (3 or 2) MEN and WOMEN. Women, 3 credits; pr., 51, 52, 112; men, 2 credits; pr., permission. **Rulifson, MacLean, Cutler**

**164. Methods in Teaching Swimming.** (3 or 2) MEN and WOMEN. Includes diving, lifesaving, and direction of camp waterfront program. Women, three credits; pr., 53 or 97 and 99, 85; men, two credits; pr., 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**

**170. Methods in Teaching Football.** (2) MEN. Pr., junior standing. **Welch**

**171. Methods in Teaching Basketball.** (2) MEN. Pr., junior standing. **Edmundson**

**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. 75V.)

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. **Hutchinson, Belshaw**

**203. Seminar in Health Education.** (3) MEN and WOMEN. Pr., 145, 153, 165. **Hutchinson**

**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**

**207. Research.** (2 to 5) **Staff**
A—Physical Education
B—Tests and Measurements
C—Physiology of Exercise
D—Health Education
E—Recreation

**208. Administration of Recreation.** (5) Pr., 124, 145, or permission. **Kunde**

**250. Thesis.** (6 to 9) **Staff**

## PHYSICS

***Professors Utterback, Brakel, Henderson, Loughridge, Uehling; Associate Professor Neddermeyer; Assistant Professors Higgs, Kenworthy, Sanderman, Geballe, Schmidt***

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.

**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.

**50. Sound and Music.** (5)

**54.** Elementary Photography. (4) Pr., elementary physics or chemistry. **Higgs**

**70.** Physics for Nurses. (5) **Sanderman**

**90.** Selected Topics in Physics for Home Economics Majors. (5) **Sanderman**

**97, 98, 99.** Physics for Engineers. (5, 5, 5) 97: Mechanics; 98: Electricity; 99: Heat and light. Pr., one year high school physics, 10 credits college mathematics. **Brakel, Loughridge**

**101, 102.** Introduction to Modern Physics. (3, 3) Pr., 3 or 6. **Utterback**

**105, 106.** Electricity. (3, 3) Pr., 3 or 6. **Brakel**

**115.** Photography. (4) The more important processes; application to the sciences and arts. Pr., 54.

**140.** Sound. (3) Sources, transmission, and absorption. Pr., 3 or 6.

**150.** Heat and Introduction to Thermodynamics and Kinetic Theory. (3) Pr., 3 or 6.

**154.** Low and High Frequency Measurements. (4) Resistance, inductance, and capacitance as a function of frequency. Simple and coupled circuits, impedance of complex circuits, and vacuum-tube characteristics. Pr., 106, calculus.

**155.** Introduction to Modern Physics for Electrical Engineers. (3) Pr., senior in E.E.

**160, 161.** Optics. (3, 3) Pr., 3 or 6, calculus.

**167, 168, 169.** Special Problems. (†) Pr., permission.

**170.** Spectrometry. (3) Pr., 160 or permission.

**180.** History of Physics. (2) Pr., 3 or 6.

**185.** Nuclear Physics. (3) Pr., 102. An extension of the concepts of modern physics to the study of some experimental material of nuclear physics. Artificial disintegration, high-energy particles, radiation, nuclear fission, etc.

**191, 192.** Theoretical Mechanics. (4, 4) Pr., 20 credits in physics, calculus. **Loughridge**

**195, 196.** Experimental Atomic Physics. (3, 3) Pr., 30 credits in physics.

*Courses for Graduates Only*

**200, 201, 202.** Introduction to Theoretical Physics. (6, 6, 6) Foundation for subsequent specialization and more intensive study. Pr., 40 credits in physics; Math. 114 concurrently.

**205.** Kinetic Theory. (6) Pr., 40 credits in physics.

**212.** Conduction of Electricity Through Gases. (6) Pr., 40 credits in physics.

**221.** Collision Theory. (6) Pr., 240.

**222.** The Metallic State. (†)

**243.** Relativity. (†)

**245, 246, 247.** Advanced Quantum Mechanics. (†)

**226, 227.** Electromagnetic Theory. (†)

**230, 231.** Atomic Structure. (†)

**250, 251, 252.** Seminar. (†)

**256, 257, 258.** Research. (†)

Not offered in 1947-1948: 109, Pyrometry; 166, Physical Oceanography; 204, Thermodynamics; 205, Kinetic Theory; 210, Mathematical Theory of Sound; 211, Statistical Mechanics; 213, 214, Electricity and Magnetism; 216, X-Rays; 219, Hydrodynamics; 220, Advanced Dynamics; 239, 240, Wave Mechanics.

## POLITICAL SCIENCE

*Professors Martin, Cole, Cook, Levy, Mander, Shipman, Taylor, Wang Kan-yu, Carsun Chang; Associate Professors von Brevern, Michael, Webster; Acting Assistant Professor Riley; Instructor Schram; Associate Setzer*

*Elementary Course Primarily for Freshmen*

**1.** Survey of Political Science. (5) Principles and problems of government. The state in theory, law, politics, and administration. **Cole, Mander, Cook**

*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. **Mander**

†To be arranged.

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. **Cook**

58. **Government in Action.** (5) Problems of political leadership; public opinion and political organization; bureaucratic control. Open to freshmen who have had 1. **Shipman**

74. **Power and the State.** (5) Pragmatism in politics; Machiavellian diplomacy; Caesarism and the "leader principle"; military considerations. **von Brevern**

*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. **Cook**

112. **American Political Thought.** (5) Major thinkers and movements from the Colonial period to the present. **Cook**

113. **Contemporary Political Thought.** (5) Changing political ideas since the French and Industrial Revolutions, as bases for contemporary philosophies of democracy, communism, and fascism. **Cook**

114. **Oriental Political Thought.** (5) Theories of the Oriental state as exhibited in the writings of statesmen and philosophers. **Carsun Chang**

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. **Martin**

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. **von Brevern**

127. **International Government and Administration.** (5) Law and organization in international relations; foreign offices; regional and global international institutions. **Mander**

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. **Michael**

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**

133. **Europe Since 1914.** (5) Broad outline of history from World War I to the present. **Emerson**

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. **Mander**

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. **Michael**

150. **Government and Interest Groups.** (5) Agrarian, labor, professional, business, and industrial interests in politics; impact on representative institutions and governmental processes. **Riley**

151. **The American Democracy.** (5) Nationalism and federalism; regionalism; the presidency; the representative system; judicial institutions; reconciliation of policy and administration. **Riley**

152. **Political Parties and Elections.** (5) Organization and methods. **Riley**

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

**161.** Government and the American Economy. (5) Government regulation, promotion and services affecting general business, public utilities, agriculture, banking, investments, and social welfare. Shipman

**162.** Problems of Municipal Government and Administration. (5) The city charter; relations with the state and other local units; municipal functions and services, with special reference to the city of Seattle. Webster

**163.** State and Local Government and Administration. (5) Structure; functions; procedures; suggested reorganization; with special reference to Washington State, King County, and other units of government. Webster

**166.** Chinese Government. (5) Imperial government; transition period; national government; present forms of local government; constitutional draft; present political situation. Wang Kan-yu

**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. Shipman

**169.** Japanese Government. (5) Emergence of modern government; the emperor; position of the military; central and local government; diet; parties and popular movements.

Public Finance. See Economics and Business 171.

*Courses for Advanced Undergraduates*

**195.** Honors Course for Seniors. (5) Open to qualified majors in the last term of the senior year. Cook

**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. Cook

**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. Cook

**221, 222.** International Government and Organization. (3 to 5 ea. qtr.) Advanced studies, with emphasis on constitutional organization and administrative procedures. Mander

**234.** Seminar in Roman Law. (3) Modern research. Readings in Justinian's *Institutes* and *Digest* in English translation. Levy

**251.** Seminar in Politics and Administration. (3 to 5) Special topics, with emphasis on political procedures and administrative processes. Shipman

**256.** Seminar in Government and Public Law. (3 to 5) Special studies in modern problems of government and in present tendencies in public law, especially American. Cole

**299.** 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 1947-1948: 100, Postwar Problems in Government and Administration, National and International; 116, Introduction to Roman Law; 117, Modern Theories of Law; 135, Comparative Colonial Policies and Administration; 142, Comparative Unitary Systems; 164, Public Policy in Governmental Planning; 170-171-172, Foundations of National Power; 234, Seminar in Roman Law.

## PSYCHOLOGY

*Professors Smith, Guthrie, Wilson, Esper; Associate Professors Edwards, Gundlach, Horton, Loucks; Assistant Professors Heathers, Hermans, Humphreys*

**1.** General Psychology. (5) An introduction to the principles of human behavior. Wilson, Staff

**2.** Psychology of Adjustment. (3) Applications of psychological principles to the problems of everyday life. Pr., 1. Wilson, Esper, Horton, Loucks

**3.** Applied Psychology. (3) Applications of psychological principles and methods in the fields of medicine, law, business, and engineering. Pr., 1. Gundlach

**4.** 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. No prerequisites.

**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., 1, Zool. 1, 2. Esper

**103. Physiological Psychology.** (5) The physiological processes in attention, emotion, fatigue, and sleep. Recent research on muscle potentials and brain waves. Pr., 102. Loucks

**106. Experimental Psychology.** (5) Practice in planning, conducting, and reporting laboratory research. Pr., 108 and 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) Techniques of measuring relationships. Sampling theory and tests of significance. Pr., 1. Edwards

**109. Experimental Design.** (3) Planning research problems; formulation of hypotheses; techniques of equating groups; sampling problems; factorial design and analysis of variance; interpretation of data. Pr., 108. Edwards

**111. History of Psychology.** (3) The experimental and theoretical backgrounds of modern psychology. Pr., 1. Gundlach

**112. Modern Viewpoints in Psychology.** (3) The fundamental conceptions underlying the theory and researches of contemporary psychologists. Pr., 10 credits in psychology. Gundlach

**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. Esper

**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., 1. Horton

**118. Social Psychology.** (3) Psychology of human institutions. Pr., 1. Guthrie

**119. Animal Laboratory.** (5) Supervised training in experimental work with animals. Pr., 116. Horton

**120. Psychology and the Arts.** (2) The bases for appreciation of, and the factors in, creative work, especially in painting and design, music, theatre, and literature. Pr., 1. Gundlach

**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. Gundlach

**123. Industrial Psychology.** (2) A survey of the applications of psychological principles and methods of investigation to problems of industrial relations. The measurement of morale and job satisfaction. The use of psychological tests in selection and placement. Interviewing and counseling techniques. Pr., 1.

**124. Psychology of Learning.** (5) A survey of theories and experimental research in the field of human learning. Pr., 1. Esper

**126. Abnormal Psychology.** (3) Origin and mechanism of behavior that interferes with proper adjustment; physiological pathology; psychotherapy. Pr., 2. Smith, Loucks

**127. Tests and Measurements.** (5) Test construction. Practice in administering group tests. Sources of error. Methods of scoring. Pr., 108. Heathers

**128. Psychology of Social Attitudes.** (2) Theory and techniques of attitude-scale construction. Applications of attitude scales in education, industry, and the social sciences. Determinants of attitudes and experimental studies of attitude change. Pr., 118 and any elementary statistics course. Edwards

**129. Individual Testing.** (5) Use of the more common tests in clinical diagnosis. Pr., 127. Heathers

**130. Clinical Psychology.** (3) Techniques of history taking, diagnosis, and therapy. Cooperation with schools and social agencies. Pr., 129. Smith

**131. Child Psychology.** (5) Individual and social development and their causes, from infancy to adult age. Pr., 1. Smith

**135. Counseling and Interviewing.** (3) Methods of securing information concerning an individual's personal problems, and procedures for helping the individual to solve these problems. Pr., 2. Heathers

**141. Sensory Basis of Behavior.** (5) An account of sensory and perceptual phenomena; sensory equipment; theories of sense-organ function. Pr., 1. Horton

**143. Individual Differences.** (2) The interrelationships and patternings of human traits and capacities. Pr., 1. Gundlach

**145. Public Opinion Analysis.** (3) Nature and structure of public opinion. Propaganda and shifts in public opinion. Accuracy and validity of modern polling techniques. Construction of questionnaires for opinion surveys. Problems of interviewing and sampling in opinion research. Pr., 1 and any elementary statistics course. Edwards

**151, 152, 153. Undergraduate Research.** (1 to 3 each quarter) Pr., permission. Staff

**160. Psychological Factors in the Design and Operation of Industrial Machines.** (2) 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

*Courses for Graduates Only*

**201, 202, 203. Graduate Research.** (†) Pr., graduate status in psychology and permission. **Staff**

**222. Psychology of Language.** (2) Psychological principles applied to linguistic development and organization. Relation of symbolism to human behavior. Pr., 1. **Esper**

**225. Factor Analysis.** (3) Methods of analysis. Practice in the use of the centroid method. Applications. Pr., permission. **Humphreys**

**230. Projective Personality Tests.** (5) Theory of projective tests. Practice in scoring and interpreting projective tests with emphasis on the Rorschach. Pr., 129. **Heathers**

**240. Conditioning.** (5) Experimental work on conditioning. Significance for the several fields of psychology. Emphasis on specific research techniques. Pr., 1. **Loucks**

**242. Personality.** (3) A survey of theories of personality development. The psychodynamics of personality organization. Pr., graduate status. **Edwards**

**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., graduate status in psychology. **Wilson**

**281. Test Construction.** (3) Statistical bases of test construction and of the use of test batteries. Practice on test construction. Pr., 108 and 127 or equivalent. **Humphreys**

**289A, B. Seminar in the History of Psychology.** (2, 2)

**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)

## RADIO EDUCATION

*Assistant Professor Adams*

**70. Backgrounds.** (2) History of broadcasting; organization of radio industry; social, educational, and cultural responsibilities of radio. Upper-division credit for upper-division students. Pr., soph. standing.

**71. Commercial Aspects.** (2) Relation of the radio industry to advertising agencies, unions, and the press; laws and regulations controlling radio broadcasting. Upper-division credit for upper-division students. Pr., soph. standing.

**72. Radio Techniques.** (2) Studio organization and operation; radio as entertainment. Upper-division credit for upper-division students. Pr., soph. standing.

**169. Station Management.** (3) Pr., senior standing.

## ROMANIC LANGUAGES AND LITERATURE

*Professors Nostrand, Frein, Garcia-Prada, Goggio, Umphrey; Professor Emeritus Helmlinge; Associate Professors Chessex, Simpson, W. Wilson; Assistant Professors David, Whittlesey, C. Wilson; Instructors Creore, Keller; Associates Allison, Esteves, Rojas*

The prerequisites for courses that follow Elementary 1-2 may normally be satisfied by work done in high school on the basis of one semester in high school for one quarter in the university. Thus, a student with credit for three semesters in high school will register for 4, and so forth. After a lapse of two years or more, a student may take with credit the course immediately preceding the one he would normally take on the basis of the credit he has received in high school. Any other exception involving credit must be determined by the executive officer of the department.

In case a foreign language must be taken to satisfy an entrance deficiency of two units, not less than twenty quarter credits, or the equivalent, will be required.

### French

**1-2, 3. Elementary.** (5-5, 5) Pr. for 3 is 2 with a grade not less than "C." Students receiving "D" in 2 should take 3R.

**3R. Elementary Grammar Review.** (5) This refresher course should be taken, instead of 3, by those who have received a grade lower than "C" in French 2. It may also be taken, with credit, by those who have had three or four semesters of French in high school or one year (15 credits) in college, if there has been a lapse of two years or more in their study of the language.

**4, 5, 6. Intermediate.** (3, 3, 3) Modern texts, composition, functional grammar. Pr. for 4 is 3 or 3R, or three semesters in high school, or equivalent.

†To be arranged.

**10, 11. Elementary French Conversation.** (2, 2) Pr., 3 or equivalent; 10 or permission pr. for 11.

**34, 35, 36, and 134, 135, 136. Comparative Literature of France, Italy, and Spain (in English).** (3, 3, 3) The influence of each literature upon the other two, their contribution to human thought; literary background for the further pursuit of a more detailed study in each. May be counted as an elective in 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 Romanic languages. May be entered any quarter. Lectures and reading. No prerequisites. **Goggio**

**37, 38, 39. Lower-Division Scientific French.** (2, 2, 2) 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. 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. **Nostrand**

**107, 108. Themes.** (2, 2) Writing of original compositions. Pr., 102 or equivalent. **Chessex**

**121, 122, 123. French Prose Fiction.** (3, 3, 3) Lectures in French. History of novel and short story with assigned reading from the several types. Pr., 6 or equivalent. **David**

**127, 128, 129. Advanced Conversation.** (2, 2, 2) For majors and others admitted by the instructor. Pr., 101 or equivalent. **Chessex, David**

**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. **Nostrand**

**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**

**191, 192, 193. Supervised Study.** (†) **Staff**

**Teachers' Course in French.** (See Educ. 75K.) **Simpson**

*Courses for Graduates Only*

**221, 222, 223. Old French Reading.** (3, 3, 3) Open to all who have studied French four years. French majors will ordinarily translate into modern French. All who desire may, without prejudice, translate the old French into English. **Frein**

**241, 242, 243. French Historical Grammar.** (3, 3, 3) Lectures in English upon the phonology and morphology of French words. Pr., four years of French. **Frein**

**281, 282, 283. Seminar: Problems and Methods of French Literary History.** (†) **Nostrand**

**291, 292, 293. Conferences for Theses and Special Studies.** (†) **Staff**

Not offered in 1947-1948: 1X-2X, Rapid Reading; 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 Literature; 201, 202, 203, French Renaissance; 213, French Stylistics; 231, 232, 233, History of Old French Literature.

## Italian

**1-2, 3. Elementary.** (5-5, 5) **Goggio**

**34, 35, 36. Comparative Literature.** (3, 3, 3) See French 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.** (†)

*Courses for Graduates Only*

**251, 252, 253. Individual Conference.** (2 to 5 each quarter) Pr., consent of the executive officer.

Not offered in 1947-1948: 111, 112, 113, Modern Italian Literature; 221, 222, 223, Italian Literature of the XIIth to the XVth Centuries; 231, 232, 233, History of Old Italian Literature; 243, Italian Historical Grammar; 291, 292, 293, Theses and Special Studies.

†To be arranged.

### Portuguese

**1-2, 3. Elementary.** (5-5, 5) **Esteves**

**4, 5, 6. Intermediate.** (2, 2, 2) Modern texts, composition, functional grammar. Pr., 3 or permission. **Esteves**

**154, 155, 156. Contemporary Brazilian Literature.** (3, 3, 3) Lectures in Portuguese. Pr., 6 or permission. **Esteves**

**190. Supervised Study.** (†)

### Provencal

**234. Old Provencal.** (3) **Simpson**

### Spanish

**1-2, 3. Elementary.** (5-5, 5) Pr. for 3 is 2 with a grade not less than "C." Students receiving "D" in 2 should take 3R.

**3R. Elementary Grammar Review.** (5) This refresher course should be taken, instead of 3, by those who have received a grade lower than "C" in Spanish 2. It may also be taken, with credit, by those who have had three or four semesters of Spanish in high school or one year (15 credits) in college, if there has been a lapse of two years or more in their study of the language.

**4, 5, 6. Intermediate.** (3, 3, 3) Modern texts, composition, functional grammar. Pr. for 4 is Spanish 3 or 3R, or three semesters in high school, or equivalent.

**10, 11. Elementary Spanish Conversation.** (2, 2) Pr. 3 or 3R or equivalent; 10 or permission pr. for 11. **W. Wilson, Rojas**

**34, 35, 36. Comparative Literature.** (3, 3, 3) See French 34, 35, 36. **Goggio**

**101, 102, 103. Advanced Composition and Conversation.** (3, 3, 3) Pr., 6 or equivalent. **Garcia-Prada, W. Wilson**

**104, 105, 106. Survey of Spanish Literature.** (3, 3, 3) From early times to the present. Pr., 6 or equivalent. **Garcia-Prada**

**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. **Garcia-Prada**

**121, 122, 123. Spanish Prose Fiction.** (3, 3, 3) The historical development of prose fiction in Spain from the sixteenth century to the present. Selected texts, collateral reading and reports. Pr., 6 or equivalent. **Umphrey**

**127, 128, 129. Advanced Conversation.** (2, 2, 2) Pr., 102 or permission. **Garcia-Prada, Rojas**

**131. Lyric Poetry.** (3) Conducted in Spanish. Spanish and Spanish-American poets since the sixteenth century. Pr., 6 or equivalent. **Garcia-Prada**

**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. **Umphrey**

**171, 172, 173. Seventeenth-century Literature.** (2, 2, 2) Course conducted in Spanish. One of the three greatest authors of this period (Lope de Vega, Cervantes, Calderon) will be studied each quarter. Pr., 6 or equivalent. **W. Wilson**

**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., 6 or equivalent. **Umphrey**

**191, 192, 193. Supervised Study.** (†) **Staff**

**Teachers' Course in Spanish.** (See Education 75Y.) **Simpson**

#### *Courses for Graduates Only*

**201. The Spanish Renaissance.** (5) Transition from medieval to modern Spain in the fifteenth and sixteenth centuries. **Umphrey**

**221. Old Spanish Literature.** (5) Study of the origins and early development of various types of literature. **Umphrey**

**241. Spanish Historical Grammar.** (5) **Umphrey**

**291, 292, 293. Conferences for Theses and Special Studies.** (†) **Staff**

Not offered in 1947-1948: 118, 119, 120, Survey of Spanish Culture; 141, 142, 143, Spanish Drama; 151, 152, 153, Spanish Literature since 1700; 184, 185, 186, 187, Spanish-American Literature; 231, Epic Poetry; 252, 253, Graduate Spanish Studies.

## SCANDINAVIAN LANGUAGES AND LITERATURE

*Professor Vickner; Assistant Professor Arestad; Acting Instructor Thomle*

**1-2, 3. Elementary Swedish.** (3-3, 3) May be taken with 4-5, 6, making five-credit courses; 1, 2, 3 are hyphenated if 4-5 are not taken. **Vickner**

**4-5, 6. Swedish Reading Course for Beginners.** (2-2, 2) Supplementary to courses 1-2, 3, but may also be taken separately. No previous knowledge of Swedish necessary. **Arestad**

**10-11, 12. Elementary Norwegian or Danish.** (3-3, 3) May be taken with 13-14, 15, making five-credit courses; 10, 11, 12 are hyphenated if 13-14 are not taken. **Thomle**

†To be arranged.

**13-14, 15. Norwegian or Danish Reading Course for Beginners.** (2-2, 2) Supplementary to 10-11, 12, but may also be taken separately. No previous knowledge of Norwegian or Danish necessary. Thomle

**20, 21, 22. Norwegian or Danish Literature.** (2, 2, 2) Pr., ability to read easy Norwegian or Danish. Arestad

**23, 24, 25. Swedish Literature.** (2, 2, 2) Pr., ability to read easy Swedish. Vickner

**103, 104, 105. Recent Swedish Writers.** (2 or 3 each quarter; 4 by perm.) Pr., fair reading knowledge of Swedish. Vickner, Arestad

**106, 107, 108. Recent Norwegian or Danish Writers.** (2 or 3 each quarter; 4 by perm.) Pr., fair reading knowledge of Norwegian or Danish. Vickner, Arestad

Courses in English

**98. Early Scandinavian Literature in English Translation.** (1) Upper-division credit to upper-division students. Vickner

**99. Outline of Modern Scandinavian Culture.** (1) Upper-division credit to upper-division students. Arestad

**109, 110, 111. Modern Scandinavian Authors in English Translation.** (1 ea. qtr.) Arestad

**180, 181, 182. Recent Scandinavian Literature in English Translation.** (2 ea. qtr.) Vickner

Comparative Philology

**190-191. Introduction to the Science of Language with Special Reference to English.** (2-2) Pr., some knowledge of one of the classical languages or of one modern foreign language. Vickner

**192. Life of Words.** (2) Etymology and semasiology; growth of vocabulary; word values. Pr., same as for 190-191. Vickner

*Courses for Graduates Only*

**205-206. Scandinavian Literature in the Nineteenth Century.** (2 to 4 each quarter) Vickner

Not offered in 1947-1948: 201-202, Old Icelandic; 208, Scandinavian Lyric Poetry.

## SOCIAL WORK, GRADUATE SCHOOL OF

*Professor Ferguson; Assistant Professors Jonquet, McCullough; Lecturers Hoedemaker,* Hollenbeck, Kaufman, Murphy, Orr; Field Work Supervisors Bennie, Macdonald, Reiss, Saibel*

Permission of School of Social Work Required Before Registration

*Preprofessional Undergraduate Courses*

**190. Objectives of Social Work.** (3) Pr., permission.

**192. Field of Social Work.** (3) Pr., permission.

**193. Introduction to Public Welfare.** (3) Pr., permission.

**195. Problems of Child Welfare.** (3) Pr., permission.

**196, 197, 198. Practicum in Social Work.** (3, 3, 3) Pr., permission.

*Professional Graduate Curriculum*

First Year

**200, 201, 202. Social Case Work.** (3, 3, 3) Basic principles and methods of the case-work process developed through discussion of case material. Professional students only. Jonquet

**203, 204, 205. Growth and Development of the Individual.** (4, 2, 2) Medical and psychiatric information and knowledge of behavior as basic to social case work. Pr., 200. Ferguson, Orr, Kaufman, and Lecturers

**206. Introduction to Public Welfare.** (3) Development of public responsibility for dependent, handicapped delinquents in England and the United States. Pr., permission. McCullough

**207. Statistics in Social Work.** (3) Administrative studies in public social services; introduction to the statistical method. Pr., permission. McCullough

**208. The Child and the State.** (3) Development of the responsibility of the state for the care of children and of services for their care and protection. Pr., 200. Murphy

**209. Social Group Work.** (3) The place of group experience in socialization of individuals. Pr., permission. Hollenbeck

**210. Administration of Social Insurances.** (3) The interrelationship of insurances and public assistance programs, including health insurance. Pr., 206. McCullough

**212. Social Welfare Organizations.** (3) Pr., permission.

**214. Community Organization for Social Welfare.** (3) Pr., permission.

**215, 216, 217, 218. Field Work: Family Social Case Work.** (4, 4, 4, 4) Pr., permission. Jonquet, Staff

*On leave.

**Second Year**

**220. Family Case Work.** (3) Pr., 202. — Jonquet

**222, 223, 224. Seminar: Family Social Work.** (2 or 3 ea. qtr.) Pr., permission. — Jonquet

**226, 227, 228, 229. Field Work: Family Social Work.** (4, 4, 4, 4) — Jonquet, Staff

**232. Social Case Work with Children.** (3) Pr., 203.

**234, 235, 236. Seminar: Social Work with Children.** (2 or 3 ea. qtr.)

**238, 239, 240, 241. Field Work: Social Work with Children.** (4, 4, 4, 4) — Staff

**244. Medical Social Case Work.** (3) Case work in the medical setting. Pr., 202, 205. — Ferguson

**246, 247, 248. Seminar: Medical Social Work.** (2 or 3 ea. qtr.) Pr., 244. — Ferguson

**250, 251, 252, 253. Field Work: Medical Social Work.** (4, 4, 4, 4) Pr., 244. — Ferguson, Staff

**258. Psychiatric Social Case Work.** (2 or 3) Pr., 202, 205.

**260, 261, 262. Seminar: Psychiatric Social Work.** (2 or 3 ea. qtr.) Pr., 258.

**264, 265, 266, 267. Field Work: Psychiatric Social Work.** (4, 4, 4, 4) Pr., 258. — Kaufman, Staff

**270. Public Welfare Administration.** (3) Pr., 206. — McCullough

**272, 273, 274. Seminar: Public Welfare Administration.** (2 or 3 ea. qtr.) 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.

**282, 283, 284. Seminar: Community Organization for Social Welfare.** (2 or 3 ea. qtr.) Pr., 280.

**286, 287, 288, 289. Field Work: Community Organization for Social Welfare.** (4, 4, 4, 4)

**300. Social Work Research.** (3) Pr., 207 or equivalent. — McCullough

**305. Administration of Social Agencies.** (3) Pr., permission. — Staff

**308. Seminar: Supervision.** (2-3) Pr., permission. — Jonquet, Staff

**310, 311, 312, 313. Field Work: Supervision.** (4, 4, 4, 4) Pr., 308 — Jonquet, Staff

**320, 321, 322, 323. Readings in Social Work.** (2 or 3 ea. qtr.) Pr., permission. — Staff

**326, 327, 328, 329. Thesis Research.** (†) Pr., 300. — Staff

**334. Seminar: History of Social Work.** (2 or 3) Pr., permission. — Staff

**340. Seminar: Social Work as a Profession.** (2 or 3) Pr., permission. — Ferguson

## SOCIOLOGY

*Professors Lundberg, Hayner, Schmid, Steiner, Woolston; Assistant Professors Bowerman, Cohen, Inglis, Miyamoto, O'Brien; Acting Instructors Bassett, Jahn, Parks, Schrag*

**1. Survey of Sociology.** (5) Basic principles for understanding social relationships. (Juniors and seniors are advised to take 100 rather than 1.) — O'Brien and Staff

**27. Survey of Contemporary Social Problems.** (5) Suicide, crime, population, unemployment, mental deficiency, mental diseases, family disorganization, etc. Pr., 1. — Schmid

**31. Social Statistics.** (5) Methods and sources for quantitative investigation as applied to sociology and related fields. Pr., 1. — Miyamoto, Cohen

**55. Human Ecology.** (5) Factors and forces which determine the distribution of people and institutions. Pr., 1. — Schmid

**60. Collective Behavior.** (5) Social norms in interactional situations. Pr., 1, Psych. 1. — Inglis

**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.) — Bowerman

**112. The Family.** (5) The changing home; family and marriage customs, family interaction and organization; domestic discord. Pr., 1. — Hayner, Bowerman

**114. Social Factors in Marriage.** (3) Marital problems and their adjustment. Pr., 1, 112. — Bowerman

**116. American Housing Problems.** (3) Pr., 1. — Cohen

**120. Criminology.** (5) Individual and social factors in delinquency; history and methods of criminal justice. Field trips to local penal institutions. Pr., 1. — Hayner, Cohen

**121. Penology.** (3) 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., 1, and 120 or approved equivalent. — Hayner

**131. Advanced Social Statistics.** (5) The application of statistical methods to the analysis of sociological data. Pr., 31. — Jahn

†To be arranged.

**132. Methods of Social Research.** (5) Investigation of communities, institutions, and social conditions. Field and laboratory work. Pr., 31 or approved equivalent. Schmid

**135. Graphic Methods in Sociology.** (3) Theory and practice of constructing maps and graphs used in sociological research and exhibits. Schmid

**138. Advanced Social Statistics.** (5) Pr., 131. Jahn

**142. Race Relations.** (3) Study of interracial contacts and conflicts. Pr., 10 credits in social science. Steiner, O'Brien

**143. American Negro Community.** (3) Internal structure, class and caste patterns; resultant personality and institutional development. Pr., 1. O'Brien

**144. Rural Community.** (5) Social and economic problems. Pr., 1. Steiner

**145. Urban Community.** (5) Pr., 1. Steiner

**148. Japanese Social Institutions.** (3) A study in social change using Japanese data. Pr., 1. Steiner

**149. Latin-American Social Institutions.** (3) Social gradients and changing institutional patterns in representative Latin-American communities. Pr., 1. Hayner

**150. Population Problems.** (3) Major quantitative and qualitative problems of population in our contemporary society. Pr., 1. Bowerman

**151. Human Migration.** (5) Determining factors and problems arising therefrom. Pr., 5 credits in sociology or economics. Steiner

**155. Human Ecology.** (5) Factors and forces which determine the distribution of people and institutions. Pr., 1. Schmid

**160. Social Action.** (3) Structure and function of human groups—crowds, publics, parties, etc. Pr., 60 or approved equivalent. Woolston

**161. Social Attitudes.** (3) How persons develop and manifest dispositions to act in certain ways toward their fellows—prejudice, favoritism, etc. Pr., 60 or approved equivalent. Woolston

**162. Public Opinion.** (3) Character and operation of beliefs formed by discussion, propaganda, criticism, education. Pr., 60 or approved equivalent. Woolston

**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

**171. Social Control.** (5) Analysis of the technique and process by which changes in individual and collective actions are effected. Pr., 1. Miyamoto

**172. Social Change.** (3) Analysis of factors involved. Pr., 15 credits in social science.

**173. Social Stratification.** (3) Analysis of societal divisions; class, race, caste. Pr., 15 credits in social science.

**178. Sociological Theory.** (5) Modern scientific theory applied to social behavior. Sociology as a natural science. Pr., 20 credits in social science. Lundberg

### *Courses for Graduates Only*

**210, 211. Marriage and Family.** (3, 3) Analysis of courtship, marriage, and family interaction. Bowerman

**220. Correctional Institutions.** (3) Prisons and juvenile reformatories as communities. Pr., 156 or approved equivalent. Hayner

**221. Probation and Parole.** (3) Sociological contributions to the treatment of juvenile and adult probationers and parolees. Pr., 156 or approved equivalent. Hayner

**222. Basic Crime Prevention.** (3) Critical consideration of programs for delinquency prevention. Pr., 156 or approved equivalent. Hayner

**232, 233. Seminar in Methods of Sociological Research.** (3, 3) Pr., 31, 132, and 178, or approved equivalents. Lundberg

**242. World Survey of Race Relations.** (3) Pr., 25 credits in social science. Steiner

**250. Demography.** (3) Population and vital statistics. Pr., 150 and 15 credits in social science. Schmid

**251. World Migration.** (2) Population movements in Eastern Asia with special emphasis upon Oriental migration to North and South America. Pr., 25 credits in social science. Steiner

**255. Advanced Human Ecology.** (2) Pr., 155 and 15 credits in social science. Steiner

**260, 261, 262. Social Criticism.** (3 ea. qtr.) Examination of conservative, liberal, and radical programs of social action. Pr., 25 credits in social science. Woolston

**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. Open only to qualified graduate students by consent of instructor. Staff

Not offered in 1947-1948: 147, Chinese Social Institutions and Social Change; 174, Contemporary Social Theory; 200, Seminar; 235, Methodology: Quantitative Techniques in Sociology; 236, Methodology: Case Studies and Interviews.

## SPEECH

*Professors Orr, Rahskopf; Associate Professors Bird, Carrell, Franzke; Assistant Professors Baisler, Pence; Acting Assistant Professor Hile; Instructors Enquist, Kniseley, McCrery, Nelson, Wagner; Acting Instructor Murphy; Associate Pitt; Acting Associates Gormley, Hawes, Nilsen, Starr*

A. Speech Clinic. (No credit) For students having speech defects. Sec. A, Articulation Problems; Sec. B, Foreign Dialect; Sec. C, Stuttering; Sec. D, Voice Problems. Carrell in charge

1-2. Basic Speech Improvement. (2-2) Student orientation and adjustment; orderly thinking and listening; distinctness in utterance; effective oral use of language. Orr in charge

38. Essentials of Argumentation. (5) Bibliographies, briefs, and oral arguments. Upper-division credit for upper-division students. Pence

40. Essentials of Speaking. (5) Franzke in charge

41. Advanced Speaking. (5) Problems of organization and delivery. Upper-division credit for upper-division students. Pr., 40. Franzke

43. The Speaking Voice. (5) Removal of voice faults and development of voice modulations. Upper-division credit for upper-division students. Orr in charge

44. Voice and Articulation. (5) Special attention to the sound system of English and to practice on problems of articulation and pronunciation. Upper-division credit for upper-division students. Pr., 43. Rahskopf

50. Elementary Lip Reading. (3) Fundamental principles; sense training for speed and accuracy.

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., 43, 79.

62. Advanced Radio Speech. (3) Analysis of audience situations, group discussions, and audience-participation programs. Upper-division credit for upper-division students. Pr., 61.

79. Oral Interpretation. (4) Techniques of analysis and of reading aloud of printed material, both prose and poetry. Required of students seeking a secondary certificate in English. Upper-division credit for upper-division students. Hile, Orr

101. Varsity Debate. (3) For members of the Varsity debate squad only. No more than 3 credits can be earned in one year and the total cannot exceed 12 credits. Orr, Franzke, Kniseley, Pence

103. Extempore Speaking. (3) For students in engineering and law. Not open to College of Arts and Sciences students nor to students who have credit for 40. Franzke

139. Forms of Public Address. (5) Study of the structure and style of the various forms of public address based on modern speeches. Pr., 40. Rahskopf

140. Discussion Techniques Applied to Current Problems. (3) Franzke

141. The Public Lecture. (3) Pr., 40 or permission. Franzke

150, 151, 152. Undergraduate Research in Speech Correction. (2 to 5 ea. qtr.) Carrell

162. Radio Production Methods. (3) Sound effects, music in broadcasts, microphone placement, studio set-up, timing, cutting of scripts. Pr., 61, 62. Bird

163. Radio Program Building. (3) Adaptation of literary, informational, and persuasive material for radio. Pr., 61, 62. Bird

179. Advanced Oral Interpretation of Literature. (5) Pr., 79 or permission. Orr

186. Backgrounds in Speech. (5) Biological, acoustic, psychological, and social aspects. Speech as a field of study and the correlation of its various phases. Rahskopf

187. Voice Science. (5) Anatomy, physiology, physics, psychology of voice production. Pr., 43 or permission. Carrell

188. Advanced Problems in Speaking. (5) Audience analysis, thought organization, and delivery. Pr., 40. Orr

190. Speech Correction. (5) Nature, etiology, diagnosis of disorders of speech. Carrell

191. Methods of Speech Correction. (5) Carrell

193, 195, 196. Clinical Training in Speech Correction. (2 to 5 ea. qtr.) May be repeated for total not to exceed 15 credits. Pr., 190, 191, permission. Carrell

194. Basic Methods of Teaching Lip Reading. (5) Pr., normal hearing. Enquist

198. Senior Seminar in Speech. (1) Rahskopf

Teachers' Course in Speech. (See Education 75X.)

### *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) Critical analysis of the writings on rhetoric by Cox, Wilson, Bacon, Campbell, Blair, Whately, and contemporary writers. Pr., 209. Pence

**211.** Historical Principles of Public Address. (5) Critical evaluation of the principles of public address based on a study of their development from ancient to modern times. Rahskopf

**212.** Research in Rhetoric and Public Address. (5) Rahskopf

**214.** Research in Voice. (5) Orr

**215.** Research in Theory of Interpretation. (5) Orr

**216.** Research in Speech Pathology. (5) Carrell

**220.** Thesis Research. (†) Staff

Not offered in 1947-1948: 51, Advanced Problems in Lip Reading; 138, Methods in Debate and Public Discussion.

## ZOOLOGY

*Professors Svihla, Hatch, Kincaid; Assistant Professors Ferguson, Whiteley; Instructors Fernald, Ray*

**1, 2.** General Zoology. (5, 5) Survey of the animal kingdom, stressing structure, classification and economic relations. Three lectures, one quiz, four hours laboratory. Staff

**7.** Elementary Human Physiology. (5) Three lectures, one quiz, five hours laboratory. Pr., high school or freshman chemistry.

**8.** Survey of Zoology. (5) Students who expect to continue with zoology should begin with 1, 2. Four lectures, two hours laboratory. Ray

**11.** Survey of Physiology. (5) Five lectures, no laboratory.

**16.** Evolution. (2) Two lectures. Kincaid

**17.** Eugenics. (2) Evolution and heredity as related to human welfare. Two lectures. Kincaid

**101.** Cytology. (5) The animal cell, its structure, activities, and development; sex determination; heredity. Three lectures, three hours laboratory. Pr., 1, 2. Svihla

**105.** General Vertebrate Embryology. (5) Three lectures, six hours laboratory. Pr., 1, 2. Fernald

**106.** Marine Plankton. (5) Three lectures, six hours laboratory. Pr., 1, 2. Kincaid

**107.** Parasitology. (5) Animal parasites. Three lectures, six hours laboratory. Pr., 1, 2. Ferguson

**108.** Limnology. (5) Fresh-water biology. Three lectures, six hours laboratory. Pr., 1, 2. Kincaid

**111.** Entomology. (5) Three lectures, six hours laboratory. Pr., 1, 2. Hatch

**114.** Comparative Physiology. (5) Comparison of the analogous systems in various organisms. Three lectures, one quiz., five hours laboratory. Pr., 2, Chem. 2 or 22. Ray

**115.** Cellular Physiology. (5) Study of fundamental physiological processes. Three lectures, one quiz, five hours laboratory. Pr., 2, Physics 3, Chem. 23. Whiteley

**121.** Microscopic Technique. (3) Making microscopic preparations. One lecture, six hours laboratory. Pr., 1, 2. Ferguson

**122.** Comparative Histology. (5) Morphology and physiology of representative animal tissue. Three lectures, six hours laboratory. Pr., 1, 2, and permission.

**125, 126.** Invertebrate Zoology. (5, 5) Exclusive of insects. Three lectures, six hours laboratory. Pr., 1, 2. Ray

**127-128.** Comparative Anatomy of Chordates. (5-5) Three lectures, six hours laboratory. Pr., 1, 2. Fernald

**129.** Natural History of Amphibia, Reptiles, and Birds. (5) Three lectures, six hours laboratory. Pr., 1, 2. Svihla

**130.** Natural History of Mammals. (5) Three lectures, six hours laboratory. Pr., 1, 2. Svihla

**131.** History of Zoology. (2) Two lectures. Pr., 20 credits in zoology. Hatch

**135.** Museum Technique. (3) Preparation of museum specimens. Six hours laboratory. Pr., permission. Flahaut

**155, 156, 157.** Elementary Problems. (3, 3, 3) Pr., 30 credits in zoology and permission. Staff
Teachers' Course in Zoology. (See Educ. 75Z.)

*Courses for Graduates Only*

**201, 202, 203.** Research. (†) Staff

**210, 211, 212.** Seminar. (1, 1, 1) Staff

†To be arranged.

# SUMMARY OF DEGREES, DIPLOMAS, AND CERTIFICATES GRANTED

## 1945-1946

### Bachelor's Degrees

| | | | |
|---|---|---|---|
| B.A. (College of Arts and Sciences) | 374 | B.S. in Chemistry | 6 |
| B.A. (College of Education) | 31 | B.S. in Civil Engineering | 18 |
| B.A. in Economics and Business | 91 | B.S. in Electrical Engineering | 52 |
| B.A. in Education | 4 | B.S. in Forestry | 12 |
| B.A. in Home Economics | 5 | B.S. in Geology and Mining | 1 |
| B.A. in Librarianship | 26 | B.S. in Home Economics | 29 |
| B.A. in Music | 9 | B.S. in Law | 5 |
| Bachelor of Architecture | 7 | B.S. in Mathematics | 3 |
| Bachelor of Laws | 24 | B.S. in Mechanical Engineering | 42 |
| B.S. (College of Arts and Sciences) | 106 | B.S. in Metallurgical Engineering | 1 |
| B.S. (College of Education) | 2 | B.S. in Mining Engineering | 1 |
| B.S. in Aeronautical Engineering | 15 | B.S. in Nursing | 47 |
| B.S. in Anatomy | 1 | B.S. in Pharmacy | 14 |
| B.S. in Bacteriology | 5 | B.S. in Zoology | 4 |
| B.S. in Basic Medical Science | 2 | | |
| B.S. in Chemical Engineering | 12 | Total | 949 |

### Advanced and Professional Degrees

| | | | |
|---|---|---|---|
| Master of Arts | 35 | Master of Science in Forestry | 1 |
| Master of Arts in Music | 5 | Master of Science in Mechanical Engin'r'g | 1 |
| Master of Business Administration | 1 | Master of Science in Nursing | 1 |
| Master of Education | 3 | Master of Science in Pharmacy | 2 |
| Master of Forestry | 4 | Professional Degree, Electrical Engineer | 1 |
| Master of Science | 13 | Doctor of Philosophy | 14 |
| Master of Science in Ceramic Engineering | 1 | | |
| Master of Science in Chemical Engineering | 4 | Total | 86 |

### Diplomas and Certificates

| | | | |
|---|---|---|---|
| Certificate in Nursing Supervision | 8 | Three-Year Secondary Certificate | 40 |
| Certificate in Public Health Nursing | 21 | | |
| | | Total | 69 |

# SUMMARY OF ENROLLMENT — TOTALS

### EXTENSION STUDENTS

| | | |
|---|---|---|
| Classes | | 2738 |
| Men | 1113 | |
| Women | 1625 | |
| Home Study | | 3257 |
| Men | 2281 | |
| Women | 976 | |
| Total | | 5995 |

### CIVILIAN ENROLLMENT

| | | |
|---|---|---|
| Academic Year (Quarter) | | 895 |
| Academic Year (Semester) | | 12466 |
| Summer Quarter | | 433 |
| Summer Session A | | 1261 |
| Summer Session B | | 1426 |
| Intensive Courses for Veterans | | 876 |
| Refresher Courses | | 218 |
| E.&B. | 129 | |
| Law | 89 | |
| Deduct Summer Duplicates | | 2935 |
| Summer Quarter | 558 | |
| Summer Semester | 2377 | |
| Total (Academic Year and Summer) | | 14640 |

### SERVICE ENROLLMENT

Navy V-12

| | Summer Session B | 1st Sem. | 2nd Sem. |
|---|---|---|---|
| College of Engr. | 374 | 325 | 135 |
| College of E.&B. | 113 | 114 | 51 |
| College of A.&S. | 114 | 148 | 82 |
| College of Mines | 1 | .. | .. |
| Totals | 602 | 587 | 268 |

### TOTAL STUDENTS IN RESIDENCE

| | |
|---|---|
| Navy V-12 | 822 |
| Civilians | 14640 |
| Total | 15462 |

## SUMMARY OF CIVILIAN ENROLLMENT BY SCHOOLS AND COLLEGES, UNIVERSITY OF WASHINGTON, YEAR 1945-1946

| COLLEGE | QUARTER SYSTEM | | | | | SEMESTER SYSTEM | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Summer | Autumn | Winter | Spring | Total Individuals† Quarter System | Summer Session "A" | Summer Session "B" | First Semester | Second Semester | Total Individuals Semester System | Total Individuals Academic Year |
| Arts & Sciences.. | 361 | 387 | 348 | 389 | 640 | 658 | 935 | 5782 | 6854 | 7743 | 8383 |
| Men..... | .. | 1 | .. | .. | 1 | 74 | 329 | 1814 | 3392 | 3389 | 3390 |
| Women..... | 361 | 386 | 348 | 389 | 639** | 584 | 606 | 3968 | 3462 | 4354 | 4993 |
| Econ. & Business. | | | | | | 40 | 135 | 1058 | 1808 | 1805 | 1805 |
| Men..... | | | | | | 14 | 82 | 674 | 1477 | 1374 | 1374 |
| Women..... | | | | | | 26 | 53 | 384 | 331 | 431 | 431 |
| Education..... | | | | | | 220 | 18 | 91 | 114 | 122 | 122 |
| Men..... | | | | | | 102 | 5 | 30 | 49 | 52 | 52 |
| Women..... | | | | | | 118 | 13 | 61 | 65 | 70 | 70 |
| Engineering..... | | | | | | 3 | 148 | 669 | 1138 | 1216 | 1216 |
| Men..... | | | | | | 1 | 142 | 641 | 1121 | 1186 | 1186 |
| Women..... | | | | | | 2 | 6 | 28 | 17 | 30 | 30 |
| Forestry..... | | | | | | | 7 | 98 | 199 | 202 | 202 |
| Men..... | | | | | | | 7 | 95 | 197 | 199 | 199 |
| Women..... | | | | | | | .. | 3 | 2 | 3 | 3 |
| Graduate School.. | 9 | 7 | 8 | 6 | 16* | 333 | 163 | 640 | 989 | 1075 | 1091* |
| Men..... | .. | .. | .. | .. | .. | 116 | 89 | 373 | 675 | 720 | 720 |
| Women..... | 9 | 7 | 8 | 6 | 16 | 217 | 74 | 267 | 314 | 355 | 371 |
| Law..... | 63 | 127 | 211 | 210 | 239 | | | | | | 239 |
| Men..... | 52 | 105 | 192 | 196 | 217 | | | | | | 217 |
| Women..... | 11 | 22 | 19 | 14 | 22 | | | | | | 22 |
| Mines..... | | | | | | | 3 | 42 | 55 | 68 | 68 |
| Men..... | | | | | | | 3 | 42 | 52 | 66 | 66 |
| Women..... | | | | | | | .. | .. | 3 | 2 | 2 |
| Pharmacy..... | | | | | | 7 | 17 | 128 | 170 | 184 | 184 |
| Men..... | | | | | | 2 | 10 | 64 | 116 | 119 | 119 |
| Women..... | | | | | | 5 | 7 | 64 | 54 | 65 | 65 |
| Nursing..... | | | | | | | | | 207 | 51 | 51 |
| Men..... | | | | | | | | | .. | .. | .. |
| Women..... | | | | | | | | | 207** | 51 | 51 |
| TOTALS..... | 433 | 521 | 567 | 605 | 895 | 1261 | 1426 | 8508 | 11534 | 12466 | 13361 |
| Men..... | 52 | 106 | 192 | 196 | 218 | 309 | 667 | 3733 | 7079 | 7105 | 7323 |
| Women..... | 381 | 415 | 375 | 409 | 677 | 952 | 759 | 4775 | 4455 | 5361 | 6038 |

†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.

**207 individuals included in A. & S. Total Individuals Quarter System.

*To this number should be added 126 students who were enrolled as graduate students and are included in the Law School total.

## SUMMARY OF CIVILIAN ENROLLMENT BY CLASSES, UNIVERSITY OF WASHINGTON, YEAR 1945-1946

| CLASSES | QUARTER SYSTEM | | | | | SEMESTER SYSTEM | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Summer | Autumn | Winter | Spring | Total Individuals Quarter System | Summer Session "A" | Summer Session "B" | First Semester | Second Semester | Total Individuals Semester System | Total Individuals Academic Year |
| | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 6 |
| Freshmen | 29 | 20 | 14 | 9 | 32 | 83 | 492 | 3779 | 5054 | 5799 | 5831 |
| Men | .. | .. | .. | .. | .. | 22 | 274 | 1861 | 3465 | 3633 | 3633 |
| Women | 29 | 20 | 14 | 9 | 32 | 61 | 218 | 1918 | 1589 | 2166 | 2198 |
| Sophomores | 46 | 33 | 29 | 9 | 40 | 126 | 330 | 1887 | 2471 | 2564 | 2604 |
| Men | .. | .. | .. | .. | .. | 17 | 123 | 638 | 1350 | 1216 | 1216 |
| Women | 46 | 33 | 29 | 9 | 40 | 109 | 207 | 1249 | 1121 | 1348 | 1388 |
| Juniors | 117 | 171 | 178 | 136 | 204 | 138 | 206 | 1221 | 1776 | 1716 | 1920 |
| Men | 8 | 39 | 68 | 57 | 69 | 15 | 75 | 432 | 943 | 835 | 904 |
| Women | 109 | 132 | 110 | 79 | 135 | 123 | 131 | 789 | 833 | 881 | 1016 |
| Seniors | 97 | 102 | 109 | 105 | 118 | 158 | 193 | 784 | 1159 | 1059 | 1177 |
| Men | 15 | 12 | 18 | 32 | 26 | 22 | 83 | 280 | 581 | 506 | 532 |
| Women | 82 | 90 | 91 | 73 | 92 | 136 | 110 | 504 | 578 | 553 | 645 |
| Graduates | 42 | 67 | 119 | 117 | 142 | 333 | 163 | 640 | 989 | 1075 | 1217 |
| Men | 28 | 50 | 102 | 104 | 116 | 116 | 89 | 373 | 675 | 720 | 836 |
| Women | 14 | 17 | 17 | 13 | 26 | 217 | 74 | 267 | 314 | 355 | 381 |
| Specials | 101 | 128 | 118 | 229 | 359 | 15 | 31 | 197 | 85 | 253 | 612 |
| Men | 1 | 5 | 4 | 3 | 7 | .. | 20 | 149 | 65 | 195 | 202 |
| Women | 100 | 123 | 114 | 226 | 352 | 15 | 11 | 48 | 20 | 58 | 410 |
| Transients | 1 | | | | | 408 | 11 | | | | |
| Men | .. | | | | | 117 | 3 | | | | |
| Women | 1 | | | | | 291 | 8 | | | | |
| TOTALS | 433 | 521 | 567 | 605 | 895 | 1261 | 1426 | 8508 | 11534 | 12466 | 13361 |
| Men | 52 | 106 | 192 | 196 | 218 | 309 | 667 | 3733 | 7079 | 7105 | 7323 |
| Women | 381 | 415 | 375 | 409 | 677 | 952 | 759 | 4775 | 4455 | 5361 | 6038 |

NOTE: The number of individuals in Column 5 (Quarter) is 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.

NOTE: The total of individuals in Column 5 (Semester) is based upon the classification of the First Semester, to which is added the number of new students entering the same classification for the first time for the Second Semester. In this column, students who have changed their classification during the year are counted as of their first classification.

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