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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.—East 65th St., Ravenna, and Montlake trolley coach lines run one block west of the campus; Laurelhurst and Sand Point motor coach lines pass the campus on the north; University-Ballard coaches come to East Forty-fifth Street and University Way. The offices of administration are located in the Administration Building.

BULLETIN UNIVERSITY OF WASHINGTON

CATALOGUE ISSUE
1950-1951

GENERAL SERIES

JUNE, 1950

No. 842

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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.

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The attention of all students is called to the following regulation (see paragraph 1, "Degrees—Additional Regulations," page 102 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.

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UNIVERSITY OF WASHINGTON CALENDAR — 1950-1951

SUMMER QUARTER, 1950

General registration in person (by appointment only).....May 29 to June 3, 12 m.
June 12 to June 17, 12 m.

All fees must be paid at time of registration

Instruction begins:
University courses.....Monday, June 19, 8 a.m.
Nursing: Hospital Division and Public Health Field Work only.....Monday, June 12, 8 a.m.
Independence Day (Holiday).....Tuesday, July 4
First term ends.....Wednesday, July 19, 6 p.m.
Second term begins.....Thursday, July 20, 8 a.m.
Last day to add a University course:
First term.....Tuesday, June 20, 4:30 p.m.
Full quarter.....Saturday, June 24, 12 m.
Second term.....Friday, July 21, 4:30 p.m.
Instruction ends:
University courses.....Friday, August 18, 6 p.m.
Nursing: Public Health Field Work.....Friday, August 25, 6 p.m.
Hospital Division.....Sunday, September 3, 6 p.m.
Dental School.....Friday, September 1, 6 p.m.

AUTUMN QUARTER, 1950

Registration dates:

For students in residence, Spring 1950.....September 5 to September 26, 4:30 p.m.
Appointments may be obtained at Registrar's Office upon presentation of ASUW card not later than September 15, 4:30 p.m.
For former students not in residence, Spring 1950....September 8 to September 26, 4:30 p.m.
Appointments may be obtained by writing or calling the Registrar's Office not later than September 15, 4:30 p.m.
For new students.....September 11 to September 26, 4:30 p.m.
Appointments will be mailed with the Notification of Admission blank.

All fees must be paid at time of registration

Last day for new students to submit applications for admission to undergraduate or graduate standing in the Autumn Quarter, with complete credentials.....Friday, September 1, 4:30 p.m.
Last day for former students to apply for registration appointments for Autumn Quarter.....Friday, September 15, 4:30 p.m.
Last registration day before beginning of instruction.....Tuesday, September 26
Instruction begins.....Wednesday, September 27, 8 a.m.
The President's Convocation.....Thursday, September 28, 10:50 a.m.
Last day to add a course.....Tuesday, October 3, 4:30 p.m.
Armistice and Admission Day (Holiday).....Saturday, November 11
Thanksgiving recess begins.....Wednesday, November 22, 6 p.m.
Thanksgiving recess ends.....Monday, November 27, 8 a.m.
Instruction ends.....Friday, December 15, 6 p.m.

WINTER QUARTER, 1951

Registration dates:

For students in residence, Autumn Quarter, 1950.....November 13 to December 6, 4:30 p.m.
Appointments will be issued, by classes only, on presentation of ASUW card, beginning October 20, 8 a.m.
For former students not in residence, Autumn Quarter, 1950.....December 26 to December 29, 4:30 p.m.
Appointments may be obtained by writing or calling the Registrar's Office beginning October 11.
For new students.....December 26 to December 29, 4:30 p.m.
Appointments will be mailed with the Notification of Admission blank.

All fees must be paid at time of registration

Last registration day before beginning of instruction.....Friday, December 29, 4:30 p.m.
Instructions begins.....Tuesday, January 2, 8 a.m.
Last day to add a course.....Monday, January 8, 4:30 p.m.
Washington's Birthday (Founders' Day and Legal Holiday).....Thursday, February 22
Instruction ends.....Friday, March 16, 6 p.m.

SPRING QUARTER, 1951

Registration dates:

- For students in residence, Winter Quarter, 1951..... February 14 to March 7, 4:30 p.m.
Appointments will be issued, by classes only, on presentation of ASUW card, beginning January 19, 8 a.m.
- For former students not in residence, Winter Quarter, 1951..... March 20 to March 24, 12 m.
Appointments may be obtained by writing or calling the Registrar's Office beginning January 12.
- For new students..... March 20 to March 24, 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 24, 12 m.
Instruction begins.....	Monday, March 26, 8 a.m.
Last day to add a course.....	Saturday, March 31, 12 m.
Honors Convocation.....	Wednesday, May 23, 10 a.m.
Memorial Day (Holiday).....	Wednesday, May 30
Governor's Day.....	Thursday, May 31
Baccalaureate Sunday.....	Sunday, June 3
Instruction ends.....	Friday, June 8, 6 p.m.
Commencement.....	Saturday, June 9

SCHEDULE OF UNIVERSITY SENATE AND EXECUTIVE COMMITTEE MEETINGS FOR THE YEAR 1950-1951

Autumn 1950

Executive Committee.....	Monday, September 18
Senate (Election of Executive Committee for 1950-51).....	Friday, September 29
Executive Committee.....	Monday, October 9
Senate.....	Thursday, October 19
Executive Committee.....	Monday, November 20
Senate.....	Thursday, November 30

Winter 1951

Executive Committee.....	Monday, January 8
Senate.....	Thursday, January 18
Executive Committee.....	Monday, February 19
Senate.....	Thursday, March 1

Spring 1951

Executive Committee.....	Monday, April 2
Senate.....	Thursday, April 12
Senate Elections Begin.....	Monday, April 16
Executive Committee.....	Monday, May 14
Senate.....	Thursday, May 24

BOARD OF REGENTS

1950-1951

DAVE BECK, President.....	Seattle
Term ends March, 1952	
GEORGE R. STUNTZ, Vice-President.....	Seattle
Term ends March, 1951	
THOMAS BALMER	Seattle
Term ends March, 1953	
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Term ends March, 1952	
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Term ends March, 1953	
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Term ends March, 1956	
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UNIVERSITY LANDS.....	Armstrong, Balmer, Miller
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UNIVERSITY WELFARE.....	King, Armstrong, Corbett
STUDENT ACTIVITIES.....	Stuntz, Armstrong, King
METROPOLITAN BUILDING LEASE.....	Balmer, Stuntz, Armstrong

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VICE-PRESIDENT.....	Jack Westland, LL.B., 1926
VICE-PRESIDENT.....	Lucille Thompson, 1933
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NEAL O. HINES, A.B., M.S.J.....	Publications Adviser

Office of Student Affairs

EDWARD HENRY LAUER, Ph.D.....	Dean of Students
LEONA SAUNDERS, B.A.....	Associate Director, Office of Student Affairs
JAMES M. DAVIS, B.S., B.D., M.A., Ed.D.....	Adviser to Foreign Students
PATRICIA McCLURE, B.S.....	Senior Counselor and Manager, Women's Residence Halls
WANDA BROADIE, B.A., M.A.....	Associate Counselor
BLANCHE CLINE, B.S., Ed.M.....	Associate Counselor
GLEN T. NYGREEN, B.S.....	Assistant Director, Office of Student Affairs

ASUW Administrative Officers

C. HARVEY CASSILL.....	Director of Intercollegiate Activities
CHARLES B. OWENS.....	Director of ASUW Activities
WENDELL H. BROYLES, B.A.....	Manager of Athletics
CLYDE ROBINSON.....	ASUW Publications
EUGENE PIERCE, B.A.....	Assistant in ASUW Activities, in Charge of Financial Control and Accounting
BERT E. ROSE, JR., B.A.....	Manager, Athletic News Service
IVAN TRAVIS, A.B., M.A.....	Athletic Business Manager

U. S. Air Force Reserve Officers Training Corps

DOUGLAS W. SPAWN, B.S.....	Major, Air Force
RICHARD B. JAMES.....	Major, Air Force
DANFORTH P. MILLER, B.S.....	Major, Air Force
RALEIGH D. SMITH.....	Major, Air Force
FREEMAN B. WADELL.....	Captain, Air Force
WILLIAM L. RAY.....	First Lieutenant, Air Force
DAVID H. WATTS, B.S.....	Warrant Officer, Air Force

U. S. Army Reserve Officers Training Corps

MARSHALL N. JENSEN, B.S., M.D.	Colonel, Medical Corps
FREDERIC W. C. LEDEBOER, B.S.	Lt. Col., Coast Artillery Corps
ROBERT L. SNYDER, B.A.	Lt. Col., Quartermaster Corps
BERT H. BACKSTROM	Major, Coast Artillery Corps
ANDREW P. FLANAGAN, B.S.	Major, Transportation Corps
JOHN W. MURRAY, B.S.	Major, Transportation Corps
EDWARD R. WAHL, B.A.	Major, Quartermaster Corps
WILLIAM J. WOLCOTT, B.A.	Major, Infantry
DAVID B. ALEXANDER, B.S.	Captain, Coast Artillery Corps
BILLIE M. BARBEE, B.A.	Captain, Infantry
HAMLET R. CARTER, JR., B.S.	Captain, Artillery
FRANK W. CONNER, JR., B.A.	Captain, Infantry
CHARLES H. FORE, B.A.	Captain, Infantry
BENJAMIN E. JOHNSON, JR., B.B.A.	Captain, Transportation
FRANK W. RHEA, B.S.	Captain, Corps of Engineers

U. S. Naval Reserve Officers Training Corps

CAMPBELL D. EMORY, B.S.	Captain, U. S. Navy
ALEXANDER K. TYREE, B.S.	Commander, U. S. Navy
LOUIS G. DITTA, B.A.	Major, U. S. M. C.
FRANCIS A. BUTLER, B.S.	Lieutenant, U. S. Navy
HARVEY E. MINNICK, B.A.	Lieutenant, U. S. Navy
ARTHUR H. JERBERT, B.S.	Lieutenant, U. S. Navy
GUNTER GEISMANN, B.A.	Lieutenant (SC), U. S. Navy
BURTON WRIGHT, B.S., M.S.	Lieutenant, (jg), U. S. N. R.

University Health Service

LELAND E. POWERS, M.D.	Director
CHARLES LESTER, M.D.	Assistant Director
CHARLES BENDER, M.D.	Clinic Physician
ERNEST EVANS, M.D.	Clinic Physician
WILLIAM R. GARR, M.D.	Clinic Physician
DAVID C. HALL, M.D.	Clinic Physician
ELIZABETH GUNN, M.D.	Clinic Physician
DONALD T. HALL, M.D.	Clinic Physician
JOHN FREELAND HARRAH, M.D.	Clinic Physician
JOHN STERNER, M.D.	Clinic Physician
S. H. KAUFMAN, M.D.	Psychiatrist
M. C. SHURTLEFF, M.D.	E.E.N.T. Specialist
ARTHUR BOBROFF, M.D.	Dermatologist
MILDRED MUMBY, M.D.	Dermatologist
MARGIT GRYTBAK, M.D.	Director, Child Health Clinic

VARIOUS EDUCATIONAL, RESEARCH, AND SERVICE DIVISIONS

Applied Fisheries Laboratory

LAUREN R. DONALDSON, Ph.D.	Director
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Audio-Visual Studios

FRANCIS F. POWERS, Ph.D.	Director, Audio-Visual Activities
PHILIP A. JACOBSEN, B.S.	Technical and Research Director
EDWIN H. ADAMS, M.A.	Director, University Radio Programs

Division of Counseling and Testing

Counseling Center

REED MERRILL, B.A., M.A.	Director
LOUISE B. HEATHERS, B.A., Ph.D.	Senior Clinical Psychologist
ARTHUR ABRAHAMSON, B.A., M.A.	Senior Psychiatric Social Worker
RUTH LYON BLACKMAN, B.S., M.S.	Junior Psychiatric Social Worker

Bureau of Testing

EDMUND E. DUDEK, A.B., M.A., Ph.D.....Director
THOMAS G. HERMANS, B.S., M.A.....Chief Examiner

Bureau of Admissions Research

AUGUST DVORAK, B.A., Ph.D.....Director

Placement Office for Students and Graduates

NORMAN HILLIS, B.S.....Director
HARVEY L. LONG, B.A.....Assistant Director

Engineering Experiment Station

F. BURT FARQUHARSON, B.S., M.E.....Director
WARREN W. PHILBRICK, B.S. in M.E., M.B.A.....Assistant Director

Henry Art Gallery

WALTER F. ISAACS, B.F.S.....Director
MELVIN KOHLER, M.A.....Curator

The Northwest Experiment Station, United States Bureau of Mines

HARRY F. YANCEY, Ph.D.....Supervising Engineer
KENNETH A. JOHNSON, B.S.....Chemist
A. D. CENTENERO, B.S.....Analytical Chemist
M. R. GEER, M.S.....Mining Engineer
HAL J. KELLY, B.S.....Metallurgical Engineer
CLARENCE L. BOYD, B.S.....Chemist
R. JOHN HILTON, B.S.....Chemical Engineer
J. J. BRUGMAN, B.S.....Metallurgical Engineer
W. A. OLDS, B.S.....Chemical Engineer
C. L. ALLYN, B.S.....Chemical Engineer
R. J. CAMPBELL, JR., B.S.....Chemical Engineer

Nursery School

ELEANOR EVANS, B.S., M.E.....Acting Director

Oceanographic Laboratory

THOMAS G. THOMPSON, Ph.D.....Director

Physics Laboratory

CLINTON L. UTTERBACK, Ph.D.....Director

Washington State Museum

ERNA GUNTHER, Ph.D.....Director
HARRY W. HIGMAN, B.S.....Honorary Curator of Birds
MARTHA REEKIE FLAHAUT, B.S., B.S. in L.S.....Curator of Biology
CATHERINE B. PARIS, B.A.....Curator of Education
DOUGLAS OSBORNE, B.A.....Curator of Anthropology

Washington Public Opinion Laboratory

STUART C. DODD, Ph.D.....Codirector, University of Washington
J. E. BACHELDER, Ph.D.....Codirector, Washington State College

BUREAUS AND DEPARTMENTAL INSTITUTES

Bureau of Business Research

NATHANAEL H. ENGLE, Ph.D. Director
 CHARLES J. MILLER, M.B.A. Editor, *Pacific Northwest Industry*

Bureau of Governmental Research and Services

DONALD H. WEBSTER, LL.B., Ph.D. Director
 ERNEST H. CAMPBELL, LL.B., Ph.D. Assistant Director
 JOSHUA H. VOGEL, M. Arch. Planning and Public Works Consultant
 DONALD C. SAMPSON, B.A. Municipal Research Consultant
 GEORGE D. SMITH. Research Associate

Teacher Service and Placement

EDWARD BECHTHOLT, M.A. Director

Institute of International Affairs

LINDEN A. MANDER, M.A. Codirector
 CHARLES E. MARTIN, Ph.D., LL.D. Codirector

Institute of Public Affairs

KENNETH C. COLE, LL.B., Ph.D. Codirector
 GEORGE A. SHIPMAN, Ph.D. Codirector

SENATE MEMBERS 1949-50

- I. LETTERS. *Terms expiring 1952:* Harry Bauer, *Librarianship*; Edward Bostetter, *English*; Porter Perrin, *English*; William Read, *Class. Langs.*; George Savage, *English. Terms expiring 1951:* Robert Heilman, *English*; Howard Nostrand, *Rom. Langs.*; Brents Stirling, *English*; Curtis Vail, *Ger. Langs.*; Frank Williston, *Far East. Terms expiring 1950:* Edwin H. Adams, *Radio Educ.*; Sverre Arestad, *Scand. Langs.*; E. Harold Eby, *English*; George Taylor, *Far East.*; Lawrence Zillman, *English*.
- II. ARTS. *Terms expiring 1952:* Stanley Chapple, *Music*; B. Pauline Johnson, *Art*; *Terms expiring 1951:* Ruth Penington, *Art*; Edith Woodcock, *Music. Terms expiring 1950:* Kathleen Munro, *Music*; Walter Isaacs, *Art*.
- III. SCIENCES. *Terms expiring 1952:* Ross Beaumont, *Math.*; William Birnbaum, *Math.*; Arthur W. Martin, *Zoology. Terms expiring 1951:* Phil E. Church, *Meteor.*; C. Leo Hitchcock, *Botany*; Rex Robinson, *Chemistry. Terms expiring 1950:* George H. Cady, *Chemistry*; Edwin H. Uehling, *Physics*; Roy M. Winger, *Math*.
- IV. TECHNOLOGY. *Terms expiring 1952:* Thomas H. Campbell, *Civ. Engr.*; Capt. C. D. Emory, *Naval Sci.*; Ernest D. Engel, *Gen. Engr. Terms expiring 1951:* Alfred Miller, *Civ. Engr.*; Ralph Moulton, *Chem. Engr.*; Drury Pifer, *Mineral Engr. Terms expiring 1950:* Lauren Donaldson, *Fisheries*; George L. Hoard, *Elec. Engr.*; Gilbert Schaller, *Mech. Engr.*
- V. SOCIAL STUDIES. *Terms expiring 1952:* John R. Huber, *Economics*; Max Savelle, *History. Terms expiring 1951:* William S. Hopkins, *Economics*; Roger Loucks, *Psychology. Terms expiring 1950:* Solomon Katz, *History*; Everett Nelson, *Philosophy*.
- VI. APPLIED SOCIAL STUDIES. *Terms expiring 1952:* Arthur M. Cannon, *Bus. Adm.*; John Corbally, *Education*; William E. Cox, *Bus. Adm.*; Kathro Kidwell, *Phys. Ed.—Women. Terms expiring 1951:* Roland Belshaw, *Phys. Ed.—Men*; Stephen D. Brown, *Bus. Adm.*; Donald H. Mackenzie, *Bus. Admin.*; Curtis Williams, *Education. Terms expiring 1950:* Joseph Demmery, *Bus. Adm.*; Nathanael Engle, *Bus. Adm.*; Margaret Terrell, *Home Ec.*; Ruth Wilson, *Phys. Ed.—Women*.
- VII. HEALTH SCIENCES. *Terms expiring 1952:* H. Stanley Bennett, *Anatomy*; B. O. A. Thomas, *Dentistry*; Robert H. Williams, *Medicine. Terms expiring 1951:* Loren D. Carlson, *Physiology*; Charles A. Evans, *Microbiology*; Alton W. Moore, *Dentistry. Terms expiring 1950:* James M. Dille, *Pharmacol.*; Erling Ordal, *Microbiology*; Lillian B. Patterson, *Nursing*.

BOARDS AND COMMITTEES, 1949-1950

Administrative

- Administrative Board of the Division of Counseling and Testing*—Chairman, Lauer; Loucks, F. F. Powers, Strother.
- Agnes Anderson Research Fund*—Chairman, Grondal; Birnbaum, Holt, Utterback, Winther; Associate Dean of the Graduate School.
- Arboretum Board*—Chairman, Marckworth; Brockman, Goodrich, Graham, C. L. Hitchcock, Roy L. Maryatt, May, Mulligan, William F. Paddock, O. B. Thorgrimson, Wahlstrom.
- Audio-Visual Activities Board*—Chairman, Loew; Edwin Adams, Cochran, Hayden, Pauline Johnson, Normann, Schram; F. F. Powers, ex officio and secretary; Don Anderson, ex officio.
- Board of Admissions*—Chairman, Burd; A. V. Eastman, Rahskopf; Registrar, secretary.
- Board of Health Sciences*—Chairman, Turner; Cross, Goodrich, Guthrie, Haviland, Hiscox, E. M. Jones, Lauer, L. E. Powers, Soule, Wahlstrom.
- Board of Veterans' Problems*—Chairman, Burd; A. V. Eastman, Rahskopf; Registrar, secretary.
- Campus Residences for Students*—Chairman, Kidwell; Conrad, Nygreen, Pringle, Leona Saunders, Terrell.
- Coordinating Committee on Academic Relations with Public and Private Colleges of Washington*—Chairman, Toner; Emery, F. F. Powers, Verne Ray, E. R. Wilcox.
- Engineering Experiment Station Board*—Chairman, Wessman; A. V. Eastman, F. S. Eastman, Farquharson, Goodspeed, Grondal, C. W. Harris, McMinn, Moulton, Pifer, Utterback, Van Horn.
- Exchange Scholarship Committee*—Chairman, C. E. Martin; Executive Secretary, Riley; Huber, A. W. Martin, H. C. Meyer, Michael, Nostrand, E. R. Wilcox; James Davis, Counsel of Foreign Students, ex officio.
- Far Eastern and Russian Institute Advisory Board*—Chairman, G. E. Taylor; Bauer, Falknor, Grimshaw, Gunther, Holt, Huber, Isaacs, Lauer, Lundberg, C. E. Martin, H. H. Martin, E. J. Nelson.
- Graduate Council*—Chairman, Guthrie; H. S. Bennett, Burd, Cross, Eby, J. B. Harrison, C. L. Hitchcock, Marckworth, A. W. Martin, F. F. Powers, Verne Ray, Vail, Van Horn. Sub-Committee—Walker-Ames Fund Chairman, Verne Ray, C. L. Hitchcock, Carroll Reed.
- Graduate School Publications Committee*—Chairman, Verne Ray; Bauer, K. C. Cole, Davidson, Gates, Goodspeed, D. D. Griffith, C. L. Hitchcock, Ordal, Savage; University Editor, ex officio.
- High School Student Relations and Orientation*—Chairman, Toner; Secretary, Harold Adams; Donald Anderson, Eric Barr, Bechtolt, Cassill, T. Cole, Emery, Hamack, R. B. Harris, F. F. Powers, Rahskopf, Schram, Tyler, Warner.
- Labor Economics Institute Advisory Council*—Chairman, Hopkins; Burd, K. C. Cole, Guthrie, Mackenzie, McMinn, Mund, D. Miller.
- Nursery School Board*—Chairman, F. F. Powers; Bijou, Ferguson, Lauer, Rowntree, Soule.
- Pulp Mills Research Committee*—Chairman, H. K. Benson; Blaser, Grondal, Moulton, Ordal, Verne Ray, Tartar. Technical Subcommittee—Chairman, Tartar; Grondal, Ordal.
- Room Assignments Committee*—Chairman, Wahlstrom; Guthrie, L. Lewis, May, Segale, Toner, and Dean of College concerned.
- Special Board on Retirement for Health*—Chairman, Mackenzie; Dean of Medical School, executive officer in charge of academic personnel and/or the adviser for nonacademic personnel, Birnbaum, Lester, Pullen.
- Traffic Control Board*—Chairman, Rhodes; S. W. Hall, Arthur Raphaelowitz; Noel Walther, alternate.
- University Research Committee*—Chairman, Mackin; Burd, Carrell, D. Miller, Verne Ray, G. S. Smith, Tartar.

OFFICERS OF THE FACULTY 1949-1950

- Chairman of the Senate.....Donald Mackenzie
- Chairman of the Executive Committee.....Raymond B. Allen
- Vice-Chairman of the Senate and the Executive Committee.....Bretns Stirling
- Secretary.....Ethelyn Toner
- Executive Committee: Group I, Bretns Stirling; Group II, Kathleen Munro; Group III, Roy M. Winger; Group IV, Ernest D. Engel; Group V, William S. Hopkins; Group VI, Donald Mackenzie; Group VII, H. Stanley Bennett.

COMMITTEES OF THE FACULTY 1949-1950

Ex-officio members without vote unless specifically stated otherwise.

- Admissions and Scholastic Standards*—Chairman, Hayden; N. W. Gregory, A. R. Jerbert, Reed, Sergev, W. C. E. Wilson, Youngken; Registrar, ex officio; Admissions Assistant, ex officio.
- Adult Education and Extension Services*—Chairman, Arestad; Franzke, Harkins, Henderson, W. R. Hill, Loucks, Wollett; Director, Division of Adult Education and Extension Services, ex officio; Comptroller, ex officio.
- Athletics*—Chairman, Everest; Barksdale, Bird, Corbally, Donaldson, Harsch, McCarthy, Schrader; P.C.C. Representative, ex officio with vote (if not otherwise a member of the committee); Manager of Athletics, ex officio.
- Budget*—Chairman, C. E. Martin; Gillingham, M. D. Green, C. J. Miller, Shipman, Van Horn, R. H. Williams; Comptroller, ex officio.
- Building Needs*—Chairman, L. D. Lewis; M. J. Brown, T. H. Campbell, DuPen, Herrman, Rushmer, R. L. Taylor; Superintendent of Buildings and Grounds, ex officio; Executive Secretary, Room Assignments Committee, ex officio.
- Committee on Committees*—Chairman, Huber; Bauer, Bennett, Cady, Corbally, Dille, Donaldson, Engel, Hopkins, Pauline Johnson, Mackenzie, Munro, Stirling, Winger.
- Curriculum*—Chairman, Cochran; Cannon, Hald, Normann, Perrin, Roman, Williston; plus one ex officio member representing each college and distinct unit of the University; University Editor, ex officio.
- Graduate Study and Research*—Chairman, Hopkins; Dauben, F. S. Eastman, Eby, C. A. Evans, Goodspeed, Lawton, Lorig; Dean of the Graduate School, ex officio.
- Graduation*—Chairman, Munro; S. D. Brown, Coombs, A. V. Eastman, Smullyan, Stein, Zuckerman; Registrar, ex officio.
- Honors*—Chairman, R. P. Adams; Huber, Jacobs, Katz, B. D. Mills, Schertel, Woodcock; Registrar, ex officio.
- Junior Colleges*—Chairman, T. R. Cole; R. Q. Brown, Cramlet, Creore, Buechel, Emery, Kinsella, Lawson, Lingafelter, J. C. H. Robertson, Tidwell; Dean of the College of Education, ex officio; Registrar, ex officio.
- Library*—Chairman, Uehling; Bostetter, Brockman, Emerson, J. K. Hall, Hatch, Jessup, Moritz, E. J. Nelson, Penington, Ruch; Librarian, ex officio.
- Museum*—Chairman, Gunther; Benson, N. D. Gershevsky, Mackin, Naiden, Pries, D. L. Ray; Director of the Museum, ex officio.
- Personnel*—Chairman, W. R. Wilson; Barnowe, Burgess, Cady, L. D. Carlson, Hennes, Melden; Director of Faculty Personnel, ex officio; Dean of the Graduate School, ex officio.
- Public Exercises*—Chairman, Lindblom; Harrington, Hermans, A. R. Jerbert, Kingston, Kunde, W. E. Rogers, Sanderman, F. C. Smith.
- Public Lectures and Concerts*—Chairman, Savage; Chapple, Conway, Dille, Frost, Gitler, B. P. Jacobson, M. L. Johnson, A. W. Martin, Rader, B. Pauline Johnson; Director, Division of Adult Education and Extension Services, ex officio; Director of Student Affairs, ex officio.
- Public Relations*—Chairman, Christian; E. H. Adams, Burd, Mund, Peck, Strayer, Webster; Comptroller, ex officio; Director, Public Information and University Relations, ex officio; Executive Secretary of the Alumni Association, ex officio.
- Rhodes Scholarship*—Chairman, J. B. Harrison; K. C. Cole, Densmore, Lawton, R. J. Robinson, Ruch, Savelle.
- ROTC Programs*—Chairman, Pifer; Ethel, Hilen, Kenworthy, Palmer.
- Rules*—Chairman, Stirling; Beaumont, H. C. Douglas; Registrar, ex officio; University Editor, ex officio.
- Schedule and Registration*—Chairman, Powell; S. F. Anderson, Bowerman, Butterbaugh, Haller, Horne, Warner; Registrar, ex officio; Registration Assistant, ex officio.
- Student Discipline*—Chairman, Horton; M. Harris, A. E. Harrison, Leahy, Rutledge, Sivertz, R. M. Wilson; Executive Officer of the Department of Psychiatry, ex officio.
- Student Organizations*—Chairman, Zillman; Baisler, Crain, R. J. Johnson, Johnston, L. B. Patterson, Redford; Counselor for Men, ex officio; Associate Director of Student Affairs, ex officio.
- Student Welfare*—Chairman, Kidwell; Auernheimer, A. L. Edwards, Garfield, Guberlet, H. A. Kaufman, Mansfield, McCullough, Sylvester, Tatsumi; Director of Student Affairs, ex officio; Registrar, ex officio.
- Tenure and Academic Freedom*—Chairman, Gose; M. E. Benson, Goodspeed, J. B. Harrison, Hatch, Huber, R. J. Robinson, Rowntree, Sholley, T. G. Thompson, C. T. Williams.

Special Committees

- Aid Philippine Universities*—Chairman, Hatch; Bauer, Cady, Michael, C. T. Williams.
- Investigate the Grading System*—Chairman, Dudek; R. P. Adams, Carrell, Dvorak, Goldberg, W. R. Hill, F. H. Schmidt, Smullyan.
- Study the Duties of the Junior Colleges Committee*—Chairman, Wilcox; Cornu, Katz, Powell, Strayer.
- Study Summer School Regulations and Contract Research Rules*—Chairman, Gates; Cannon, E. Draper, Heilman, Henderson, Moulton, Van Horn.
- Transfer Credit Evaluation*—Chairman, Irvine; Engel, R. F. Farwell, Gates, Roasbach, West, Winter; Registrar, ex officio; Dean of the College of Education, ex officio.

ALPHABETICAL LIST OF THE UNIVERSITY FACULTY

February 28, 1950

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.

- RAYMOND BERNARD ALLEN, 1946..... President of the University
B.S., 1924, A.M., 1925, M.B., 1928, M.D., 1928, Ph.D., 1934, Minnesota; LL.D., 1946, Tulane; LL.D., 1946, Illinois; LL.D., 1946, Lake Forest College; D.Sc., 1947, Whitman; LL.D., 1948, Hawaii; LL.D., 1948, Boston; LL.D., 1949, Gonzaga
- ABBOTT, GORDON A., 1948..... Consultant in Medicine
B.S., 1927, North Dakota; M.B., 1929, M.D., 1930, Northwestern
- ABEL, BURL, 1949..... Associate in General Business
B.S., 1929, M.B.A., 1931, Oklahoma
- ADAMS, EDWIN HUBBARD, 1939 (1950)..... Associate Professor of Radio Education; Executive Officer of the Department of Radio Education
B.A., 1927, M.A., 1931, Washington State
- ADAMS, ROBERT PARDEE, 1947..... Associate Professor of English
B.A., 1931, Oberlin; Ph.D., 1937, Chicago
- ADDINGTON, ERCELL ADELBERT, 1948..... Clinical Assistant Professor of Radiology
B.A., 1928, Carleton College (Minnesota); M.D., 1932, M.A., 1939, Minnesota
- ADKINS, GEORGE ERNEST MILNE, 1949..... Instructor in Pediatrics
B.S., 1941, Washington; M.D., 1944, Oregon
- AHNQUIST, GERHARD, 1948..... Clinical Instructor in Obstetrics and Gynecology
B.S., 1926, Washington State; M.D., 1933, New York
- AIRTH, ANNABELLE MARGARET, 1946..... Instructor in Nursing
R.N., B.S., 1946, Washington
- ALDRIDGE, FREDERICK FERDINAND, 1949..... Clinical Affiliate in Public Health and Preventive Medicine
S.B., 1934, Massachusetts Institute of Technology; S.M., 1941, Harvard
- ALEDORT, GLORIA EISEN, 1949..... Associate in Romance Languages and Literature
B.A., 1945, Queens College (Toronto); M.A., 1946, New Mexico
- ALEXANDER, CAPT. DAVID B., 1949..... Assistant Professor of Military Science and Tactics
B.S., 1942, Virginia Polytechnic Institute
- ALEXANDER, MARGARET ANNE, 1949..... Associate in General Business
B.S., 1937, North Dakota
- ALFORD, HAROLD JUDD, 1946 (1948)..... Associate in English; Assistant Director of Adult Education and Extension Services
B.A., 1938, Washington
- ALHADEFF, CHARLES DAVID, 1948..... Lecturer in Fisheries
B.S., 1930, Washington
- ALLARD, WINSTON, 1950..... Associate in Journalism
B.S., 1936, Oregon; M.A., 1940, Iowa
- ALLEN, HARRY CLAY, JR., 1949..... Research Associate in Chemistry
S.B., 1948, Northeastern; Sc.M., 1949, Brown
- ALLIGER, RUTH MARY, 1947..... Head Teacher and Associate in the Nursery School
B.A., B.E., 1940, Washington State
- ALLISON, GEORGE HOWARD, 1950..... Clinical Instructor in Psychiatry
B.A., 1943, Rochester; M.D., 1945, Yale
- ALLISON, LAWRENCE LE ROY, 1950..... Associate Lecturer in Estate Planning
- ALLISON, MARY CLARA, 1944 (1948)..... Acting Instructor in Romance Languages and Literature
B.A., 1926, College of Idaho; M.A., 1928, Northwestern
- ALPS, GLEN EARL, 1945 (1948)..... Instructor in Art
B.A., 1940, Colorado State College of Education; M.F.A., 1947, Washington
- ALTOSE, ALEXANDER RICHARD, 1947..... Clinical Instructor in Medicine
M.B., 1937, M.D., 1938, Northwestern
- AMASSIAN, VAHE EUGENE, 1949..... Instructor in Physiology and Biophysics
B.A., 1945, M.B., B.Ch., 1948, Trinity College, Cambridge University (England)
- ANDERSON, ARTHUR G., JR., 1946 (1947)..... Assistant Professor of Chemistry
A.B., 1940, Illinois; M.S., 1942, Ph.D., 1944, Michigan
- ANDERSON, ARTHUR ROBERT, 1950..... Clinical Instructor in Fixed Partial Dentures
B.S., 1945, D.D.S., 1946, California
- ANDERSON, BERTON EMMETT, 1948..... Assistant Professor of Dental Science and Literature
D.M.D., 1925, Oregon

- ANDERSON, CARL ORLANDO, 1947 (1949).....Clinical Assistant Professor of Prosthodontics
D.D.S., 1924, Northwestern
- ANDERSON, DONALD LORRAINE, 1947 (1948).....Instructor in Mining Engineering
B.S., 1938, St. Francis Xavier University (Nova Scotia); B.S. in Min. Engr., 1941, Illinois
- ANDERSON, FREDERICK NEIL, 1945 (1948).....Acting Instructor in Art
B.A., 1943, Washington
- ANDERSON, HELEN CORNELIA, 1945.....Instructor in Nursing
R.N., 1934, Bishop Johnson College of Nursing (Los Angeles); B.S., 1945, Washington;
C.P.H.N., 1947, Washington
- ANDERSON, KIRK J., 1949.....Clinical Associate in Anatomy
B.A., 1942, College of Idaho; M.S., 1944, Oregon
- ANDERSON, OSWELL ARTHUR, 1946.....Clinical Professor of Fixed Partial Dentures
D.M.D., 1918, North Pacific College
- ANDERSON, ROGER, 1948.....Senior Consultant in Orthopedic Surgery
B.S., 1915, Hamline University (Minnesota); B.S., 1918, M.D., 1918, Northwestern
- ANDERSON, SYLVIA FINLAY, 1920 (1947).....Assistant Professor of English
B.A., 1919, M.A., 1923, Washington
- ANDERSON, VICTORIA, 1937 (1948).....Instructor in English
B.A., 1914, M.A., 1917, Washington
- ANDREWS, FRED CHARLES, 1948.....Associate in Mathematics
B.S., 1946, Washington
- ANKELE, FELICITAS CHARLOTTE, 1927 (1947).....Assistant Professor of German
B.A., 1925, M.A., 1926, Ph.D., 1936, Washington
- ANSELM, COURTNEY DAVID, 1949.....Research Associate in Oceanography
B.S., 1941, Washington
- ANSHUTZ, HERBERT LEO, 1947 (1948).....Instructor in English
B.A., 1937, Ph.D., 1949, Washington
- ARBINGAST, STANLEY ALAN, 1948.....Associate in Geography
B.E., 1934, Winona State Teachers College; M.A., 1948, Washington
- ARESTAD, SVERRE, 1937 (1948).....Associate Professor of Scandinavian Languages;
Executive Officer of the Department of Scandinavian Languages
B.A., 1929, Ph.D., 1938, Washington
- ARONSON, SAMUEL FREDERICK, 1947.....Clinical Instructor in Medicine
B.S., 1931, Washington; M.D., 1936, Northwestern
- ARRIGONI, LOUIS, 1941 (1945).....Assistant Professor of Pharmaceutical Chemistry
B.S., 1938, M.S., 1940, Ph.D., 1945, Washington
- ASH, JOSEPH LAFAYETTE, 1949.....Consultant in Surgery
B.S., 1923, M.S., 1925, Creighton
- ASTEL, GEORGE BERNARD, 1943 (1944).....Assistant Professor of Journalism
B.A., 1923, Washington
- AUERNHEIMER, AUGUST A., 1928 (1937).....Assistant Professor of Physical Education
B.P.E., 1926, Normal College of the American Gymnastic Union (Indiana);
B.S., 1931, Washington; M.A., 1932, Columbia
- AULT, NELSON ALLEN, 1947 (1949).....Instructor in English
B.A., 1939, M.A., 1947, Washington
- AVANN, SHERWIN PARKER, 1946.....Assistant Professor of Mathematics
B.S., 1938, Washington; M.S., 1940, Ph.D., 1942, California Institute of Technology
- AVERY, DON EDWARD, 1945 (1947).....Instructor in General Engineering
B.S. in M.E., 1937, Washington
- BACKSTROM, MAJOR BERT HAROLD, U.S.A., 1946.....Assistant Professor of
Military Science and Tactics
- BACON, SANFORD LORD, JR., 1949.....Associate in Accounting, Management and Statistics
B.S., 1939, Washington
- BAILEY, ALAN JAMES, 1939 (1942).....Associate Professor and Acting Director of
Lignin and Cellulose Research
B.S., 1933, M.S., 1934, Ph.D., 1936, Washington
- BAILEY, BASIL EDWIN, 1949.....Lecturer in Fisheries
B.A.Sc., 1930, M.A.Sc., 1936, British Columbia; Ph.D., 1940, Wisconsin
- BAILY, ATHOL ROMAYNE, 1949.....Assistant Professor of Education
B.S., 1931, Kansas State Teachers College; M.A., 1936, Ed.D., 1949, Missouri
- BAIR, EDWARD JAY, 1949.....Research Associate in Chemistry
B.S., 1943, Colorado A. & M.; Ph.D., 1949, Brown
- BAIRD, JOHN DOUGLAS, 1947.....Associate in Romance Languages and Literature
B.A., 1924, British Columbia

- BAISLER, PERRY EMANUEL, Jr., 1937 (1947).....Assistant Professor of Speech
B.A., 1932, M.A., 1938, Washington
- BAKER, CLAUDE ROWE, 1947 (1949).....Professor of Fixed Partial Dentures
Executive Officer of the Department of Fixed Partial Dentures
D.D.S., 1935, B.A., 1937, M.S., 1939, Minnesota
- BAKER, FREDERICK BRUCE, 1948 (1949).....Instructor in Forest Products
B.A. Sc., 1947, British Columbia
- BAKER, JOEL WILSON, 1948.....Consultant in Surgery
M.D., 1928, Virginia
- BAKER, WILLIAM Y., 1947.....Clinical Instructor in Psychiatry
B.S., 1931, M.D., 1933, Nebraska
- BALL, RICHARD WILLIAM, 1948.....Instructor in Mathematics
B.A., 1944, M.A., 1945, Ph.D., 1948, Illinois
- BALLANTINE, JOHN PERRY, 1926 (1937).....Professor of Mathematics
A.B., 1918, Harvard; Ph.D., 1923, Chicago
- BALLARD, ARTHUR CONDUCT, 1929.....Honorary Research Associate in Anthropology
B.A., 1899, Washington
- BALLIS, WILLIAM BELCHER, 1948.....Professor of Russian Government and Politics
B.A., 1929, Stanford; Ph.D., 1936, Chicago
- BANGS, JACK LESTER, 1947.....Assistant Professor of Speech
B.S., 1939, M.A., 1941, Washington; Ph.D., 1948, Iowa
- BANNICK, EDWIN GEORGE, 1947.....Clinical Professor of Medicine
B.S., 1918, M.D., 1920, Iowa
- BARBEE, CAPT. BILLIE M., U.S.A., 1948.....Assistant Professor of Military Science and Tactics
B.A., 1941, Colorado College
- BARBER, THEODORE MELVIN, 1946.....Lecturer in Nursing;
Clinical Affiliate in Psychiatry
B.S., 1925, M.D., 1927, Nebraska
- BARKSDALE, JULIAN DEVREAU, 1936 (1949).....Professor of Geology
B.A., 1930, Stanford; Ph.D., 1936, Yale
- BARNES, CLIFFORD ADRIAN, 1947.....Associate Professor of Oceanography
B.S., 1930, Ph.D., 1936, Washington
- BARNHART, FRED PALEN, 1949.....Clinical Instructor in Prosthodontics
B.S.D., 1934, D.D.S., 1934, Northwestern
- BARNOWE, THEODORE JOSEPH, 1947.....Assistant Professor of Personnel Administration
B.A., 1939, Morningside College (Iowa); M.A., 1940, Ph.D., 1946, Washington
- BARR, ERIC LLOYD, 1936 (1946).....Director of the Summer Sessions;
Professor Emeritus of Naval Science and Tactics
Graduate, 1911, U.S. Naval Academy; Ph.D., 1938, Washington
- BARR, JOHN ALTON, 1947 (1949).....Assistant Professor of Elementary Education
B.S., 1936, M.A., 1938, Minnesota; Ph.D., 1948, Washington
- BARRACLOUGH, CLIFFORD ARTHUR, 1949.....Instructor in German
B.A., 1949, Buffalo
- BARTON, PAUL, 1947.....Associate in English
A.B., 1939, DePauw; M.A., 1948, Washington
- BASKERVILLE, BARNET, 1948.....Assistant Professor of Speech
B.A., 1940, M.A., 1944, Washington; Ph.D., 1948, Northwestern
- BATES, ALAN PHILIP, 1947.....Associate in Sociology
B.A., 1938, M.A., 1940, Washington
- BATIE, HARRIETT VIRGINIA, 1941 (1949).....Instructor in Education;
Certification and Academic Adviser
B.S., 1935, Hastings College (Nebraska); M.A., 1945, Washington
- BAUER, HARRY C., 1945 (1947).....Professor of Librarianship; Director of Libraries
B.A., 1927, M.S., 1929, Washington University (St. Louis); Certificate of
Librarianship, 1931, St. Louis Library School
- BEAL, MAUD LAYTON, 1933 (1947).....Assistant Professor of English
B.A., 1926, M.A., 1929, Washington
- BEALE, JAMES MAC ARTHUR, Jr., 1948.....Assistant Professor of Music
B.A., 1945, Harvard; B.M., 1946, M.M., 1947, Yale
- BEARD, HARRY RANDALL, 1945.....Lecturer in Fisheries
B.A., 1917, Colorado; M.S., 1920, Wisconsin
- BEAT, ALBERTA MARGARET, 1947 (1948).....Acting Instructor in Dental Hygiene
Cert. in Dental Hygiene, 1946, Columbia

- BEAUMONT, ROSS ALLEN, 1940 (1948) Associate Professor of Mathematics
A.B., 1936, M.S., 1937, Michigan; Ph.D., 1940, Illinois
- BECHTEL, LENORE ALBERTA, 1948 Associate in Humanistic-Social Studies
B.M., 1938, DePauw
- BECHTHOLT, EDWARD, 1947 Director of the Bureau of Teacher Service and Placement
B.A., 1934, M.A., 1947, Washington
- BECK, ELEANOR NORDHOFF, 1932 Associate in Music
- BECKER, ROLAND FREDERICK, 1946 (1947) Associate Professor of Anatomy
B.S., 1935, M.S., 1937, Massachusetts State; Ph.D., 1940, Northwestern
- BEEBE, WINN LAPHAM, 1949 Clinical Instructor in Fixed Partial Dentures
D.D.S., 1929, Minnesota
- BELL, FREDERICK HEWARD, 1931 Lecturer in Fisheries
B.A., 1924, British Columbia
- BELL, MARJORIE LAWSON, 1946 Associate in English
B.A., 1931, Washington
- BELL, THEODORE B. Associate in Radio Education
B.A., 1938, Washington
- BELL, WARREN WATSON, 1948 Consultant in Obstetrics and Gynecology
M.D., 1917, Vanderbilt
- BELSHAW, ROLLAND ELWOOD, 1930 (1943) Professor of Physical Education;
Executive Officer of the Department of Physical Education for Men
B.A., 1927, Oregon; M.A., 1930, Columbia
- BENDER, CHARLES EDWARD, 1946 (1947) Clinical Instructor in Medicine;
Clinic Physician in the Health Center
Ph.G., 1925, Ohio Northern; A.B., 1931, Ohio State; M.D., 1935, Jefferson Medical
College (Philadelphia)
- BENEPE, OTIS JEROME, 1947 (1949) Research Associate in Psychology
B.S., 1947, Washington
- BENHAM, ALLEN ROGERS, 1905 (1949) Professor Emeritus of English;
Research Consultant
A.B., 1900, A.M., 1901, Minnesota; Ph.D., 1905, Yale
- BENNETT, EDWIN SAXTON, 1947 Clinical Professor of Medicine
M.D., 1914, New York University
- BENNETT, HENRY STANLEY, 1948 Professor of Anatomy; Executive Officer
of the Department of Anatomy
A.B., 1932, Oberlin College; M.D., 1936, Harvard
- BENNO, NORMAN LLOYD, 1946 Associate in Music
- BENSON, EDNA GRACE, 1927 (1936) Associate Professor of Art
B.A., 1909, Iowa; M.A., 1923, Columbia
- BENSON, HENRY KREITZER, 1904 (1947) Professor Emeritus of Chemical Engineering;
Research Consultant, Departments of Chemistry and Chemical Engineering
A.B., 1899, A.M., 1902, D.Sc., 1926, Franklin and Marshall College (Pennsylvania);
Ph.D., 1907, Columbia
- BENSON, MERRITT ELIHU, 1931 (1948) Professor of Journalism;
Assistant Director of the School of Journalism
LL.B., 1930, Minnesota; B.A., 1942, Washington
- BERBERET, JOHN ALBERT, 1949 Associate in Physics
B.S., 1941, Carrol College (Montana); M.A., 1943, Nebraska
- BERGREN, HOMER A., 1950 Lecturer in Accounting, Management and Statistics
A.B., 1935, LL.B., 1935, Washington
- BERGSETH, FREDERICK ROBERT, 1947 Assistant Professor of Electrical Engineering
B.S. in E.E., 1937, Washington; S.M. in E.E., 1938, Massachusetts Institute of Technology
- BERNBAUM, SANFORD M., 1950 Associate Lecturer in Law
B.S., 1936, Washington
- BEVIS, LEURA DOROTHY, 1947 Assistant Professor of Librarianship
B.A., 1927, Pomona; B.S. in L.S., 1947, Southern California
- BICKLEY, JOHN STROCK, 1948 (1949) Assistant Professor of Insurance
B.A., 1939, M.B.A., 1947, Wisconsin
- BIJOU, SIDNEY WILLIAM, 1948 Associate Professor of Psychology;
Director of the Child Development Clinic
B.S., 1933, Florida; M.A., 1936, Columbia; Ph.D., 1941, Iowa
- BILL, ALEXANDER HARVEY, JR., 1948 Clinical Associate in Surgery
A.B., 1935, M.D., 1939, Harvard
- BILLINGTON, SHEROD MARSHALL, 1947 Clinical Instructor in Pediatrics
A.B., 1932, M.D., 1935, Vanderbilt

- BINDER, BETTY JEAN, 1947.....Associate in English
B.A., 1938, M.A., 1942, Minnesota
- BINGHAM, JAMES BALDWIN, Jr., 1947.....Clinical Instructor in Medicine
B.S., 1935, M.D., 1937, Wisconsin
- BIRD, WINFRED WYLAM, 1928 (1946).....Associate Professor of Speech
A.B., 1926, Lawrence College; Ph.D., 1938, Iowa
- BIRNBAUM, ZYGMUNT WILLIAM, 1939 (1945).....Associate Professor of Mathematics;
Director of the Laboratory of Statistical Research
LL.M., 1925, Ph.D., 1929, John Casimir University (Lwow, Poland)
- BISE, LOIS EMILY, 1949.....Instructor in Nursing
B.S., 1947, Washington State
- BISHOP, CHARLENE AURELLA, 1949.....Instructor in Home Economics
B.S., 1938, Iowa State Teachers College; M.S., 1949, Wisconsin
- BISHOP, EVERARD ALLEN, 1949.....Clinical Assistant Professor of Orthodontics
D.D.S., 1919, Northwestern
- BITAR, EMMANUEL, 1948.....Clinical Instructor in Pathology
B.S., 1935, M.D., 1939, Oregon
- BLACKBURN, CONSTANCE GLORIA, 1950.....Instructor in Nursing
R.N., 1948, Swedish Hospital (Seattle); B.S., 1949, Washington
- BLACKHAM, CORNELL EDGAR, 1950.....Clinical Associate in Anatomy
M.D., 1946, Utah
- BLACKMAN, HELEN MARIE, 1943.....Instructor in Nursing
R.N., 1929, St. Luke's (Iowa); B.S., 1942, Washington
- BLACKMAN, JAMES, 1948.....Consultant in Surgery
A.B., 1928, Kalamazoo College (Michigan); M.D., 1932, Johns Hopkins
- BLACKSTONE, BRUCE IRVIN, 1949.....Acting Assistant Professor of Secretarial Administration
B.S., 1947, M.S. in Ed., 1948, Southern California
- BLANDAU, RICHARD J., 1949.....Associate Professor of Anatomy
A.B., 1935, Linfield College; Ph.D., 1939, Brown; M.D., 1948, Rochester
- BLANKENSHIP, WILLIAM RUSSELL, 1932 (1943).....Professor of English
A.B., 1914, Missouri; M.A., 1929, Ph.D., 1935, Washington
- BLASER, HENRY WESTON, 1946 (1948).....Associate Professor of Botany
B.S., 1931, A.M., 1933, Temple (Pennsylvania); Ph.D., 1940, Cornell University
- BLATT, FRANK JOACHIM, 1948.....Associate in Electrical Engineering
B.S. in E.E., 1946, M.S. in E.E., 1948, Massachusetts Institute of Technology
- BLISS, ADDIE JEANNETTE, 1922 (1949).....Associated Professor (Retired) of Home Economics
B.A., 1906, Washington; M.A., 1917, Columbia
- BLIVEN, PAUL, 1941.....Lecturer in General Engineering
B.S. in M.E., 1927, Minnesota; LL.B., 1933, Georgetown
- BLUMENFELD, IRWIN S., 1948.....Associate in Journalism; Manager of News
Service, Office of Public Information
B.A., 1930, Washington
- BLYTHE, HARRY, 1949.....Instructor in Business Finance, Banking and Insurance
B.S., 1947, M.S., 1949, Columbia
- BOBBITT, FRANCIS STERLEN, 1949.....Clinical Instructor in Psychiatry
B.S., 1941, B.M., 1943, M.D., 1944, Northwestern
- BOEHMER, HERBERT, 1937 (1945).....Assistant Professor of General Engineering
Dipl. Ing., 1928, German Technical University; M.S. in A.E., 1933, Washington
- BOGARDUS, MIRIE PLAYTER, 1948.....Acting Instructor in Home Economics
B.S., 1920, Washington
- BOGGS, THEODORE HARDING, 1947.....Acting Professor of Economics
B.A., 1902, Acadia University (Nova Scotia); B.A., 1905, Ph.D., 1908, Yale
- BOLTON, FREDERICK ELMER, 1912 (1947).....Professor Emeritus of Education;
Research Consultant; Dean Emeritus of the College of Education
B.S., 1893, M.S., 1896, Wisconsin; Ph.D., 1898, Clark University
- BONE, HUGH ALVIN, 1948.....Professor of Political Science
B.A., 1931, North Central College (Illinois); M.A., 1935, Wisconsin;
Ph.D., 1937, Northwestern
- BONFELD, ITA GRINTUCH, 1949.....Instructor in Nursing
B.S., 1947, Wagner College (New York)
- BONHAM, KELSHAW, 1944.....Research Associate in the Applied Fisheries Laboratory
B.S., 1931, M.S., 1935, Ph.D., 1937, Washington
- BONIFAS, PAUL AMI, 1946 (1947).....Associate Professor of Art

- BONNELL, MILDRED, 1947**.....Assistant Professor of Home Economics;
Assistant Director of the University Dining Halls
B.A., 1927, Illinois; M.A., 1942, Columbia
- BOROUGH, HOMER, JR., 1948 (1949)**.....Instructor in Education
B.A., 1939, Western Washington College of Education; M.A., 1947, Washington
- BOSTETTER, EDWARD EVERETT, 1940 (1947)**.....Associate Professor of English
A.B., 1935, Franklin and Marshall College (Pennsylvania); M.A., 1937, Ph.D.,
1938, Princeton
- BOSTWICK, IRENE NEILSON, 1930 (1942)**.....Assistant Professor of Music
B.M., 1922, Washington
- BOTZER, WILLIAM HOLST, 1946**.....Lecturer in Business Law
B.A., 1935, LL.B., 1938, Washington
- BOUGHTON, GLADYS R., 1947**.....Assistant Professor of Librarianship
B.A. Certificate in L.S., 1932, M.S., 1939, University of Denver
- BOWERMAN, CHARLES EMERT, 1946**.....Assistant Professor of Sociology
A.B., 1935, Denison; M.A., 1941, Ph.D., 1948, Chicago
- BOWERS, BERNA THOMAS, 1949**.....Clinical Associate in Otolaryngology
M.D., 1924, Tulane University (Louisiana)
- BOWERS, JAMES MICHAEL, 1947**.....Clinical Assistant Professor of Medicine
A.B., 1922, M.D., 1925, Michigan
- BOWLER, FRANK TAIT, 1947**.....Clinical Instructor in Pedodontics
D.M.D., 1945, North Pacific College
- BOWLES, ALBERT J., 1948**.....Consultant in Surgery
A.B., 1919, M.D., 1923, Oregon
- BOYLE, JEAN ELIZABETH, 1946**.....Assistant Professor of Nursing Education
B.S., 1936, M.N., 1941, Washington
- BOYNE, THOMAS WILLIAM, 1949**.....Instructor in Marketing
B.A., 1947, Hawaii; M.S., 1949, Columbia
- BRADFORD, FLORENCE IRENE, 1947 (1949)**.....Lecturer in Social Work;
Supervisor of Field Work in the Graduate School of Social Work
B.S., 1939, Springfield College (Massachusetts); M.A., 1946, Chicago
- BRAGG, KENNETH NORTON, 1948**.....Research Associate in the Bureau of
Governmental Research and Services
B.A., 1947, Washington
- BRAKEL, HENRY LOUIS, 1905 (1947)**.....Professor Emeritus of Physics;
Major Adviser of the Department of Physics
B.A., 1902, Olivet College (Michigan); M.A., 1905, Washington; Ph.D., 1912, Cornell
- BRANT, DANIEL HOSMER, 1949**.....Associate in Zoology
B.S., 1943, Minnesota
- BRAUER, JOHN CHARLES, 1947**.....Professor of Pedodontics; Executive Officer,
Department of Pedodontics; Director of Postgraduate Dental Education
D.D.S., 1928, A.B., 1934, M.S., 1936, Nebraska
- BRAZEAU, WENDELL PHILLIPS, 1945 (1948)**.....Instructor in Art
B.F.A., 1933, M.F.A., 1947, Washington
- BREWER, STANLEY HAROLD, 1946 (1949)**.....Assistant Professor of Transportation
B.A., 1942, M.B.A., 1943, Washington
- BRIDGES, WILLIAM CHARLES, 1948**.....Clinical Instructor in Medicine
B.S., 1938, Washington; M.D., 1940, Yale
- BRIER, HOWARD MAXWELL, 1947**.....Assistant Professor of Journalism
B.A., 1925, M.Ed., 1931, Washington
- BRIGHTBILL, LINWOOD JAMES, 1947 (1949)**.....Assistant Professor of Architecture
B.S., 1931, M.S., 1933, Minnesota
- BRILL, JOHN PETER, JR., 1949**.....Clinical Associate in Legal and Forensic Medicine
- BROBACK, IDA MARIE, 1948**.....Acting Instructor in Home Economics
B.A., 1942, Washington
- BROCKMAN, C. FRANK, 1946 (1949)**.....Associate Professor of Forestry
B.S., 1924, Colorado State; M.S., 1931, Washington
- BROER, MARION RUTH, 1947 (1948)**.....Assistant Professor of Physical Education
B.S., 1933, M.S., 1936, Wisconsin
- BROWN, EDWARD GORDON, 1948 (1949)**.....Professor of Business Administration
A.B., 1929, Washington; M.B.A., 1932, Harvard
- BROWN, LUNA BOWDOIN, 1947**.....Assistant Professor of Social Work
B.S., 1926, Florida State College for Women; M.A., 1937, New York
- BROWN, MALCOLM JOHNSTON, 1946 (1947)**.....Assistant Professor of English
B.A., 1931, Ph.D., 1946, Washington

- BROWN, MARIE BAARSLAG, 1948.....Associate in Art
B.A., 1939, Washington
- BROWN, ROBERT HENRY, 1948.....Acting Instructor in Physics
B.A., 1940, Union College (Nebraska); M.S., 1942, Nebraska
- BROWN, ROBERT QUIXOTE, 1919 (1947).....Professor of General Engineering
B.S. in E.E., 1916, Washington
- BROWN, ROBERT WHITCOMB, 1949.....Lecturer in Nursing; Clinical Affiliate in Psychiatry
B.A., 1923, Wisconsin; M.D., 1928, Harvard; M.S., 1940, Minnesota
- BROWN, SHOLIE RICHARDS, 1947.....Instructor in Speech
A.B., 1925, Wyoming; A.M., 1935, Southern California
- BROWN, STEPHEN DARDEN, 1930 (1937).....Associate Professor of Business Law
LL.B., 1925, B.A., 1932, Washington; LL.M., 1938, Stanford
- BRUENER, BERTRAM F., 1938 (1947).....Clinical Instructor in Medicine; Lecturer in Nursing
B.S., 1926, M.D., 1929, Minnesota
- BRUGGEMAN, GENEVIEVE MARGARET, 1949.....Instructor in Nursing
R.N., 1928, Creighton Memorial St. Joseph's Hospital (Nebraska); B.S., 1947, P.H.N., 1947, Michigan
- BRUMBACH, WAYNE BAKER, 1947.....Acting Instructor in Physical Education
B.S., 1943, M.S., 1947, Washington
- BRYANT, BENJAMIN SMYTH, 1949.....Instructor in Forestry
B.S.F., 1947, M.S.F., 1948, Washington
- BRYANT, CAPT. JACK M., U.S.A., 1947.....Assistant Professor of Military Science and Tactics
- BRYSON, SYLVIA, 1949.....Clinical Affiliate in Public Health and Preventive Medicine
B.S., 1942, George Peabody College (Tennessee)
- BUCK, F. A. MACKINNON, 1948.....Instructor in Chemical Engineering
B.A.Sc., 1943, M.A.Sc., 1944, British Columbia; Ph.D., 1948, Purdue
- BUCKLEY, ROBERT WILLIAM, 1942.....Associate in Physical Education
- BUCKNER, HUBBARD T., 1948.....Senior Consultant in Orthopedic Surgery
M.D., 1913, Jefferson Medical College (Pennsylvania)
- BUECHEL, HENRY THEODORE, 1946 (1949).....Associate Professor of Economics
B.A., 1929, M.A., 1937, Washington State; Ph.D., 1949, Wisconsin
- BUECHLEY, ROBERT WILLIAM, 1949.....Research Associate, Washington Public
Opinion Laboratory
B.A., 1942, Washington
- BURD, HENRY ALFRED, 1924 (1927).....Professor of Marketing; Executive Officer, Department
Marketing, Transportation, and Foreign Trade
B.S., 1910, Illinois Wesleyan; M.A., 1911, Ph.D., 1915, Illinois
- BURGESS, ERNEST MORTON, 1948.....Clinical Instructor in Orthopedics
A.B., 1932, Utah; M.D., 1937, Columbia
- BURGESS, JANNA POTGIETER, 1937 (1947).....Assistant Professor of English
B.A., 1912, Iowa; M.A., 1928, Washington
- BURKE, AGNES EVELYN, 1943 (1948).....Assistant Professor of Nursing
R.N., 1930, M.A., 1941, Western Reserve; B.S., 1930, Akron Municipal University;
C.P.H.N., 1943, Washington
- BURNHAM, THOMAS BOND, 1946 (1949).....Instructor in English
BA., 1936, M.A., 1937, Idaho; Ph.D., 1949, Washington
- BURNETT, ELIZABETH MCINTYRE, 1948.....Associate in Psychology
B.S., 1947, Washington
- BURNS, HARRY HAMILTON, 1934 (1948).....Associate Professor of English
B.A., 1928, Ph.D., 1935, Washington
- BURNS, WAYNE, 1948.....Assistant Professor of English
A.B., 1938, Miami (Ohio); A.M., 1940, Harvard; Ph.D., 1946, Cornell
- BURROUGHS, CARROLL ARMAND, 1947 (1948).....Instructor in Anthropology
B.A., 1940, New Mexico
- BURRUS, MARY EMMA, 1943.....Lecturer in Business Law
B.A., 1935, LL.B., 1937, Washington
- BURUM, HENRY SHELTON, FCC, U.S.N., 1947.....Instructor in Naval Science
- BUSCHKE, FRANZ JULIUS, 1948.....Clinical Assistant Professor of Radiology
M.D., 1926, University of Berlin (Germany)
- BUSSELL, LIONEL FREDERICK, 1949.....Associate in General Business
B.A., 1949, Washington
- BUTLER, LT. FRANCIS ANDREW, 1948.....Assistant Professor of Naval Science
B.S., 1942, U.S. Naval Academy

- BUTLER, RALPH H. R., 1942 (1948) Associate in Mathematics
B.S., 1940, M.S., 1945, Washington
- BUTTERBAUGH, GRANT ILLION, 1930 (1937) Associate Professor of Statistics
A.B., 1916, Wisconsin; M.B.A., 1923, Washington; Ph.D., 1942, Chicago
- CADY, GEORGE HAMILTON, 1938 (1947) Professor of Chemistry
A.B., 1927, A.M., 1928, Kansas; Ph.D., 1930, California
- CADZOW, DOROTHY FORREST, 1949 Instructor in Music
B.A., 1939, Washington; Diploma, 1945, Juilliard School of Music
- CAMBER, ROBERT LOUIS, 1947 (1949) Affiliate in Medicine
B.A., 1939, Reed; M.D., 1943, Oregon
- CAMPBELL, ALEXANDER DUNCAN, 1946 Clinical Instructor in Medicine
B.A., 1930, Whitman; M.D., 1934, Johns Hopkins
Lecturer in Nursing
- CAMPBELL, GORDON PORTIN, 1947 Instructor in Mechanical Engineering
B.S. in M.E., 1945, Colorado
- CAMPBELL, ROBERT ANDREW, 1949 Clinical Instructor in Surgery
B.S., 1924, Washington; M.D., 1932, Oregon
- CAMPBELL, ROBERT MILLER, 1949 Clinical Associate in Obstetrics and Gynecology
B.S., 1942, Washington; M.D., 1945, M.S., 1949, Michigan
- CAMPBELL, THOMAS HERBERT, 1945 (1949) Associate Professor of Civil Engineering
B.S. in C.E., 1934, Washington; M.S. in C.E., 1938, Massachusetts Institute of Technology
- CANNON, ARTHUR MONROE, JR., 1947 (1948) Associate Professor of Accounting
B.S., 1933, M.A., 1947, Oregon C.P.A., 1936
- CANNON, C. VERNON, 1947 Assistant Professor of Physics
B.S., 1935, Virginia; Ph.D., 1940, North Carolina
- CANTRIL, SIMEON THEODORE, 1948 Clinical Associate Professor of Radiology
A.B., 1929, Dartmouth; M.D., 1932, Harvard
- CAPACCIO, GEORGE D., 1947 Clinical Assistant Professor of Medicine
M.D., 1931, Virginia
- CARDONA-COOPER, RODOLFO, 1948 Instructor in Spanish
B.A., 1946, Louisiana State
- CARLILE, THOMAS BURHAM, JR., 1948 Clinical Assistant Professor of Radiology
A.B., 1936, M.D., 1939, Michigan
- CARLSON, LOREN DANIEL, 1945 (1949) Associate Professor of Physiology;
Director of General Education
B.S., 1937, St. Ambrose (Iowa); Ph.D., 1941, Iowa
- CARMODY, L. G. CLATON, 1948 (1949) Acting Assistant Professor of Physical Education
B.A., 1947, Central Washington College of Education; M.A., 1948, Columbia
- CARNEVALI, DORIS SCHOLIN BENSON, 1947 Instructor in Nursing
R.N., 1943, Swedish Hospital (Seattle); B.S., 1947, Washington
- CARPENTER, DAVID BAILEY, 1948 Instructor in Sociology
B.A., 1937, M.A., 1938, Washington University (St. Louis); M.A., 1944, Columbia
- CARR, KENNETH MILLS, 1944 (1948) Instructor in Drama
B.A., 1942, Eastern Washington College of Education; M.A., 1945, Washington
- CARRELL, JAMES AUBREY, 1939 (1947) Professor of Speech
A.B., 1927, Nebraska Wesleyan; M.A., 1929, Ph.D., 1936, Northwestern
- CARRILLO-ESPEJO, FRANCISCO E., 1947 Associate in Romance Languages and Literature
Bachiller, 1947, San Marcos University (Lima)
- CARRITHERS, SUSANNE, 1948 Associate in German
A.B., 1943, Colorado College
- CARROLL, HERBERT BEAUMONT, 1949 Associate in Pediatrics
B.S., 1943, Washington; M.D., 1945, St. Louis University
- CARTER, CAPT. HAMLET R., JR., U.S.A., 1947 Assistant Professor of
Military Science and Tactics
B.S., 1943, U.S. Military Academy
- CARTWRIGHT, PHILIP WINDSOR, 1947 (1948) Assistant Professor of Labor Economics;
Assistant Director of the Institute of Labor Economics
A.B., 1940, M.A., 1942, Stanford
- CASTLE, DANIEL SHETLER, 1949 Lecturer in Nursing
A.B., 1939, Fresno State College; M.D., 1943, Washington University (St. Louis)
- CAVANAUGH, JOSEPH A., 1948 Associate in Sociology
B.A., 1936, Eastern Washington College of Education; M.A., 1943, Washington
- CAVE, ALICE ADELE, 1948 Instructor in Voice
B.Mus., 1945, Eastman School of Music (New York)

- CHALCRAFT, EDWIN PICKERING, 1949 (1950).....Associate in Journalism
- CHAMBERS, E. F. S., 1948.....Consultant in Orthopedics
M.D., 1907, Pennsylvania
- CHAMBERS, RICHARD POWELL, 1948 (1949).....Instructor in Sociology
B.S., 1935, Washington College (Maryland); M.A., 1948, Oklahoma
- CHAPMAN, DOUGLAS GEORGE, 1949.....Assistant Professor of Mathematics
B.A., 1938, Saskatchewan; M.A., 1940, Ph.D., 1949, California;
B.A., (Honorary), 1939, Saskatchewan
- CHAPMAN, STUART WEBSTER, 1947.....Associate Professor of Humanistic-Social Studies;
Acting Executive Officer, Humanistic-Social Department
A.B., 1927, Boston University; Ph.D., 1939, Yale
- CHAPMAN, WILBERT McLEOD, 1947.....Professor of Fisheries;
Director of the School of Fisheries
B.S., 1932, M.S., 1933, Ph.D., 1937, Washington
- CHAPPLE, STANLEY, 1948.....Professor of Music; Director of the School of Music
Dr.Mus. (Honorary), 1947, Colby College (Maine)
- CHENOWETH, HARRY HOLT, 1946 (1947).....Instructor in Civil Engineering
B.S. in C.E., 1937, Washington
- CHERTOK, ELY, 1949.....Associate in Sociology
A.B., 1941, San Francisco State College
- CHESSEX, JEAN CHARLES, 1928 (1948).....Professor of French
B.A., 1920, Gymnase Classique (Lausanne); B.D., 1922, M.A., 1925,
Université Lausanne (Switzerland)
- CHEW, ERIC MacMILLAN, 1947.....Clinical Assistant Professor of Medicine
B.S., 1929, Washington; M.D., 1933, Pennsylvania; M.S., 1938, Minnesota
- CHEYNE, VIRGIL D., 1948.....Professor of Oral Pathology and Oral Diagnosis;
Executive Officer of the Department of Oral Diagnosis
D.D.S., 1933, Iowa; B.A., 1938, Ph.D., 1940, Rochester
- CHINQUE, KATHERINE MADELINE, 1947.....Instructor in Nursing
R.N., 1931, Providence Hospital (Michigan); B.S., 1946, Wayne University
- CHIPP, HENRY DAVIS, 1947 (1948).....Associate Professor of Pathology and Oncology
B.S., 1930, Alabama; M.D., 1934, University of Louisville
- CHITTENDEN, HIRAM MARTIN, 1923 (1949).....Associate Professor of Topographic Surveying
B.S. in C.E., 1920, C.E., 1935, Washington
- CHITTICK, VICTOR LOVITT OAKES, 1948.....Visiting Professor of English
A.B., 1905, A.M., 1906, Acadia University (Nova Scotia); A.M., 1908, Harvard;
Ph.D., 1924, Columbia
- CHRISTIAN, BYRON HUNTER, 1926 (1949).....Professor of Journalism
B.A., 1921, M.A., 1929, Washington
- CHRISTIANSON, KALMA ELEANOR, 1949.....Instructor in Nursing
R.N., 1944, St. Luke's Hospital (North Dakota); B.S., 1948, Washington
- CHU, SHIH-CHIA, 1947 (1948).....Assistant Professor of Chinese Languages and Literature
A.B., 1928, A.M., 1931, Yenching University
- CHU, TUNG-TSU, 1947.....Research Associate in the Far Eastern and Russian Institute
B.A., 1934, M.A., 1936, Yenching University
- CHURCH, PHIL EDWARDS, 1935 (1948).....Professor of Meteorology and Climatology;
Executive Officer of the Department of Meteorology and Climatology
B.S., 1923, Chicago; M.A., 1932, Ph.D., 1937, Clark University
- CLANCY, JOHN, 1948.....Clinical Instructor in Obstetrics and Gynecology
A.B., 1932, Montana; M.D., 1936, Jefferson Medical College (Pennsylvania)
- CLANTON, JACK REED, 1947.....Assistant Professor of Civil Engineering
B.S. in C.E., 1936, Missouri School of Mines; M.S. in C.E., 1939, Pittsburgh
- CLARK, CAROL LOIS, 1946.....Associate in Zoology
A.B., 1941, Baylor; M.S., 1945, Oklahoma
- CLARK, DONALD HATHAWAY, 1947.....Research Associate in the Engineering
Experiment Station
B.S., 1916, M.S.F., 1917, Washington
- CLARK, EARL FRANKLIN, 1933.....Associate in Physical Education
- CLARK, ERNEST DUNBAR, 1945.....Lecturer in Fisheries
B.A., 1908, Harvard; M.A., 1909, Ph.D., 1910, Columbia
- CLARK, HELEN IRENE, 1949.....Instructor in Physical Education
B.A., 1946, Washington; M.A., 1949, New York
- CLARK, KENNETH COURTRIGHT, 1948.....Assistant Professor of Physics
B.A., 1940, Texas; M.A., 1941, Ph.D., 1947, Harvard

- CLARK, LOIS, 1940.....Research Associate in Botany
B.A., 1907, M.A., 1910, Washington; Ph.D., 1919, Minnesota
- CLAY, JAMES RICHARD, 1948 (1949).....Research Associate in the Engineering
Experiment Station
A.B., 1939, Butler University; M.S., 1946, Purdue
- CLEIN, NORMAN WARD, 1947.....Clinical Instructor in Pediatrics
B.S., 1922, M.D., 1924, Northwestern
- CLEMENS, LOIS GERARD, 1947.....Associate in English
A.B., 1935, Nebraska
- CLOUD, KENNETH ALLEN, 1946.....Associate in Music
- CLOUGH, RAY WILLIAM, 1945.....Lecturer in Fisheries
A.B., 1908, A.M., 1909, Tufts College; Ph.D., 1922, Washington
- COCHRAN, LYALL BAKER, 1934 (1943).....Associate Professor of Electrical Engineering
B.S. in E.E., 1923, E.E., 1936, Washington
- CODLING, JOHN WILLIAM, 1947.....Lecturer in Nursing
Ph.C., 1929, B.S., 1932, Washington; M.D., 1942, Oregon
- COE, HERBERT EVERETT, 1935 (1947).....Senior Consultant in Surgery;
Lecturer in Nursing
A.B., 1904, M.D., 1906, Michigan
- COFFMAN, GRACE MAE, 1939.....Instructor in Nursing
B.A., 1920, C.P.H.N., 1929, Washington; R.N., 1925, Presbyterian Hospital (Chicago)
- COHEN, JAY DAVID, 1947.....Associate in Psychology
B.A., 1941, M.A., 1947, Mississippi
- COHEN, JOSEPH, 1932 (1941).....Assistant Professor of Sociology
B.A., 1925, M.A., 1927, Washington; Ph.D., 1935, Michigan
- COLCORD, JOSIAH EDWARD, Jr., 1949.....Instructor in Civil Engineering
B.S., 1947, Maine
- COLE, KENNETH CAREY, 1924 (1936).....Professor of Politics and Public Law;
Codirector of the Institute of Public Affairs
LL.B., 1924, Oxford; Ph.D., 1930, Harvard
- COLE, THOMAS RAYMOND, 1930.....Professor of Educational Administration and Supervision
Ph.B., 1902, M.A., 1903, LL.D., 1931, Upper Iowa
- COLE, WILLIAM DAVID, 1947.....Associate in Music
B.S., 1946, Illinois
- COLEMAN, CLARENCE ILES, 1949.....Clinical Instructor in Pedodontics
Ph.C., 1932, North Pacific College; D.M.D., 1946, Oregon
- COLEMAN, OMAR ANSON, 1949.....Associate in Political Science
B.A., 1948, New York
- COLLIER, IRA LEONARD, 1919.....Assistant Professor of Civil Engineering
B.S. in C.E., 1913, C.E., 1917, Washington
- COLLINS, JOHN DAVISON, 1947.....Clinical Instructor in Medicine
B.S., 1933, Washington; M.D., 1937, Northwestern
- COLLINS, ROBERT, 1948.....Instructor in Art
B.F.A., 1947, M.F.A., 1947, Cranbrook Academy of Art (Michigan)
- COLTON, AGNES LOUISE, 1941 (1947).....Assistant Professor of English
B.A., 1925, Whitman; M.A., 1928, Oregon; Ph.D., 1939, Washington
- COMISH, NEWEL WILLIAM, 1949.....Acting Assistant Professor of Marketing
B.S., 1947, Oregon
- COMITA, GABRIEL WILLIAM, 1950.....Associate in Zoology
B.S., 1937, College of St. Thomas (Minnesota); M.A., 1949, Minnesota
- COMPTON, DAVID WESLEY, 1949.....Clinical Associate in Surgery
B.S., 1937, Washington; M.S., 1941, Pennsylvania
- CONNOR, CAPT. FRANK WALTER, Jr., U.S.A., 1948.....Assistant Professor of
Military Science and Tactics
B.A., 1933, Wisconsin
- CONWAY, JOHN ASHBY, 1927 (1943).....Associate Professor of Drama
B.A., 1927, Carnegie Institute of Technology
- COOLEY, ROY HAROLD, 1949.....Associate in Psychology
B.S., 1948, Illinois
- COOMBS, HOWARD ABBOTT, 1934 (1949).....Professor of Geology
B.S., 1932, M.S., 1932, Ph.D., 1935, Washington
- COOPER, JOHN MARSHALL, 1950.....Associate Lecturer in Estate Planning
A.B., 1930, Stanford; LL.B., 1934, Washington

- COOPER, LEMUEL BROWNING, 1939 (1943) . . . Assistant Professor of Mechanical Engineering
B.S. in M.E., 1931, Washington
- CORBALLY, JOHN EDWARD, 1927 (1942) Professor of Secondary Education
and Director of Cadet Teaching
B.A., 1918, Whitworth; M.A., 1925, Ph.D., 1929, Washington
- CORNU, MAX DONALD, 1928 (1943) Associate Professor of English
LL.B., 1922, M.A., 1926, Ph.D., 1928, Washington
- COSTIGAN, GIOVANNI, 1934 (1948) Professor of History
B.A., 1926, B.Litt., 1930, M.A., 1930, Oxford; M.A., 1928, Ph.D., 1930, Wisconsin
- COURTNEY, DALE ELLIOT, 1949. Associate in Geography
B.A., 1940, Western Washington College of Education; B.A., 1947, Washington
- COVINGTON, DUANE MONROE, 1945. Instructor in Forestry
Resident Manager at Pack Forest
B.S.F., 1927, Washington
- COWLES, RALPH GANO, 1948. Associate in Humanistic-Social Studies
B.A., 1947, Washington
- COX, EDWARD GODFREY, 1911 (1947) Professor Emeritus of English;
Editorial Consultant of the Department of English
B.A., 1899, Wabash College; M.A., 1901, Ph.D., 1906, Cornell
- COX, ROBERT J., 1949. Associate in Speech
A.B., 1947, Seattle Pacific
- COX, TOM R., 1947. Associate in Mathematics
B.S., 1933, College of Idaho
- COX, WILLIAM EDWARD, 1919 (1923) Professor of Accounting
B.A., 1909, M.A., 1910, Texas
- CRAIN, RICHARD WILLSON, Sr., 1936 (1947) . . Assistant Professor of Mechanical Engineering
B.S. in E.E., 1930, B.S. in M.E., 1931, Colorado A. & M. College;
M.S. in M.E., 1946, Washington
- CRAMLET, CLYDE MYRON, 1920 (1948) Professor of Mathematics
B.S., 1916, Walla Walla; M.S., 1920, Ph.D., 1926, Washington
- CRAMPTON, JOSEPH HAMILTON, 1947. Clinical Assistant Professor of Medicine
B.S., 1938, Idaho; M.D., 1941, Vanderbilt
- CREEL, WILHELMINE SCHAEFFER, 1940 (1944) Assistant Professor of Music
B.A., 1946, Washington; B.Mus., 1927, M.Mus., 1929, American Conservatory of Music
(Chicago)
- CRAWFORD, SHIRLEY TEASDALE, 1950. Associate in Art
B.A., 1940, Washington
- CREIGHTON, SAMUEL ALLISON, 1949. Instructor in Pathology
B.Sc., 1930, University of New Brunswick; M.D., C.M., 1935, McGill;
LMCC, 1935, Canadian Medical Association
- CREORE, ALVIN EMERSON, 1940 (1947) Assistant Professor of Romance Languages
A.B., 1934, M.A., 1936, University of Rochester; Ph.D., 1939, Johns Hopkins
- CRITENDEN, ALDEN LARUE, 1947 (1949) Assistant Professor of Chemistry
B.S., 1942, Ph.D., 1947, Illinois
- CROSS, HARRIET, 1932 (1941) Assistant Professor of Nursing
R.N., 1921, Columbia Hospital (Wisconsin); B.S., 1925, Minnesota; C.P.H.N., 1938,
M.N., 1940, Washington
- CROSS, HARRY MAYBURY, 1943 (1949) Professor of Law
B.A., 1936, Washington State; LL.B., 1940, Washington
- CROSS, PAUL CLIFFORD, 1949. Professor of Chemistry and Chemical Engineering;
Executive Officer of the Departments of Chemistry and Chemical Engineering
B.S., 1928, Geneva College (Pennsylvania); M.S., 1930, Ph.D., 1932, Wisconsin
- CROUCH, MIRIAM JANE, 1947. Instructor in Nursing
A.B., 1939, Marietta College (Ohio); M.N., 1942, Western Reserve;
M.S., 1947, Boston University
- CROWELL, LAURA IRENE, 1949. Assistant Professor of Speech
B.A., 1929, South Dakota; M.A., 1940, Ph.D., 1948, Iowa
- CRUTCHFIELD, JAMES ARTHUR, Jr., 1949. Acting Assistant Professor of Economics
A.B., 1940, M.A., 1942, University of California at Los Angeles
- CRYSTAL, DEAN KNEELAND, 1947 (1948) Clinical Instructor in Surgery
B.S., 1936, Washington; B.A., 1938, Oxford; M.D., 1941, Johns Hopkins
- CULBERT, SIDNEY SPENCE, 1947. Associate in Psychology
B.A., 1943, Washington
- CURTIS, ELIZABETH LONG, 1930 (1947) Assistant Professor of Art
B.F.A., 1929, M.F.A., 1933, Washington

- CUSTIS, DONALD LAUREN, 1949. Clinical Associate in Anatomy
A.B., 1939, Wabash College, Indiana; M.B., 1942, M.D., 1943, Northwestern
- CUTLER, RUSSELL KELSEY, 1946 (1948). Associate Professor of Physical Education
B.Ed., 1930, University of California at Los Angeles; M.S., 1934, Oregon
- CUTTS, ROLLIN EDWARD, 1947 (1948). Clinical Assistant Professor of Pediatrics
B.S., 1926, M.B., 1927, M.D., 1928, Minnesota
- DAHL, SHERMAN ARDON, 1949. Associate in General Business
B.S., 1949, Washington
- D'AMELIO, MAJOR GEORGE LOUIS, 1946. Assistant Professor of Military
Science and Tactics
B.S., 1940, M.A., 1941, Wisconsin
- DANIELS, JOSEPH, 1911 (1923). Professor of Mining and Metallurgical Engineering
S.B., 1905, Massachusetts Institute of Technology; M.S., 1908, E.M., 1933, Lehigh
(Pennsylvania)
- DANILOFF, MITCHELL M., 1947. Associate in Slavic Languages
B.A., 1947, Washington
- DANKS, ALAN JOHN, 1949. Visiting Lecturer in Economics
B.A., 1937, M.A., 1938, Canterbury University College
- DART, JOHN OLNEY, 1949. Associate in Geography
B.A., 1946, Central Washington College of Education; M.A., 1948, Washington
- DASSOW, JOHN ALBERT, 1948. Lecturer in Fisheries
B.S., 1949, Washington
- DAUBEN, HYP JOSEPH, Jr., 1945. Assistant Professor of Chemistry
B.A., 1937, M.S., 1937, Ohio State; M.A., 1941, Ph.D., 1941, Harvard
- DAUGHERTY, RICHARD DEO, 1949. Acting Instructor in Anthropology
B.A., 1946, Washington
- DAVENNY, RICHARD DALE, 1949. Associate in Accounting, Management and Statistics
B.A., 1948, Washington
- DAVID, JEAN FERDINAND, 1936. Assistant Professor of Romance Languages
B.A., 1929, M.A., 1932, Saskatchewan; Ph.D., 1936, Johns Hopkins
- DAVIDSON, DANIEL SUTHERLAND, 1948 (1949). Professor of Anthropology
B.S., 1923, A.M., 1924, Ph.D., 1928, Pennsylvania
- DAVIES, ROBERTS JUDSON, 1947. Clinical Assistant Professor of Medicine
M.B., 1933, M.D., 1934, Minnesota
- DAVIS, ALANSON BEWICK, 1947 (1948). Instructor in Drama
B.A., 1947, Washington
- DAVIS, CLARENCE DANIEL, 1947. Clinical Associate in Physiology
and in Obstetrics and Gynecology
B.S., 1935, Massachusetts Institute of Technology; M.D., 1939, Johns Hopkins
- DAVIS, JOHN BAIRD, 1946 (1947). Acting Instructor in Art
B.A., 1936, M.A., 1937, Washington
- DAVIS, JOHN MACDOUGALL, 1946. Lecturer in Law
B.A., 1936, LL.B., 1940, Washington
- DAVIS, MERRELL REES, 1947. Assistant Professor of English
A.B., 1935, Whitman; M.A., 1937, Tufts; Ph.D., 1948, Yale
- DAY, CHARLES WARD, 1949. Associate in Obstetrics and Gynecology
B.S., 1939, Washington; M.D., 1942, Oregon
- DAY, EMMETT ELBERT, 1947 (1948). Assistant Professor of Mechanical Engineering
B.A., 1936, East Texas State Teachers College; B.S., 1945, M.S., 1947, Massachusetts
Institute of Technology
- deALVAREZ, RUSSELL R., 1948. Professor of Obstetrics and Gynecology; Executive
Officer of the Department of Obstetrics and Gynecology
B.S., 1933, M.D., 1935, M.S., 1940, Michigan
- DEAN, RUTH WHEWELL, 1949. Instructor in Nursing
B.N., 1936, Yale; M.A., 1941, Columbia
- DEERING, WILLIAM V. B., 1947. Clinical Instructor in Pediatrics
B.S., 1933, Washington; M.B., 1937, M.D., 1938, Northwestern
- DEHN, WILLIAM MAURICE, 1907 (1947). Professor Emeritus of Organic Chemistry;
Research Consultant in the Department of Chemistry
A.B., 1893, A.M., 1896, Hope College (Michigan); Ph.D., 1903, Illinois
- De HOLLANDER, WILLIAM H., 1949. Research Associate in Chemistry and
Chemical Engineering
B.S., 1946, Washington

- DEISHER, ROBERT WILLIAM, 1949..... Instructor in Pediatrics
A.B., 1941, Knox College; M.D., 1944, Washington University (St. Louis)
- De JONGH, EDWARD, 1949..... Acting Assistant Professor of Marketing
B.A., 1937, Oberlin; M.B.A., 1941, Harvard
- DEKKER, DAVID BLISS, 1948..... Instructor in Mathematics
A.B., 1941, California; M.S., 1943, Illinois Institute of Technology; Ph.D., 1948, California
- De LACY, ALLAN CLARK, 1946 (1947)..... Assistant Professor of Fisheries
B.S., 1932, M.S., 1933, Ph.D., 1941, Washington
- de la VEGA, ELIAS GAMALIEL, 1947..... Associate in Romance Languages and Literature
Bachiller, 1939, Colegio Nacional de Catamarca
- Del GIUDICE, FRANK, 1948..... Lecturer in Art
- De MARSH, QUIN BERNARD, 1947..... Assistant Professor of Anatomy
B.S., 1935, Washington; M.S., 1937, M.B., 1939, M.D., 1940, Northwestern
- DEMMEY, JOSEPH, 1928 (1934)..... Professor of Business Fluctuations and Real Estate;
Executive Officer of the Department of General Business
Ph.B., 1920, M.A., 1924, Chicago
- DeMOISY, RALPH GORDON, 1949..... Assistant Professor of Forestry
B.S., 1938, Utah State Agricultural College; M.F., 1946, Oregon State
- DENNY, GRACE GOLDENA, 1913 (1934)..... Professor of Home Economics
B.A., 1907, Nebraska; M.A., 1919, Columbia
- DENSMORE, HARVEY BRUCE, 1907 (1933)..... Professor of Greek
A.B., 1903, Oregon; A.B., 1907, Oxford
- de VRIES, MARY AID, 1921 (1939)..... Associate Professor of Physical Education
B.A., 1920, Wisconsin
- DEWEY, LEONARD A., 1946..... Clinical Instructor in Public Health and Preventive Medicine
B.S., 1928, M.D., 1928, Nebraska; C.P.H., 1935, D.P.H., 1939, Johns Hopkins
- DIETZ, ROBERT HENRY, 1947 (1948)..... Assistant Professor of Architecture
B.Arch., 1941, Washington; M.Arch., 1944, Massachusetts Institute of Technology
- DILLE, JAMES MADISON, 1936 (1941)..... Professor of Pharmacology;
Executive Officer, Department of Pharmacology
B.S., 1930, M.S., 1933, Nebraska; Ph.D., 1935, Georgetown; M.D., 1946, Illinois
- DILLE, RODGER SWAIN, 1948..... Clinical Associate in Pharmacology
Ph.C., 1931, B.S., 1932, M.S., 1933, Washington; B.M., 1938, M.D., 1939, Northwestern
- DIRSTINE, MORRIS JOHN, 1946..... Clinical Associate in Surgery
Ph.G., 1926, Washington State; B.S., 1932, Washington; M.D., 1937, Northwestern
- DITTA, MAJOR LOUIS GERALD, 1949..... Assistant Professor of Naval Science
B.A., 1940, St. Vincent College (Pennsylvania)
- DIXON, RAYMOND THOMAS, 1949..... Associate in Mechanical Engineering
B.S. in M.E., 1948, Washington
- DOBIE, EDITH, 1926 (1937)..... Associate Professor of History
B.A., 1914, Syracuse; A.M., 1922, Chicago; Ph.D., 1925, Stanford
- DOCTER, JACK MERTON, 1947 (1948)..... Lecturer in Nursing; Clinical Associate in Pediatrics
B.S., 1937, Washington; M.D., 1941, Columbia
- DODD, STUART CARTER, 1947..... Professor of Sociology; Director of the
Washington Public Opinion Laboratory
B.S., 1922, M.A., 1924, Ph.D., 1926, Princeton
- DOLCH, EDWARD WILLIAM, 1948..... Associate in General Engineering
B.S., 1946, Illinois
- DONALDSON, L. BRUCE, 1948..... Clinical Associate in Obstetrics and Gynecology
B.S., 1935, Northwestern; M.D., 1939, Michigan
- DONALDSON, LAUREN RUSSELL, 1935 (1948)..... Professor of Fisheries; Director of the
Applied Fisheries Laboratory
A.B., 1926, Intermountain Union College (Montana); M.S., 1931, Ph.D., 1939, Washington
- DONLON, MAJOR JAMES DAMIAN, Jr., 1946..... Assistant Professor of
Military Science and Tactics
A.B., 1935, M.B.A., 1939, Stanford
- DONOHUE, JERE WILLIAM, 1949..... Research Associate in Chemistry
B.A., 1949, Montana
- DORE, GEORGE DAVID, Jr., 1949..... Clinical Instructor in Oral Surgery
D.D.S., 1941, Northwestern
- DORLAND, EDISON GRAHAM, 1946..... Lecturer in Nursing
M.D., 1937, Northwestern
- DOUGHTY, JAMES WINFIELD, 1949..... Clinical Affiliate in Psychiatry
M.D., 1898, Main Medical School (Bowdoin College)

- DOUGLAS, HOWARD CLARK, 1941 (1943).....Assistant Professor of Microbiology
A.B., 1936, Ph.D., 1949, California
- DOUGLASS, CLARENCE EADER, 1939 (1945).....Assistant Professor of General Engineering
B.S., 1927, Washington State
- DOUGLASS, DAVID ROBERT, 1947.....Instructor in General Engineering
B.S. in A.E., 1946, Washington
- DRAKE, JOHN BEACH, 1948.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1921, Missouri; M.S., 1924, Washington State
- DRAPER, EDGAR MARIAN, 1925 (1936).....Professor of Secondary Education and Curriculum;
Executive Officer of the Department of In-Service Teacher Training
B.A., 1916, M.A., 1925, Ph.D., 1926, Washington
- DRAPER, OSCAR ELDRIDGE, 1920 (1923).....Lecturer in Accounting
- DRESSLAR, MARTHA ESTELLA, 1918 (1937).....Associate Professor of Home Economics
A.B., 1913, Southern California; B.S., 1917, Washington; M.S., 1918, Columbia
- DRUCK, MARILYN AUDREY, 1948.....Research Associate, Bureau of Business Research
B.B.A., 1945, Washington; M.B.A., 1946, Northwestern
- DUBY, RALPH WILLIAM, 1949.....Associate in English
B.A., 1941, M.A., 1949, Washington
- DUCHOW, ESTHER ALWINE, 1940.....Associate in Microbiology
B.S., 1934, Washington
- DUCKETT, MARGARET RUTH, 1947.....Instructor in English
A.B., 1926, Winthrop College (South Carolina); M.A., 1941, North Carolina
- DUDEK, EDMUND EMIL, 1948.....Assistant Professor of Psychology;
Director of the Bureau of Testing
A.B., 1935, M.A., 1936, Nebraska; Ph.D., 1948, Purdue
- DUDLEY, ELEANOR MARGUERITE, 1948.....Instructor in Nursing
B.S., 1944, Massachusetts; M.N., 1947, Yale
- DUDLEY, HOMER DANIEL, 1947.....Senior Consultant in Surgery
M.D., 1902, Northwestern
- DUNCAN, JOHN ALEXANDER, 1948.....Consultant in Surgery
B.S., 1931, Washington; M.D., C.M., 1933, McGill (Montreal)
- DUNCAN, WILLIAM RAYMOND, 1948.....Clinical Instructor in Orthopedics
M.D., C.M., 1938, McGill (Montreal)
- DUNLOP, HENRY ADAM, 1931 (1947).....Lecturer in Fisheries
B.A., 1919, M.A., 1922, British Columbia
- DUNNINGTON, RICHARD ARTHUR, 1950.....Research Associate in Accounting,
Management and Statistics
B.A., 1943, Washington
- Du PEN, EVERETT GEORGE, 1945 (1947).....Assistant Professor of Art
B.F.A., 1937, Yale
- DURAND, JAY ISAAC, 1947.....Senior Consultant in Pediatrics
B.A., 1902, M.D., 1905, Minnesota
- DUSENBERRY, BEA BOE, 1946 (1947).....Associate in English
A.B., 1939, Whitman; M.A., 1946, Washington
- DUTTON, HARRY HORACE, 1938.....Lecturer in Nursing; Clinical Affiliate in Psychiatry
M.D., 1914, Vermont
- DVORAK, AUGUST, 1923 (1937).....Professor of Education; Director of Admissions Research
B.A., 1920, Ph.D., 1923, Minnesota
- DWINNELL, JAMES HERBERT, 1941 (1945).....Assistant Professor of Aeronautical Engineering
B.S. in A.E., 1939, Washington; M.S. in A.E., 1949, California Institute of Technology
- DYAR, MARGARET THEKLA, 1947.....Instructor in Botany
B.S., 1943, M.S., 1945, Washington; Ph.D., 1947, Cornell University
- DYE, LT. COMDR. IRA, U.S.N., 1947.....Assistant Professor of Naval Science
- EARLE, FRANCES M., 1931 (1941).....Associate Professor of Geography
B.A., 1918, Winthrop College (South Carolina); M.S., 1926, Columbia; Ph.D., 1929, George Washington
- EASTMAN, AUSTIN VITRUVIUS, 1924 (1942).....Professor of Electrical Engineering;
Executive Officer of the Department of Electrical Engineering
B.S. in E.E., 1922, M.S. in E.E., 1929, Washington
- EASTMAN, FRED SCOVILLE, 1927 (1943).....Professor of Aeronautical Engineering;
Executive Officer of the Department of Aeronautical Engineering
B.S. in E.E., 1925, Washington; M.S., 1929, Massachusetts Institute of Technology
- EASTON, DEXTER MORGAN, 1947.....Instructor in Zoology
A.B., 1943, Clark University; M.A., 1944, Ph.D., 1947, Harvard

- EASTWOOD, EVERETT OWEN, 1905 (1947) . . . Professor Emeritus of Mechanical Engineering;
Research Consultant
C.E., 1896, B.S., 1897, A.B., 1899, A.M., 1899, Virginia;
B.S., 1902, Massachusetts Institute of Technology
- EBY, EDWIN HAROLD, 1927 (1947) . . . Professor of English
Ph.B., 1923, Chicago; Ph.D., 1927, Washington
- ECKELMAN, ERNEST OTTO, 1911 (1947) . . . Professor Emeritus of Germanic Literature;
Librarian in Germanics
B.A., 1897, Northwestern; B.L., 1898, Wisconsin; Ph.D., 1906, Heidelberg
- EDMINSTER, ROBERT REGAN, 1948 . . . Associate in Economics
B.A., 1948, Washington
- EDMONDSON, WALLIS THOMAS, 1949 . . . Assistant Professor of Zoology
B.S., 1938, Ph.D., 1942, Yale
- EDMONDS, LOUIS HENRY, 1948 . . . Consultant in Orthopedics
A.B., 1922, Hampden-Sidney (Virginia); M.D., 1928, Virginia
- EDMUNDSON, CLARENCE SINCLAIR, 1920 . . . Associate in Physical Education
B.S.A., 1910, Idaho
- EDWARDS, ALLEN L., 1944 (1948) . . . Professor of Psychology
B.A., 1937, Central College (Chicago); M.A., 1938, Ohio State; Ph.D., 1940, Northwestern
- EDWARDS, CHARLES FREDERICK, 1950 . . . Associate Lecturer in Estate Planning
B.S., 1930, Illinois
- EDWARDS, THEODORA, 1948 . . . Associate in Chemistry
B.A., 1945, Willamette
- EDWARDS, THORNE NOBLE, 1949 . . . Associate in Art
- EGGERS, HAROLD EVERETT, JR., 1948 . . . Clinical Associate in Anatomy;
Clinical Associate in Urology
B.S., 1933, M.D., 1937, Nebraska
- EGGERS, ROLF VAN KERVAl, 1942 (1947) . . . Clinical Instructor in Medicine;
Lecturer in Nursing
B.A., B.S., 1930, North Dakota; M.D., 1933, Chicago
- EICHINGER, WALTER A., 1936 (1945) . . . Assistant Professor of Music
B.Mus., 1932, M.Mus., 1933, Northwestern
- EKLIND, HERINA IDA, 1946 . . . (Hon.) Assistant Professor of Nursing
R.N., 1917, Ravenswood Hospital (Chicago)
- EKSE, MARTIN INGVALD, 1948 . . . Assistant Professor of Civil Engineering
B.S., 1932, South Dakota State College; M.S., 1948, Wisconsin
- ELDER, JAMES W., JR., T/SGT., 1949 . . . Instructor in Air Science and Tactics
- ELDRIDGE, RUTH VIRGINIA, 1947 . . . Associate in English
A.B., 1939, Central Washington College of Education
- ELLERBROOK, LESTER DAMON, 1946 (1949) . . . Associate Professor of Pathology
A.B., 1932, Hope College (Michigan); Ph.D., 1936, New York University
- ELMENDORF, WILLIAM WELCOME, 1946 (1947) . . . Instructor in Anthropology
B.A., 1934, M.A., 1935, Washington
- ELWOOD, EVELYN ROSE, 1949 . . . Instructor in Nursing
B.S., 1949, Columbia
- EMERSON, BETTINA MEYERHOFF, 1948 . . . Clinical Associate in Pediatrics
M.D., 1943, Johns Hopkins
- 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
- EMMEL, HARRY ELWIN, 1948 . . . Clinical Associate in Anatomy and Orthopedics
B.A., 1936, Willamette; M.D., 1940, Oregon
- EMORY, CAPTAIN CAMPBELL DALLAS, U.S.N., 1947 . . . Professor of Naval Science
B.S., 1921, U. S. Naval Academy
- ENGEL, ERNEST DIRCK, 1934 (1949) . . . Associate Professor of General Engineering;
Assistant to the Dean of the College of Engineering
B.S. in E.E., 1930, Washington
- ENGLE, NATHANAEL HOWARD, 1941 . . . Professor of Business Research;
Director of Bureau of Business Research
B.A., 1925, M.A., 1926, Washington; Ph.D., 1929, Michigan
- ENQUIST, LUCILLE ENGDAHL, 1944 (1946) . . . Instructor in Speech
B.A., 1937, M.A., 1941, Washington
- ERICKSON, HARVEY D., 1947 . . . Associate Professor of Forest Products
B.S., 1933, B.S. 1934, M.S., 1936, Ph.D., 1937, Minnesota

- ERIKSEN, GOSTA, 1942.....Associate in Physical Education
B.A., 1939, Washington
- ERIKSEN, NILS, 1949.....Research Associate in Pathology
B.S., 1939, Ph.D., 1944, Washington
- ERLICH, VICTOR, 1948.....Assistant Professor of Slavic Languages and Literature
M.A., 1937, Free Polish University (Warsaw)
- ESPEDAL, BIRGER ROLF, 1947.....Lecturer in Business Law
A.B., 1941, LL.B., 1947, Washington
- ESPER, ERWIN ALLEN, 1927 (1934).....Professor of Psychology
B.A., 1917, M.A., 1920, Ph.D., 1923, Ohio State
- ESTEVEZ, NELSON GERALDO, 1946 (1949).....Instructor in Romance Languages and Literature
B.A., 1945, California
- ETHEL, GARLAND ORAL, 1927 (1947).....Assistant Professor of English
B.A., 1923, M.A., 1927, Ph.D., 1928, Washington
- EVANS, CHARLES ALBERT, 1946.....Professor of Microbiology;
Executive Officer of Department of Microbiology
B.S., 1935, B.M., 1936, M.D., 1937, Ph.D., 1942, Minnesota
- EVANS, DONALD GUTHERIE, 1947.....Clinical Instructor in Pediatrics
B.S., 1926, M.D., 1929, Iowa; M.P.H., 1939, D.P.H., 1940, Johns Hopkins
- EVANS, ELEANOR, 1944 (1946).....Assistant Professor of Nursery Education and
Acting Director of Nursery School
B.S., 1934, Illinois; M.E., 1936, Winnetka
- EVANS, ERNEST MERVYN, 1949.....Clinical Instructor in Medicine
A.B., 1935, Haverford College; M.D., 1939, Pennsylvania
- EVANS, MERRILL De VON, 1946.....Lecturer in Nursing
A.B., Kansas State Teachers College; M.D., Kansas
- EVEREST, HAROLD PHILIP, 1940 (1945).....Professor of Journalism;
Director, School of Journalism
B.A., 1938, Washington
- EVERETT, NEWTON BENNIE, 1946 (1948).....Associate Professor of Anatomy
B.S., 1937, M.S., 1938, North Texas State College; Ph.D., 1942, Michigan
- EVOY, MATTHEW HARPUR, 1948.....Clinical Associate in Surgery
M.D., 1941, St. Louis University
- EWING, ETHEL ELIZABETH, 1947.....Assistant Professor of Far Eastern Education
B.A., 1928, Muskingum College; M.A., 1936, Radcliffe; Ph.D., 1944, Cornell University
- FAIRBROOK, JOHN GRAY, 1949.....Associate in General Engineering
B.S., 1945, Washington
- FALKNER, JUDSON FAHNESTOCK, 1936.....Professor of Law; Dean of the School of Law
B.S., 1917, LL.B., 1919, Washington
- FANG, CHAO-YING, 1949.....Research Associate in the Far Eastern and Russian Institute
B.S., 1928, Yenching University
- FANG, LIEN-CHI TU, 1949.....Research Associate in the Far Eastern and Russian Institute
B.A., 1924, M.A., 1926, Yenching University
- FARAGHER, THOMAS ROBERT, 1950.....Lecturer in Business Finance, Banking and Insurance
B.B.A., 1934, Washington
- FARAH, ALFRED EMIL, 1947 (1949).....Associate Professor of Pharmacology
B.A., 1937, M.D., 1940, American University of Beirut (Lebanon)
- FARIS, ROBERT E. LEE, 1948.....Professor of Sociology
Ph.B., 1928, M.A., 1930, Ph.D., 1931, Chicago
- FARNER, LLOYD MARVIN, 1946.....Clinical Assistant Professor of Public Health
and Preventive Medicine
A.B., 1930, M.D., 1936, C.P.H., 1937, California
- FARQUHARSON, FREDERICK BURT, 1925 (1940).....Professor of Civil Engineering;
Director of Engineering Experiment Station
B.S. in M.E., 1923, M.E., 1927, Washington
- FARWELL, GEORGE WELLS, 1948.....Assistant Professor of Physics
B.S., 1941, Harvard; Ph.D., 1948, Chicago
- FARWELL, RAYMOND FORREST, 1921 (1940).....Professor of Transportation
B.A., 1920, California; M.A., 1926, Washington
- FAULKNER, DONALD ROSS, 1949.....Clinical Instructor in Pedodontics
B.B.A., 1926, Washington; B.S., 1948, D.M.D., 1948, Oregon
- FEEK, IRJA KNUTE, 1948.....Instructor in Nursing
R.N., 1935, Swedish Hospital (Seattle); B.S., 1948, Washington
- FEI, EDWARD, 1947.....Associate in Economics
B.A., 1941, St. John's University (Shanghai); M.A., 1948, Washington

- FELTON, VIRGINIA ELLEN, 1943.....Instructor in Nursing
R.N., 1936, Toronto General Hospital; B.S., 1943, Washington
- FERGUSON, EVELYN VIOLET, 1948.....Acting Instructor in Physical Education
B.S., 1927, Washington
- FERGUSON, GRACE BEALS, 1941 (1945).....Professor of Medical Social Work
A.B., 1917, Minnesota; M.A., 1930, Indiana
- FERNALD, ROBERT LESLIE, 1946 (1947).....Assistant Professor of Zoology
A.B., 1937, Monmouth College (Illinois); Ph.D., 1941, California
- FETTERLY, LLOYD COCHRANE, 1947 (1948).....Instructor in Chemical Engineering
B.S. in Chem.E., 1940, M.S. in Chem.E., 1941, Washington
- FEY, LOUIS D., 1947.....Clinical Instructor in Medicine
B.S., 1934, Washington; M.B., 1938, M.D., 1939, Northwestern
- FIELDS, CALVIN EUGENE, 1949.....Associate in Naval Science
- FINCH, CLEMENT A., 1949.....Associate Professor of Medicine
B.S., 1936, Union College; M.D., 1941, Rochester
- FINE, CHARLES SANFORD, 1948.....Clinical Instructor in Obstetrics and Gynecology
M.D., 1937, Toronto
- FINLAYSON, BLISS, L., 1948.....Clinical Associate in Anatomy
B.A., 1928, Brigham Young University; M.D., 1933, Jefferson Medical College (Pennsylvania)
- FINLEY, JARVIS MARION, 1948.....Associate in Sociology
B.A., 1941, Arkansas; M.A., 1947, Texas
- FINLEY, JOHN A., 1946.....Instructor in Metallurgical Engineering
B.S. in Met.E., 1939, Michigan College of Mines
- FIORINO, JOHN FRANCIS, 1948.....Clinical Associate in Obstetrics and Gynecology
B.S., 1924, M.D., 1926, St. Louis University
- FIREBAUGH, JOSEPH JESSE, 1949.....Associate in English
B.A., 1936, Colorado; M.A., 1938, Duke
- FISCHER, LOUIS, 1929 (1945).....Professor of Pharmaceutical Chemistry
B.S., 1926, Ph.C., 1926, M.S., 1928, Ph.D., 1933, Washington
- FISCHNALLER, JOSEPH ERHART, 1949.....Clinical Instructor in Medicine
B.S., 1938, Washington; M.B., 1942, M.D., 1943, M.S., 1947, Northwestern
- FISH, ANDREW, 1947.....Acting Professor of History
B.A., 1920, M.A., 1921, Oregon; Ph.D., 1923, Clark University
- FITZ, LT. HOLLIS WATSON, USN, 1948.....Assistant Professor of Naval Science
B.S., 1928, San Diego State College; M.S., 1938, Southern California
- FITZMAURICE, BERTRAND T., 1946.....Clinical Associate in Anatomy
B.S., 1930, Washington; M.D., 1934, Northwestern
- FLANAGAN, MAJOR ANDREW PAUL, 1950.....Assistant Professor of Military
Science and Tactics
A.B., 1932, California
- FLEAGLE, ROBERT GUTHRIE, 1948.....Assistant Professor of Meteorology
A.B., 1940, Johns Hopkins; M.S., 1944, Ph.D., 1949, New York University
- FLECK, STEPHEN, 1949.....Instructor in Psychiatry
M.D., 1940, Harvard
- FLEEGE, HERBERT W., 1948 (1949).....Clinical Instructor in Pedodontics
D.D.S., 1948, Iowa
- FLEISCHHAUER, JANET ELLEN, 1949.....Associate in Romance Languages
B.A., 1945, Oregon; A.M., 1946, Oberlin
- FLEMING, JULIA, 1948.....Instructor in Nursing
R.N., 1931, St. Anthony School of Nursing (Denver); B.S., 1947, Colorado
- FLETCHER, THOMAS LLOYD, 1948.....Associate Research Chemist, Pulp Mills
Waste Research Project
A.B., 1937, M.A., 1938, Clark University; Ph.D., 1949, Wisconsin
- FLOERER, ROBERT EMERSON, 1948.....Clinical Associate in Surgery
B.S., 1938, Western Kentucky State Teachers College; M.D., 1941, University of Louisville
- FLOTHOW, PAUL G., 1940.....Lecturer in Nursing
B.S., 1921, Nebraska; M.D., 1923, Pennsylvania; M.S., 1927, Minnesota
- FLOYD, MARGARET, 1948.....Associate in General Business
B.A., 1948, Washington
- FLOYD, MYRTLE LEE, 1948.....Instructor in Nursing
R.N., 1932, St. Luke's Hospital (Florida); B.S., 1943, Florida
- FOLSOM, TYLER CLEVELAND, JR., 1949.....Clinical Instructor in Oral Surgery
B.S., 1945, D.D.S., 1947, Northwestern

- FONG, CONRAD T. O., 1949.....Research Associate in Pathology
B.S., 1939, Hawaii; Ph.D., 1946, California Institute of Technology
- FOOTE, EARLE GARVIN, 1947.....Instructor in Mechanical Engineering
S.B., 1942, S.M., 1946, Massachusetts Institute of Technology
- FOOTE, HOPE LUCILE, 1923 (1948).....Professor of Art
A.B., 1920, Iowa State Teachers College; M.A., 1923, Columbia
- FORBES, ROBERT D., 1947.....Senior Consultant in Surgery
M.D., C.M., 1903, McGill
- FORDON, JOHN VIVIAN, 1935 (1946).....Lecturer in Accounting
B.B.A., 1931, M.B.A., 1934, Washington; C.P.A., 1949, State of Washington
- FORE, CAPT. CHARLES H., U.S.A., 1948...Assistant Professor of Military Science and Tactics
B.A., 1939, Kansas
- FORSBERG, RUTH ELLEN, 1947.....Instructor in Nursing
B.S., 1918, Rockford College (Illinois)
- FOSTER, DONALD ISLE, 1949.....Research Associate in the Bureau of Business Research
A.B., 1947, M.B.A., 1949, Stanford
- FOSTER, ROBERT FRANCIS, 1948.....Clinical Assistant Professor of Medicine
B.S., 1929, M.D., 1930, Northwestern
- FOUNTAIN, JOHN HORACE, 1949.....Clinical Instructor in Public Health
and Preventive Medicine
B.S., 1929, M.D., 1929, Georgetown; M.P.H., 1942, Harvard
- FOX, KATHERINE S., 1945 (1948).....Assistant Professor of Physical Education
B.S., 1938, Washington; M.S., 1943, Oregon
- FOXWORTHY, LAUREL RAE, 1949.....Clinical Associate in Surgery
M.S., 1937, M.D., 1939, Indiana
- FRANCIS, BYRON FRANKLIN, 1940 (1947).....Clinical Professor of Medicine
B.S., 1922, Washington; M.D., 1926, Washington University (St. Louis)
- FRANCIS, FREDERICK HENDERSON, 1949.....Clinical Instructor in Oral Surgery
D.D.S., 1936, Northwestern
- FRANKLIN, H. CHARLES, 1948.....Clinical Assistant in Obstetrics and Gynecology
B.A., 1934, Grinnell College; M.D., 1941, Washington University (St. Louis);
M.S., 1947, Tennessee
- FRANZKE, ALBERT LEONARD, 1936 (1939).....Associate Professor of Speech
B.A., 1916, M.A., 1923, Lawrence
- FRASER, EMERY JAMES, 1949.....Clinical Associate Professor of Orthodontics
D.D.S., 1924, Northwestern
- FREEMAN, ALLETTA GILLETTE, 1912 (1950).....Assistant Professor (Retired) of English
A.B., 1907, Smith; M.A., 1911, Washington
- FREEMAN, VICTOR JULIUS, 1947.....Instructor in Public Health and Preventive Medicine
B.A., 1941, British Columbia; M.D., 1945, Toronto
- FREIDINGER, ARTHUR WILLIAM, 1949.....Clinical Instructor in Psychiatry
A.B., 1939, Oberlin; M.D., 1943, Western Reserve
- FREIN, PIERRE JOSEPH, 1903 (1947).....Professor Emeritus of Romance Languages
A.B., 1892, Williams College (Massachusetts); Ph.D., 1899, Johns Hopkins
- FRENCH, GRACE MARIAN, 1947.....Research Associate in the Graduate School
B.A., 1945, Maryland
- FROST, VERNON R., 1945 (1946).....Associate Professor of Journalism
B.A., 1926, M.A., 1949, Washington
- FRYE, THEODORE CHRISTIAN, 1903 (1947).....Professor Emeritus of Botany;
Research Consultant in the Department of Botany
B.S., 1894, Illinois; Ph.D., 1902, Chicago
- FULLER, RICHARD EUGENE, 1930 (1948).....Professor of Geology
Ph.B., 1921, Yale; B.S., 1924, M.S., 1925, Ph.D., 1930, Washington;
LL.D., 1944, Washington State
- FULLER, STEVEN D., 1946 (1948).....Instructor in Art
B.A., 1939, M.F.A., 1948, Washington
- GALLAGHER, JOHN WILFRED, 1949.....Assistant Professor of Periodontology
D.M.D., 1934, Oregon
- GALLAGHER, MARIAN GOULD, 1944 (1948).....Associate Professor of Law and Law Librarian
B.A., 1935, LL.B., 1937, B.A. in L.S., 1939, Washington
- GALLOWAY, ROY FRANKLIN, 1949.....Instructor in Air Science and Tactics
- GANNON, JOSEPH SANFORD, 1950.....Associate in Speech
B.A., 1942, Washington
- GANNON, MARGARET ELIZABETH, 1949..Instructor in Nutrition in the Child Health Center
B.A., 1932, Montana

- GANZER, VICTOR MARTIN, 1947 (1949)..... Associate Professor of Aeronautical Engineering
B.A., 1933, Augustana College (Illinois); B.S. in A.E., 1941, Washington
- GARBER, DAVID HARRISON, 1948..... Instructor in Physics
A.B., 1940, A.M., 1941, Pennsylvania
- GARCIA-PRADA, CARLOS, 1925 (1939)..... Professor of Spanish
Ph.B., 1918, Colegio del Rosario (Bogota); M.A., 1924, Michigan;
Ph.D., 1929, Universidad Nacional (Bogota)
- GARFIELD, VIOLA EDMUNDSON, 1937 (1945)..... Assistant Professor of Anthropology
B.A., 1928, M.A., 1931, Washington; Ph.D., 1939, Columbia
- GATES, CHARLES MARVIN, 1936 (1943)..... Associate Professor of History
B.A., 1926, Yale; M.A., 1928, Harvard; Ph.D., 1934, Minnesota
- GEBALLE, RONALD, 1946..... Assistant Professor of Physics
B.S., 1938, M.A., 1940, Ph.D., 1943, California
- GEHRING, RICHARD WILLIAM, 1950..... Clinical Instructor in Fixed Partial Dentures
B.S., 1944, Michigan State Normal College; D.D.S., 1948, M.S., 1949, Michigan
- GEISMANN, LIEUT. GUNTER, 1949..... Assistant Professor of Naval Science
B.A., 1942, Washington
- GEISSMAR, ELSE JOHANNA-MARIE, 1947..... Instructor in Piano
L.R.A.M., 1937, Royal Academy, London; M.Mus., 1944, Michigan
- GERAGHTY, THOMAS PETER, 1947..... Clinical Instructor in Medicine
B.S., 1934, Washington; M.D., 1939, Oregon
- GERALD, CURTIS FRANKLIN, 1947..... Assistant Professor of Chemical Engineering
B.S., 1936, Iowa State College; M.S., 1938, Cincinnati; Sc.D., 1941, Massachusetts
Institute of Technology
- GERMAN, WILLIAM MYNDERT, 1946 (1949)..... Clinical Assistant Professor of
Fixed Partial Dentures
B.S., 1943, D.D.S., 1943, Southern California
- GERSHEVSKY, NOAH DAVID, 1943 (1947)..... Assistant Professor of Russian Language
B.S. in Met., 1930, Montana School of Mines
- GERSHUN, THEODORE LEONARD, 1948..... Instructor in Mechanical Engineering
B.S. in M.E., 1948, Iowa
- GESSEL, STANLEY PAUL, 1948..... Instructor in Forest Soils
B.S., 1939, Utah State Agricultural College
- GIBBARD, DONALD CHARLES, 1949..... Associate in Music
B.A., 1947, M.A., 1948, Washington
- GIEDT, WALVIN ROLAND, 1946..... Clinical Instructor in Public Health and
Preventive Medicine
B.S., 1933, South Dakota; M.D., 1937, Rush Medical College (Chicago);
M.P.H., 1941, Johns Hopkins
- GIFFORD, GUY CHARLES, Jr., 1949..... Associate in Accounting, Management and Statistics
B.A., 1948, Washington
- GILBERT, HOWARD IRA, 1949..... Clinical Instructor in Dental Materials
D.M.D., 1917, Oregon
- GILBERT, YOWLAND DEWITT, 1949..... Instructor in Mechanical Engineering
B.I.E., 1943, Ohio State
- GILL, DOROTHY, 1947..... Clinical Instructor in Medicine
B.S., 1931, M.S., 1932, Washington; M.D., 1938, Washington University (St. Louis)
- GILLINGHAM, JOHN BENTON, 1947..... Assistant Professor of Economics;
Assistant Director, Institute of Labor Economics
A.B., 1939, Washington State; M.A., 1941, Wisconsin
- GISWOLD, WILLIAM ROBERT, 1949..... Clinical Instructor in Fixed Partial Dentures
D.D.S., 1939, Minnesota
- GITLER, ROBERT LAURENCE, 1946..... Associate Professor of Librarianship;
Director of the School of Librarianship
A.B., 1930, Certificate in Librarianship, 1931, California; M.S., 1939, Columbia
- GLENN, DAVID LEONARD, Jr., 1946 (1948)..... Instructor in General Engineering
B.S. in C.E. and N.S., 1945, Washington
- GLICK, ROBERT MAX, 1948..... Instructor in Civil Engineering
B.S. in C.E., 1944, California
- GLICKFELD, MORRIS DAVID, 1949..... Acting Assistant Professor of Economics
A.B., 1941, California
- GLYNN, DOROTHY ELIZABETH, 1948..... Assistant Professor of Nursing
B.A., 1926, Colorado School of Education; R.N., 1932, Kahler Hospital (Minnesota)
- GOETSCH, EDWARD JOSEPH, Jr., 1948..... Associate in Mechanical Engineering
B.S. in M.E., 1945, Illinois Institute of Technology

- GOFORTH, EUGENE GEORGE, 1948.....Clinical Instructor in Psychiatry
B.S., 1938; M.D., 1941, Illinois
- GOGGIO, CHARLES, 1920 (1936).....Professor of Romance Languages
A.B., 1910, Harvard; A.M., 1914, Ph.D., 1919, Wisconsin
- GOLDBERG, LEONARD D., 1947.....Assistant Professor of Business Law
A.B., 1943, J.D., 1945, Chicago
- GOLDBLATT, ALFRED LAURENCE, 1950.....Lecturer in Marketing
B.A., 1928, Washington
- GOODMAN, JAMES JACOB, 1950.....Lecturer in Nursing
B.A., 1943, Boston; M.D., 1945, Middlesex University
- GOODRICH, FOREST JACKSON, 1914 (1934).....Professor of Pharmacognosy;
Dean of the College of Pharmacy
Ph.C., 1913, B.S., 1914, M.S., 1917, Ph.D., 1927, Washington
- GOODSPEED, GEORGE EDWARD, 1919 (1934).....Professor of Geology;
Executive Officer of the Department of Geology
B.S. in Min.E., 1910, Massachusetts Institute of Technology
- GORDON, GUY GILBERT, 1949.....Associate in Accounting, Management and Statistics
- GORMLEY, GENEVA JEFFERS, 1948.....Instructor in Speech
B.A., 1944, M.A., 1947, Washington
- GOSE, J. GORDON, 1946.....Professor of Law
B.A., 1926, Whitman; LL.B., 1928, Washington
- GOULD, FLORENCE JONES, 1948.....Instructor in English
A.B., 1928, M.A., 1931, Oregon
- GOWEN, HERBERT HENRY, 1909 (1944).....Professor Emeritus of Oriental Studies
D.D., 1912, Whitman
- GOWEN, LANCE EDWARD, 1924 (1937).....Professor of Architecture
B.A. in Arch., 1916, M.A. in Arch., 1921, Gr. Arch., 1922, California
- GRAALFS, MARILYN HELFRON, 1949.....Associate in Sociology
B.A., 1946, Mills College; M.A., 1949, Washington
- GRAF, HUBERT ARTHUR, 1936.....Associate in Music
- GRATZER, LOUIS BERNARD, 1947.....Research Associate in Wind Tunnel
B.S. in A.E., 1944, Washington
- GRAVES, VICTOR R., 1950.....Associate Lecturer in Estate Planning
- GRAY, FLORENCE IRENE, 1945 (1949).....Research Associate in Nursing
B.S.N., 1945, Washington
- GRAY, MARGARET LUCILE, 1945.....Instructor in Nursing
B.S., 1943, Washington
- GRAY, ROBERT SIMPSON, 1939 (1947).....Instructor in Drama
B.A., 1936, M.A., 1938, Washington
- GRAYUM, HELEN STOLTE, 1947 (1948).....Instructor in Speech
A.B., 1933, Nebraska State Teachers College (Chadron, Nebraska); M.A., 1935, Iowa
- GREEN, ALVIN WARREN, 1947.....Instructor in Public Health and Preventive Medicine;
Sanitary Engineer
B.S. in C.E., 1940, Iowa
- GREEN, DANIEL M., 1946.....Associate Professor of Experimental Medicine and Therapeutics
A.B., 1931, Fordham; M.S., 1935, M.D., 1938, New York University
- GREEN, MILTON DOUGLAS, 1945.....Professor of Law
B.A., 1926, J.D., 1928, Michigan; LL.M., 1938, Jur. Sc.D., 1944, Columbia
- GREGORY, HOMER EWART, 1920 (1933).....Professor of Accounting
A.B., 1914, Washington State; M.A., 1917, Chicago
- GREGORY, NORMAN WAYNE, 1946 (1947).....Assistant Professor of Chemistry
B.S., 1940, M.S., 1941, Washington; Ph.D., 1943, Ohio State
- GRIFFITH, DUDLEY DAVID, 1924 (1927).....Professor of English
B.A., 1903, Simpson College (Iowa); Ph.D., 1916, Chicago
- GRIFFITH, ROBERT LELAND, 1948.....Clinical Instructor in Medicine
B.A., 1932, Alabama; M.D., 1936, Harvard
- GRIFFITHS, KEITH S., 1947.....Associate in Sociology
B.A., 1947, Washington
- GRILL, LAURETTA MARKUS, 1949.....Acting Assistant Professor in Graduate School of
Social Work
B.A., 1931, Wisconsin; M.S.S., 1932, Smith College
- GRIMSHAW, AUSTIN, 1949.....Professor of Management; Dean of the College of
Business Administration
S.B. in C.E., 1927, M.B.A., 1934, D.C.S., 1938, Harvard

- GRISWOLD, MANZER JOHN, 1946. Associate in the Washington Public Opinion Laboratory
B.S., 1940, Montana; M.A., 1947, Washington
- GRONDAL, BROR LEONARD, 1913 (1929)..... Professor of Forest Products
B.A., 1910, D.Sc., 1943, Bethany College (Kansas); M.S.F., 1913, Washington
- GROSSCUP, BENJAMIN CHARLES, Ja., 1949..... Research Associate in the Bureau of
Governmental Research and Services
A.B., 1948, Wittenberg College
- GROVES, ELIZABETH ALICE, 1945..... Assistant Professor of Librarianship
B.A., 1929, British Columbia; B.S. in L.S., 1930, Certificate in Librarian Work
for Children, 1931, Washington
- GRYTBAK, MARGIT H., 1948..... Clinical Associate in Pediatrics;
Director of the Child Health Center
B.S., 1930, B.M., 1932, M.D., 1933, Minnesota
- GUBERLET, MURIEL LEWIN, 1943 (1946)..... Instructor in English
A.B., 1910, Bethany College (Kansas); A.M., 1928, Washington
- GUIDON, MICHAEL, III, 1946 (1947)..... Instructor in Mechanical Engineering
B.S. in M.E., 1942, Lehigh
- GUIGUET, JEAN MARCEL, 1949..... Assistant Professor of French
B.A., 1931, University de Lyon; Agregation de Lettres, 1939, Sorbonne
- GULLIKSON, ALBERT CLARENCE, 1942 (1947)..... Assistant Professor of General Engineering
B.S. in M.E., 1924, M.E., 1938, Washington
- GUNN, ELIZABETH (McCain), 1946..... Assistant Professor of Physical Education
B.S., 1921, Washington; M.D., 1927, Oregon
- GUNTHER, ERNA, 1923 (1941)..... Professor of Anthropology; Director of the Museum;
Executive Officer, Department of Anthropology
A.B., 1919, Barnard; A.M., 1920, Ph.D., 1928, Columbia
- GUSTAFSON, PAUL VICTOR, 1948..... Assistant Professor of Microbiology
B.S., 1936, Whitworth; M.S., 1937, Ph.D., 1942, Illinois; M.D., 1947, Chicago
- GUTHRIE, JOHN De MOTT, 1950..... Clinical Instructor in Fixed Partial Dentures
Executive Officer of Academic Personnel
B.A., 1907, M.A., 1910, Nebraska; Ph.D., 1912, Pennsylvania; LL.D., 1946, Nebraska
- GUTHRIE, JOHN De MOTT, 1950..... Clinical Instructor in Fixed Partial Dentures
D.M.D., 1928, Oregon
- GUY, MAY BORQUIST, 1948..... Clinical Associate in Pediatrics
A.B., 1923, Reed College; M.D., 1932, Cornell University; M.P.H., 1938, Harvard
- GUY, PERCY F., 1947..... Clinical Instructor in Pediatrics
M.D., 1922, Michigan; M.P.H., 1938, Harvard
- HAAGA, AGNES MARIE, 1947..... Instructor in Drama
B.A., 1936, Siena College (Tennessee)
- HAASE, MYRTLE ELIZABETH, 1947..... Instructor in Nursing
R.N., 1932, Cook County School of Nursing (Illinois); B.S., 1936, C.P.H.N., 1936,
Wayne University
- HADDOCK, PHILIP GEORGE, 1947..... Assistant Professor of Forestry
B.S., 1934, Ph.D., 1942, California
- HAERTIG, ELMER WALTER, 1948..... Clinical Instructor in Psychiatry
M.D., 1939, Chicago
- HAFFLY, GILBERT NORIE, 1948..... Clinical Associate in Anatomy and in Surgery
B.M., 1932, M.D., 1936, Northwestern
- HAGEN, WILLIAM H., 1947..... Clinical Professor of Fixed Partial Dentures
D.D.S., 1920, Minnesota
- HAGER, PHILIP ERNEST, 1947..... Associate in English
B.A., 1939, M.A., 1946, Washington
- HAKOLA, MARGARET ERNESTINE, 1949..... Instructor in Physical Education
B.S., 1936, Washington
- HALD, EARL CARLSEN, 1946 (1947)..... Associate Professor of Economics
B.S., 1931, A.M., 1932, Nebraska; Ph.D., 1939, California
- HALL, AMY VIOLET, 1924 (1949)..... Professor of Humanistic-Social Studies
B.Ed., 1920, M.A., 1923, Ph.D., 1940, Washington
- HALL, DAVID CONNOLLY, 1908 (1947)..... Professor Emeritus of Hygiene and Clinic Physician
Ph.B., 1901, Brown; Sc.M., 1903, Chicago; M.D., 1907, Rush Medical College
- HALL, DONALD THORNTON, 1948..... Clinical Instructor in Surgery
B.S., 1931, Washington; M.D., 1935, Harvard
- HALL, HELEN MARIE, 1931 (1943)..... Associate Professor of Music
B.M., 1925, Washington
- HALL, JAMES KENDALL, 1930 (1934)..... Professor of Economics
B.A., 1925, M.A., 1926, Oregon; Ph.D., 1929, Stanford

- HALL, JAMES WINFORD, 1949.....Assistant Professor of English
A.B., 1937, Kansas City; M.A., 1938, Wisconsin; Ph.D., 1949, Cornell
- HALL, NATHAN ALBERT, 1948 (1949).....Instructor in Pharmacy
B.S., 1939, Ph.D., 1948, Washington
- HALL, SAMUEL J., 1948.....Administrative Consultant
A.B., 1922, Maryville College (Tennessee); M.D., 1927, Louisiana; M.S., 1949, Columbia
- HALLER, MARY ELIZABETH, 1931 (1949).....Associate Professor of Mathematics
B.A., 1924, M.S., 1931, Ph.D., 1934, Washington
- HAMACK, FRANK HARTMOND, 1921 (1942).....Lecturer in Accounting
LL.B., 1916, Georgetown
- HAMES, GEORGE HAMILTON, 1948.....Clinical Instructor in Medicine
B.A., 1926, Victoria College (Toronto); M.D., 1929, Toronto
- HAMILTON, ALEXANDER IAN, 1949.....Instructor in Operative Dentistry
D.D.S., 1936, Toronto
- HAMMER, VERNON BENJAMIN, 1947.....Instructor in General Engineering
B.S. in C.E., 1940, Washington; M.S. in S.E., 1941, Harvard
- HAMMOND, MARGARET INGA, 1949.....Instructor in Nursing
R.N., 1942, Tacoma General Hospital; B.S., 1942, College of Puget Sound
- HAMPSON, ROBERT EDWARDS, 1946.....Clinical Professor of Operative Dentistry
D.M.D., 1917, North Pacific College
- HANAHAN, DONALD JAMES, 1948 (1949).....Assistant Professor of Chemistry
B.S., 1941, Ph.D., 1944, Illinois
- HANKS, THRIET GENE, 1947.....Clinical Instructor in Medicine
B.S., 1934, M.S., M.D., 1939, Illinois
- HANNA, JOHN, 1949.....Visiting Professor of Law
A.B., 1914, Dartmouth; A.M., 1915, Stanford; LL.B., 1918, Harvard
- HANNAH, BRUCE FRANK, JR., 1948.....Associate in English
B.A., 1940, M.A., 1942, Arizona
- HANSET, LT. COMDR. HERBERT EUGENE, U.S.N., 1947.....Assistant Professor of
Naval Science
B.A., 1938, Washington
- HANSON, ALEXANDER GEORGE, 1949.....Clinical Associate in Surgery
B.S., 1930, Washington; M.D., C.M., 1935, McGill
- HANSON, KERMIT OSMOND, 1948.....Assistant Professor of Accounting and Statistics
A.B., 1938, Luther College (Iowa); M.S., 1940, Iowa State
- HAPP, NINA MAURINE, 1945.....Lecturer in Secretarial Studies
B.A., 1930, Northwestern; M.B.A., 1937, Chicago
- HARBOLD, WILLIAM HENRY, 1949.....Instructor in Political Science
B.A., 1947, Pennsylvania State; M.A., 1949, Harvard
- HARDY, MARTHA ELIZABETH, 1943 (1946).....Associate in Mathematics
B.A., 1929, Washington
- HARDY, ROBERT MONTAGUE, 1949.....Instructor in Botany
B.S., 1939, Washington; M.S., 1947, Ohio State
- HARKINS, HENRY NELSON, 1947.....Professor of Surgery;
Executive Officer of the Department of Surgery
B.S., 1925, M.S., 1926, Ph.D., 1928, M.D., 1931, Chicago
- HARLOW, JOHN STAFFORD, 1948.....Lecturer in Business Administration
A.B., 1935, Princeton; LL.B., 1939, Harvard
- HARPER, FLORA GWENDOLINE, 1947.....Associate in Music
B.A., 1946, M.A., 1947, Washington
- HARRINGTON, DONALD FRANCIS, 1938 (1947).....Associate Professor of Drama
B.A., 1928, Montana; M.A., 1933, Columbia
- HARRIS, CHARLES WILLIAM, 1906 (1924).....Professor of Hydraulic Engineering
B.S. in C.E., 1903, Washington; C.E., 1903, Cornell University
- HARRIS, EDISON D., 1947.....Associate Professor of Music
B.S., 1942, New York University
- HARRIS, GLEN ALFRED, 1946.....Associate in English
B.S., 1923, M.A., 1924, Colgate
- HARRIS, MARKHAM, 1946 (1947).....Assistant Professor of English
A.B., 1929, M.A., 1931, Williams (Massachusetts)
- HARRISON, ARTHUR ELLIOT, 1948.....Associate Professor of Electrical Engineering
B.S. in E.E., 1936, California; M.S., 1937, Ph.D., 1940, California Institute of Technology
- HARRISON, BEATRICE ELEANORA, 1948.....Associate in Romance Languages and Literature

- HARRISON, FLORENCE MONTANA, 1949.....Associate in Zoology
B.S., 1947, Greenville College
- HARRISON, HOWARD LENT, 1948.....Associate in Mechanical Engineering
- HARRISON, JOSEPH BARLOW, 1913 (1933).....Professor of English
B.A., 1910, Washington; A.B., 1913, Oxford
- HARRISON, ROBERT CHARLES, 1949.....Associate in Psychology
B.S., 1947, Washington
- HARRISON, ROGER WEBSTER, 1945.....Lecturer in Fisheries
B.S. in Chem. Engr., 1925, Washington State; M.S., 1928, George Washington
- HARSCH, ALFRED ELMER, 1930 (1940).....Professor of Law; Acting Dean, School of Law
B.A., 1926, LL.B., 1928, Washington; LL.M., 1940, Columbia
- HART, EDWARD LEROY, 1949.....Assistant Professor of English
B.S., 1939, Utah; M.A., 1941, Michigan
- HARTZELL, HOMER VINCENT, 1948.....Clinical Assistant Professor of Radiology
A.B., 1930, Stanford; M.D., 1936, Oregon
- HARWOOD, CHARLES WILSON, 1949.....Associate in Psychology
B.S., 1947, Washington
- HASTINGS, WALDON HOUSTON, 1948.....Associate Professor of Fisheries
B.S., 1934, Maine; M.S., 1938, Minnesota; Ph.D., 1940, Massachusetts
- HATCH, MELVILLE HARRISON, 1927 (1941).....Professor of Zoology
B.A., 1919, M.A., 1921, Ph.D., 1925, Michigan
- HAUAN, MERLIN JAMES, 1928.....Lecturer in Architecture
B.S. in E.E., 1925, Washington
- HAUSER, ELIZABETH BURCH, 1949.....Clinical Associate in Obstetrics and Gynecology
B.S., 1943, M.B., 1944, M.D., 1945, Minnesota
- HAVEN, HALE AURAND, 1948.....Consultant in Neurosurgery
B.S., 1927, M.D., 1928, M.S., 1930, Ph.D., 1933, Northwestern
- HAVERSTOCK, RICHARD TEAL, 1948.....Clinical Associate in Urology
B.S., 1933, M.D., 1936, Illinois
- HAVILAND, JAMES WEST, 1946 (1947).....Clinical Assistant Professor of Medicine;
Lecturer in Nursing; Assistant Dean, School of Medicine
A.B., 1932, Union College (New York); M.D., 1936, Johns Hopkins
- HAWKINS, NANCY, 1949.....Associate in Art
- HAWLEY, JOSEPH WAYNE, 1949.....Assistant Professor of Law
A.B., 1941, LL.B., 1942, Colorado
- HAWLEY, SYDNEY JAMES, 1948.....Consultant in Radiology
B.S., 1921, Washington; M.D., 1924, Pennsylvania
- HAYDEN, ALICE HAZEL, 1942 (1946).....Associate Professor of Educational Research
Ph.C., 1928, B.S., M.S., 1929, Oregon State; Ph.D., 1932, Purdue
- HAYES, ROBERT EDWARD, 1950.....Associate in Zoology
B.S., 1943, State Teachers College (Minnesota); M.A., 1948, Minnesota
- HAYNER, NORMAN SYLVESTER, 1925 (1937).....Professor of Sociology
B.A., 1920, Washington; A.M., 1921, Ph.D., 1923, Chicago
- HAZEN, BERNICE MERRIAM, 1949.....Lecturer in Nursing
M.D., 1921, Tufts College
- HEARNE, RODNEY BUGBEE, 1948.....Clinical Associate in Surgery
B.S., 1933, Washington; M.D., 1937, Harvard
- HEARST, JOSEPH ALBERT, 1947.....Research Associate in the Institute of Public Affairs
B.A., 1940, Washington
- HEATHERS, LOUISE BUSSARD, 1945.....Assistant Professor of Psychology
B.A., 1933, Washington; Ph.D., 1940, Yale
- HEATLIE, ROLAND HOWARD, 1949.....Associate in German
B.A., 1942, Minnesota
- HECHTMAN, ROBERT AARON, 1949.....Associate Professor of Structural Research
B.S. in C.E., 1938, M.S. in C.E., 1939, Washington; Ph.D., 1948, Illinois
- HEIBERG, MALVINA MATTHEWS, 1947 (1949).....Instructor in Art
B.F.A., 1939, New York
- HEILBRUNN, GERT, 1948.....Lecturer in Psychiatry
B.A., 1929, City College (Germany); M.D., 1935, Bern (Switzerland)
- HEILMAN, ROBERT BECHTOLD, 1948.....Professor of English;
Executive Officer of the Department of English
A.B., 1927, Lafayette College (Pennsylvania); M.A., 1930, Ohio State;
M.A., 1931, Ph.D., 1935, Harvard
- HEINITZ, EVA MARIA, 1948 (1949).....Assistant Professor of Music

Alphabetical List of the Faculty

- HEMLINGE, CHARLES LOUIS, 1911 (1944).....Professor Emeritus of Romance Languages
and Literature
B.Ph., 1911, German-Wallace College(Berea); A.M., 1915, Washington
- HELWIG, CARL MILTON, 1948.....Consultant in Obstetrics and Gynecology
M.D., 1926, Ohio State
- HEMENWAY, ANSEL ARTHUR, 1947.....Assistant Professor of Humanistic-Social Studies
B.A., 1937, Arizona
- HEMENWAY, ISABEL WOLFE, 1946 (1948).....Editorial Associate, Engineering
Experiment Station
B.A., 1909, Nebraska; M.A., 1912, Chicago
- HENDERSON, JESSE LESTER, 1948.....Clinical Instructor in Psychiatry
B.S., 1924, Eureka College (Illinois); M.D., 1929, Washington University (St. Louis)
- HENDERSON, JOSEPH EDMONDS, 1929 (1942).....Professor of Physics;
Director of Applied Physics Laboratory
B.S., 1922, College of Wooster (Ohio); Ph.D., 1928, Yale
- HENDERSON, WILLIAM PAUL, 1949.....Instructor in Anatomy
B.A., 1947, DePauw; M.S., 1949, St. Louis
- HENDRICKS, ROGER CORNELL, 1949.....Clinical Instructor in Psychiatry
M.D., 1941, Rush Medical College
- HENDRICKSON, HAROLD MARTIN, 1949.....Acting Associate Professor of
Mechanical Engineering
B.S. in M.E., 1927, M.E., 1935, Washington
- HENDRICKSON, ORVILLE JAY, 1949.....Associate in Mechanical Engineering
- HENNES, ROBERT GRAHAM, 1934 (1947).....Professor of Civil Engineering
B.S. in C.E., 1927, Notre Dame; M.S., 1928, Massachusetts Institute of Technology
- HENNING, CHARLES NATHANIEL, 1948.....Acting Assistant Professor of Marketing
B.A., 1938, M.A., 1940, University of California at Los Angeles
- HENRIKSON, THEODORE PHILLIP, 1950.....Instructor in Naval Science
- HENRY, BERNARD STAUFFER, 1931 (1941).....Professor of Microbiology
B.S., 1925, M.A., 1926, Ph.D., 1931, California
- HENRY, FRANK COLEMAN, 1949.....Clinical Associate in Anatomy
A.B., 1934, James Millikin; M.D., 1940, Illinois
- HENRY, MARJORIE RUTH, 1947.....Associate in English
A.B., 1938, M.A., 1940, Baylor
- HENRY, WILLIAM JAMES, 1948.....Acting Instructor in Mechanical Engineering
B.S. in M.E., 1907, Purdue
- HENSLEY, MERCEDES HOOVER, 1939 (1948).....Assistant Professor of Art
B.F.A., 1930, M.F.A., 1938, Washington
- HERMAN, THEODORE, 1950.....Instructor in Geography
A.B., 1935, Swarthmore College; M.A., 1936, Columbia
- HERMANS, THOMAS GERALD, 1929 (1940).....Assistant Professor of Psychology;
Chief Examiner, Bureau of Testing
B.S., 1923, M.A., 1927, Washington
- HERRING, JOHN PEABODY, 1947.....Research Associate in the Institute of Labor Economics
A.B., 1904, Brown; B.D., 1907, Union Theological Seminary; Ph.D., 1924, Columbia
- HERRMAN, ARTHUR PHILIP, 1923 (1937).....Professor of Architecture;
Director of the School of Architecture
B.A. in Arch., 1921, Carnegie Institute of Technology
- HERRMANN, SIEGFRIED F., 1948.....Senior Consultant in Surgery
B.S., 1915, Hamline University (Minnesota); M.B., 1919, M.A., 1919, M.D., 1920,
Ph.D., 1929, Minnesota
- HERTZLER, VIRGINIA BEAZLEY, 1949.....Associate in Sociology
B.A., 1947, Lindenwood College; M.A., 1949, Washington
- HEWITT, EDWIN, 1948.....Assistant Professor of Mathematics
A.B., 1940, M.A., 1941, Ph.D., 1942, Harvard
- HIGGS, PAUL McCLELLAN, 1926 (1939).....Assistant Professor of Physics
B.S., 1919, Washington
- HIGHSMITH, RICHARD MORGAN, Jr., 1948.....Associate in Geography
B.A., 1941, Central Washington College of Education; M.A., 1946, Washington
- HILDEBRAND, ALICE GRACE, 1946 (1947).....Clinical Assistant Professor of Medicine;
Lecturer in Nursing
B.S., 1934, M.D., 1936, Nebraska; M.S., 1940, Minnesota
- HILDEBRAND, JAMES LESLIE, 1946.....Associate in Mathematics
B.A., 1938, M.A., 1940, N. Texas State Teachers College

- HILE, FREDERIC WEBB, 1946 (1947).....Assistant Professor of Speech
Or.B., 1933, A.B., 1935, M.A., 1937, University of Denver;
Th.M., 1944, Iliff School of Theology
- HILEN, ANDREW REUBEN, JR., 1945 (1948).....Assistant Professor of English
B.A., 1937, Washington; Ph.D., 1943, Yale
- HILL, RAYMOND LEROY, 1927 (1945).....Professor of Art
Grad., 1913, Rhode Island School of Design
- HILL, WILLIAM RYLAND, JR., 1941 (1947).....Associate Professor of Electrical Engineering
B.S. in E.E., 1934, Washington; M.S. in E.E., 1938, E.E., 1941, California
- HIRABAYASHI, GORDON KIYOSHI, 1947.....Associate in Sociology
B.A., 1946, M.A., 1949, Washington
- HITCHCOCK, CHARLES LEO, 1937 (1944).....Professor of Botany;
Executive Officer of the Department of Botany
A.B., 1927, Pomona; A.M., 1929, Claremont Colleges; Ph.D., 1931,
Washington University (St. Louis)
- HITCHNER, DELL GILLETTE, 1947.....Assistant Professor of Political Science
B.A., 1936, Wichita University; M.A., 1937, Missouri; Ph.D., 1940, Wisconsin
- HO, PHILIP WEN-JEN, 1947.....Research Associate in the Far Eastern and Russian Institute
B.A., 1938, M.A., 1941, Yenching University
- HOAG, ALBERT LYNN, 1946 (1947).....Instructor in General Engineering
B.S.F., 1941, Washington
- HOARD, GEORGE LISLE, 1920 (1941).....Professor of Electrical Engineering
B.S. in E.E., 1917, M.S. in E.E., 1926, Washington
- HODSON, JAMES WILLIAM, 1950.....Associate Judge in Law
A.B., 1929, Dartmouth; LL.B., 1933, Washington
- HOEDEMAEKER, EDWARD DAVID, 1947.....Clinical Instructor in Psychiatry
B.S., 1927, M.D., 1929, Michigan
- HOFFMAN, KATHERINE JANET, 1942 (1945).....Assistant Professor of Nursing;
Educational Director, Harborview Division
B.A., 1929, College of Puget Sound; R.N., 1934, Tacoma General Hospital;
M.N., 1941, Washington
- HOFFSTADT, RACHEL EMILIE, 1923 (1939).....Professor of Microbiology
B.S., 1908, Hanover (Indiana); M.S., 1912, Ph.D., 1915, Chicago;
D.Sc., 1923, Johns Hopkins
- HOGAN, MICHAEL, 1947 (1949).....Instructor in Speech
B.A., 1938, Washington
- HOGAN, VINCENT PAUL, 1948.....Lecturer in Political Science
B.A., 1942, Ph.D., 1948, Notre Dame
- HOGUE, PHILIP NICHOLS, 1949.....Clinical Instructor in Medicine
B.S., 1936, Washington; M.B., 1940, M.D., 1941, Northwestern
- HOKANSON, RANDOLPH, 1949.....Assistant Professor of Music
- HOLLAND, RUTH MALINDA ANDERSON, 1947.....Instructor in Nursing
R.N., 1935, Lutheran Deaconess School of Nursing (Chicago);
B.A., 1944, Luther College (Iowa); M.S., 1947, Western Reserve
- HOLLENBECK, HOWARD B., 1947.....Lecturer in the Graduate School of Social Work
A.B., 1938, M.S., 1940, Louisville
- HOLMES, CHARLES MERTON, 1948.....Clinical Instructor in Psychiatry
B.S., 1927, Washington; B.A., 1929, M.D., 1931, Oregon
- HOLMES, THOMAS HALL, III, 1949.....Instructor in Psychiatry
A.B., 1939, North Carolina; M.D., 1943, Cornell
- HOLT, WILLIAM STULL, 1940.....Professor of History;
Executive Officer of the Department of History
A.B., 1920, Cornell University; Ph.D., 1926, Johns Hopkins
- HONG, SOON-CHUL, 1949.....Associate in Far Eastern and Slavic Languages and Literature
B.A., 1946, Seoul National University (Korea)
- HOOD, CONNIE IVROID, 1949.....Clinical Affiliate in Psychiatry
B.S., 1935, M.D., 1941, Louisiana State
- HOPKINS, WILLIAM STEPHEN, 1946.....Professor of Economics;
Director of the Institute of Labor Economics
B.S., 1925, M.A., 1928, Oregon; Ph.D., 1932, Stanford
- HORNE, DORTHALEE BELLE, 1944.....Assistant Professor of Physical Education
B.S., 1930, Missouri; M.S., 1939, Oregon
- HORSFALL, FRANK HENRY, 1936.....Associate in Music
- HORST, AARON PAUL, 1947.....Professor of Psychology
A.B., 1927, California; Ph.D., 1931, Chicago

- HORTON, GEORGE PLANT, 1934 (1946).....Associate Professor of Psychology;
Executive Officer of the Department of Correspondence Study
B.S., 1926, M.A., 1930, Ph.D., 1932, Princeton
- HORTON, WILLIAM DONALD, 1950.....Clinical Instructor in Psychiatry
B.A., 1939, M.D., 1942, Kansas
- HORTON, ROBERT J. M., 1948.....Clinical Assistant Professor of Public Health
and Preventive Medicine
A.B., 1934, Princeton; M.D., 1938, Western Reserve; M.P.H., 1947, Harvard
- HORWOOD, EDGAR MILLER, 1946 (1947).....Instructor in Civil Engineering
B.S. in M.E., 1942, Georgia School of Technology
- HOSHOR, JOHN PAYTON, 1947.....Assistant Professor of Speech
A.B., 1938, A.M., 1940, Washington; Ph.D., 1947, Iowa
- HOSKINS, MILDRED FRANCES, 1948.....Supervisor of Field Work in the Graduate
School of Social Work
B.A., 1937, Texas State College for Women
- HOSMER, MARGARET GEORGE, 1948.....Acting Instructor in Home Economics
B.S., 1918, North Carolina
- HOSSOM, HAROLD KENNETH, 1948.....Assistant Professor of Political Science
A.B., 1936, Stanford; M.F.S., 1938, Southern California; Ph.D., 1942, Princeton
- HOTSON, JOHN WILLIAM, 1911 (1947).....Professor Emeritus of Botany;
Research Consultant in the Department of Botany
A.B., 1901, A.M., 1902, McMaster (Toronto); Ph.D., 1913, Harvard
- HOWATSON, CHARLES HENRY, 1949.....Associate in Geography
B.A., 1939, M.A., 1947, British Columbia
- HOWE, JAMES BLAKE, 1949.....Lecturer in Law
LL.B., 1924, Virginia; M.B.A., 1926, Harvard
- HSIA, HSIU-YUNG, 1947.....Lecturer in Chinese Language
B.A., 1941, Yenching; Ph.D., 1949, Southern California
- HSIAO, KUNG-CH'UAN, 1949.....Visiting Professor in the Department of Far Eastern and
Slavic Languages and Literature
B.A., 1922, M.A., 1923, Missouri; Ph.D., 1926, Cornell
- HSU, WELLINGTON SIANG, 1944 (1948).....Assistant Professor of Zoology
B.S., 1922, Illinois; M.S., 1924, D.Sc., 1928, Harvard
- HUBER, JOHN RICHARD, 1939 (1949).....Professor of Economics;
Acting Executive Officer of the Department of Economics
B.A., 1931, College of Wooster (Ohio); M.A., 1933, Ph.D., 1937, Princeton
- HUGHES, GLENN ARTHUR, 1919 (1930).....Professor of English;
Director of the School of Drama
B.A., 1916, Stanford; M.A., 1920, Washington
- HUGUS, ROBERT EDWARD, 1948.....Instructor in Architecture
B.Arch., 1942, Minnesota; M.Arch., 1947, Harvard
- HULSE, FREDERICK SEYMOUR, 1948 (1949).....Associate Professor of Anthropology
A.B., 1927, M.A., 1928, Ph.D., 1934, Harvard
- HUNT, MARGUERITE, 1949.....Acting Associate Professor in the Graduate School of Social Work
A.B., 1929, Brown; M.S., 1932, Western Reserve
- HUNT, ROSEMARY LONGWOOD, 1949.....Associate in Psychology
B.S., 1943, Washington
- HUSTON, FRANCES BREITWEG, 1944 (1949).....Instructor in English
B.A., 1931, Reed; M.A., 1948, Washington
- HUTCHINS, LEWIS REID, 1946.....Clinical Associate in Surgery
A.B., 1928, Washington; M.D., 1935, Oregon
- HUTCHINSON, JAMES CARL, 1946 (1948).....Clinical Instructor in Surgery
B.S., 1927, Idaho; M.D., 1933, Northwestern; M.S., 1945, Minnesota
- HUTCHINSON, WILLIAM BURKE, 1947 (1948).....Lecturer in Nursing; Consultant in Surgery
B.S., 1931, Washington; M.D., 1936, McGill
- HYNES, KYRAN EMMETT, 1948.....Clinical Assistant Professor of Medicine
B.M., 1935, Creighton (Nebraska); B.S., 1933, M.D., 1935, Louisiana Medical Center
- IFLAND, MIRIAM, 1949.....Associate in Far Eastern and Slavic Languages and Literature
B.A., 1946, St. John's University (China)
- INGLE, JOHN IDE, 1948.....Assistant Professor of Periodontology
D.D.S., 1942, Northwestern; M.S.D., 1948, Michigan
- INGLIS, RUTH ARDELL, 1946 (1948).....Associate Professor of Sociology
A.B., 1935, M.A., 1937, Stanford; Ph.D., 1945, Bryn Mawr
- INNES, KENNETH KEITH, 1949.....Research Associate in Chemistry
A.B., 1947, Central College (Missouri); M.Sc., 1949, Brown

- IRELAND, HOSEA DEWAIN, 1948.....Clinical Instructor in Medicine
B.S., 1934, West Virginia; M.D., 1936, Virginia
- IRVINE, DEMAR BUEL, 1937 (1947).....Associate Professor of Music
B.A., 1929, M.A., 1931, California; Ph.D., 1937, Harvard
- ISAACS, WALTER F., 1922 (1929).....Professor of Fine Arts; Director of the School of Art
B.S.F.A., 1909, James Millikin University (Illinois)
- JACKSON, JAMES TURNER, 1949.....Instructor in English
B.A., 1942, Michigan
- JACKSON, WILLIAM THOMAS HOBDELL, 1948.....Acting Instructor in German
B.A., 1935, M.A., 1938, Sheffield University (England)
- JACOBS, MELVILLE, 1928 (1945).....Associate Professor of Anthropology
A.B., 1922, College of the City of New York; A.M., 1923, Ph.D., 1931, Columbia
- JACOBSEN, ANDREW BOONE, 1946 (1947).....Instructor in Electrical Engineering; Research
Associate in the Engineering Experiment Station
B.S. in E.E., 1941, Washington
- JACOBSEN, ELDON ERNEST, 1947.....Associate in Psychology
B.S., 1941, M.S., 1943, Utah State Agricultural College
- JACOBSEN, PHILIP AMUNDS, 1927 (1939).....Assistant Professor of General Engineering;
Technical Director of Campus Radio Studios
B.S., 1926, Washington
- JACOBSEN, THEODOR SIEGMFELDT, 1928 (1941).....Associate Professor of Astronomy
B.A., 1922, Stanford; Ph.D., 1926, California
- JACOBSON, BORIS ABBOTT, 1948.....Assistant Professor of Physics
A.B., 1938, A.M., 1939, Columbia; Ph.D., 1947, Chicago
- JACOBSON, BERTHE PONCY, 1937 (1948).....Professor of Music
Diplomas, 1915, Conservatory of Music (Geneva); Diplomas, 1917, Schola Cantorum (Paris);
Diplomas, 1921, Dalcroze School (Geneva)
- JACOBSON, CONRAD, 1948.....Senior Consultant in Neurosurgery
B.S., 1900, Beloit College; M.D., 1911, Johns Hopkins
- JAHN, JULIUS ARMIN, 1947 (1949).....Assistant Professor of Sociology
B.A., 1938, M.A., 1942, Minnesota
- JAHNCKE, GLADYS ALVERNIA, 1950.....Instructor in Nursing
R.N., 1929, Michael Reese Hospital (Chicago); B.S., 1943, Columbia
- JAMES, MAJOR RICHARD BLOWERS, 1949.....Assistant Professor of Air Science and Tactics
- JAMISON, LAURA MAUDE, 1946.....Instructor in Nursing
R.N., B.S., 1936, Washington
- JAHNSON, DORIS CHRISTINE, 1950.....Associate in Scandinavian Languages
- JANSSEN, LAMBERT AUGUSTE ROBERT, 1949.....Associate in Romance Languages
and Literature
Baccalaureat en Humanités anciennes, 1945, Collège de Bellevue (Belgium)
- JANKELSON, BERNARD, 1949.....Lecturer in Prosthodontics
D.M.D., 1924, North Pacific College
- JAQUETTE, WILLIAM ALDERMAN, Jr., 1947.....Clinical Instructor in Pediatrics
A.B., 1932, Harvard; M.D., 1936, Pennsylvania
- JARED, M. SHELBY, 1949.....Lecturer in Medicine
B.S., 1923, M.D., 1924, Northwestern
- JARVI, ALBERT OTTO, 1945 (1947).....Assistant Professor of Civil Engineering
B.S. in C.E., 1938, Washington; M.S. in C.E., 1939, Massachusetts Institute of Technology
- JARVIS, FRED JACKSON, 1948.....Consultant in Surgery
B.S., 1932, M.D., 1932, Iowa; M.S., 1935, Minnesota
- JARVIS, RICHARD BERRY, 1949.....Lecturer in Nursing
B.S., 1942, College of Puget Sound; M.D., 1945, Louisville
- JEFFERSON, WILLIAM, Jr., 1947.....Associate in Physical Education
- JENKINS, LESTER P., 1950.....Lecturer in Journalism
- JENKS, ELIZABETH MAY, 1947.....Instructor in Speech
A.B., 1920, California; M.A., 1928, Cornell University
- JENSEN, ALFRED, 1930 (1947).....Associate Professor of Architecture
B.S. in C.E., 1925, M.S. in C.E., 1937, Washington
- JENSEN, CARL DANA FAUSBOL, 1949.....Consultant in Surgery
M.D., 1931, Maryland
- JENSEN, CLYDE REYNOLDS, 1947.....Clinical Assistant Professor of Pathology
A.B., 1922, Dartmouth; M.D., 1925, Rush Medical College (Chicago)

- JENSEN, EMIL CHRISTIAN, 1946.....Clinical Instructor in Public Health and Preventive Medicine
B.S. in C.E., 1936, Washington; M.S., 1938, Harvard
- JENSEN, HELLENE NAOMI, 1949.....Instructor in Nursing
R.N., 1947, Everett General Hospital; B.S., 1949, Washington
- JENSEN, HOWARD KNUD, 1949.....Clinical Instructor in Oral Diagnosis
D.D.S., 1944, Minnesota
- JENSEN, LYLE HOWARD, 1949.....Instructor in Anatomy
B.A., 1939, Walla Walla College; Ph.D., 1944, Washington
- JENSEN, COL. MARSHALL NELSON, U.S.A., 1948.....Assistant Professor of Military Medical Science
B.S., 1931, M.D., 1933, Nebraska
- JENSEN, OLE JORGEN, 1948.....Clinical Instructor in Urology
B.S., 1934, Washington; M.D., C.M., 1939, McGill; D.Med.Sc., 1944, Columbia
- JENTOFT, RALPH EUGENE, JR., 1949.....Research Associate in Naval Oceanography
B.S., 1941, Washington
- JERBERT, LIEUT. ARTHUR HENRY, 1949.....Assistant Professor of Naval Science
B.S., 1940, Washington
- JERBERT, ARTHUR RUDOLPH, 1921 (1937).....Associate Professor of Mathematics
B.S., 1916, M.S., 1923, Ph.D., 1928, Washington
- JERMAIN, LEONARD LEON, 1948.....Assistant Professor of Journalism
B.S., 1940, M.S., 1946, Oregon
- JESSUP, JOHN HUNNICUTT, 1926 (1927).....Associate Professor of Educational Sociology
A.B., 1920, Earlham College (Indiana); M.A., 1924, Iowa
- JINKS, GORDON MacMILLAN, 1950.....Clinical Instructor in Pedodontics
D.D.S., 1946, Toronto
- JOBB, EMIL, 1947.....Clinical Instructor in Medicine
B.S., 1937, B.S., 1941, M.D., 1942, Wayne University
- JOHNSON, ARTHUR DEAN, 1947.....Clinical Instructor in Medicine
B.A., 1934, Iowa; M.D., 1939, Northwestern
- JOHNSON, CAPT. BENJAMIN EDWIN, JR., U.S.A., 1948.....Assistant Professor of Military Science and Tactics
B.B.A., 1939, Minnesota
- JOHNSON, B. PAULINE, 1941 (1945).....Associate Professor of Art
B.A., 1929, Washington; M.A., 1936, Columbia
- JOHNSON, LILLIAN PARADISE, 1949.....Acting Instructor in Geography
B.A., 1946, Washington; M.A., 1948, Syracuse
- JOHNSON, LLOYD EUGENE, 1948.....Associate in Drama
B.A., 1947, Washington
- JOHNSON, LOCKREM HAROLD, 1947.....Associate in Music
- JOHNSON, LUCILLE MARGUERITE, 1949.....Associate in English
B.A., 1940, Concordia (Minnesota); M.A., 1943, Washington State
- JOHNSON, MARY LOUISE, 1945 (1947).....Assistant Professor of Home Economics
B.A., 1940, Hardin-Simmons (Texas); M.S., 1942, Wisconsin
- JOHNSON, PETER DANE, 1948.....Assistant Professor of Ceramic Engineering
B.S., 1941, Bethany (West Virginia); Sc.D., 1948, Massachusetts Institute of Technology
- JOHNSON, ROBERT EDWARD, 1949.....Assistant Professor of Oral Surgery
D.D.S., 1944, M.S., 1948, Michigan
- JOHNSON, ROBERT JOSEPH, 1946 (1947).....Assistant Professor of Anatomy
M.D., 1943, Iowa
- JOHNSON, ROGER HARRY, 1949.....Clinical Associate in Surgery
B.S., 1937, M.D., 1939, Wisconsin; M.S., 1944, Minnesota
- JOHNSON, WALTER GILBERT, 1948 (1949).....Associate Professor of Scandinavian Languages
B.A., 1927, Augsburg College (Minnesota); M.A., 1929, Minnesota; Ph.D., 1935, Illinois
- JOHNSTON, ELIZABETH ANNE, 1949.....Associate in Public Health and Preventive Medicine
B.S., 1945, Washington; M.S., 1947, Michigan
- JOHNSTON, KATHLEEN ARDIES, 1946 (1947).....Assistant Professor of Home Economics
B.A., 1933, British Columbia; B.S., 1940, Washington; Ph.D., 1946, Cornell University
- JONES, CHARLES HERBERT, 1948 (1950).....Lecturer in Nursing; Clinical Affiliate in Psychiatry
B.S., 1940, Washington; M.D., 1943, Oregon
- JONES, EARL IVERSON, 1948.....Associate in Psychology
B.A., 1941, M.A., 1948, Utah

- JONES, ERNEST MORGAN, 1945.....Professor of Operative Dentistry;
Dean of the School of Dentistry
D.D.S., 1916, Northwestern
- JONES, GEORGE EVERETTE, 1949.....Clinical Instructor in Oral Surgery
D.D.S., 1932, Iowa
- JONES, HUGH WARREN, 1949.....Clinical Instructor in Pathology
B.S., 1936, M.D., 1938, Arkansas
- JONES, MARSHALL HENRY, 1946.....Clinical Associate in Anatomy
M.D., 1927, Northwestern
- JONES, NANCY TAYLOR, 1949.....Associate in Psychology
B.S., 1942, M.A., 1947, Utah
- JONES, PHYLLIS MARGARET, 1949.....Instructor in Physical Education
A.B., 1947, San Jose State College; M.S., 1949, Wellesley
- JONES, ROBERT WILLIAM, 1920 (1934).....Professor of Journalism
B.A., 1906, LL.B., 1913, Missouri; M.A., 1918, South Dakota
- JONES, COLONEL WILLIAM HENRY, JR., 1946.....Professor of Military Science and Tactics;
Executive Officer of Department of Military Science and Tactics
B.A., 1908, Ogden College (Kentucky); B.S., 1913, U. S. Military Academy
- JONQUET, EUGENE MAURICE, 1940 (1946).....Assistant Professor of Social Work
B.A., 1932, James Millikin University (Illinois); M.A., 1933, M.S.W., 1938,
Washington University (St. Louis)
- JOPPA, ROBERT GLENN, 1947.....Instructor in Aeronautical Engineering;
Research Associate in Wind Tunnel
B.S. in A.E., 1945, Washington
- JOY, FREDERICK B., 1947.....Clinical Instructor in Pediatrics
B.A., 1929, M.D., 1931, Oregon
- JUDSON, HENRY HAMMOND, 1950.....Associate Lecturer in Estate Planning
A.B., 1914, Yale
- JUHL, ROBERT SIDNEY, 1949.....Lecturer in General Business
A.B., 1939, LL.B., 1947, Michigan
- JULOW, ROY GEORGE, 1948 (1949).....Instructor in Romance Languages and Literature
B.A., 1940, M.A., 1948, Missouri
- JURICH, JOSEPH FRANCIS, 1948.....Lecturer in Fisheries
- KAHL, JOHN A., 1946.....Clinical Assistant Professor of Public Health and Preventive Medicine
B.S., 1933, M.D., 1935, Nebraska; M.P.H., 1940, Johns Hopkins
- KAHN, BARBARA LeCOMPTE, 1949.....Clinical Associate in Public Health and
Preventive Medicine
B.S., 1938, Dickinson College (Pennsylvania); M.P.H., 1944, Michigan
- KAHN, ROBERT LUDWIG, 1948.....Acting Instructor in German
B.A., 1944, M.A., 1945, Dalhousie University (Nova Scotia)
- KANYER, RUBY, 1948.....Instructor in Nursing
R.N., B.S., 1944, Washington
- KAPLAN, CHARLES, 1948.....Clinical Associate in Pediatrics
B.A., 1934, M.D., 1937, Toronto
- KARR, PAYNE, 1950.....Associate Lecturer in Estate Planning
A.B., 1929, Washington; LL.B., 1932, George Washington
- KASTNER, ETHEL DEVER, 1948.....Instructor in Far Eastern History
B.A., 1943, M.A., 1945, Washington
- KATZ, SOLOMON, 1936 (1943).....Associate Professor of History
A.B., 1930, Ph.D., 1933, Cornell University
- KAUFMAN, HELEN ANDREWS, 1930 (1943).....Assistant Professor of English
B.A., 1909, Wilson College (Pennsylvania); M.A., 1911, Indiana; Ph.D., 1934, Washington
- KAUFMAN, S. HARVARD, 1945 (1949).....Assistant Professor of Psychiatry
B.S., 1934, M.D., 1936, Wisconsin
- KECHLEY, GERALD RAYMOND, 1947.....Associate in Music
B.A., 1946, Washington
- KELEZ, GEORGE BOTHWELL, 1949.....Lecturer in Fisheries
B.S., 1930, Washington; A.M., 1932, Stanford
- KELLER, ABRAHAM CHARLES, 1948.....Assistant Professor of French
B.A., B.S., 1936, M.A., 1937, Ohio State; Ph.D., 1946, California
- KELLER, JEAN PAUL, 1948.....Instructor in Spanish
B.A., 1933, Heidelberg College (Ohio); M.A., 1940, Ohio State; Ph.D., 1949, Washington
- KELLOGG, HOWARD B., 1946 (1948).....Clinical Associate Professor of Anatomy
B.S., 1922, Washington; M.S., 1925, Ph.D., 1927, M.B., 1929, M.D., 1930, Northwestern

- KELLOGG, MILFORD KIRTLAND, 1949.....Associate in Accounting
B.A., 1941, Washington State
- KEMPINSKY, WARREN HAMILTON, 1949.....Research Associate in Surgery
B.S., 1941, Washington; M.D., 1944, Washington University, St. Louis
- KENNEDY, FRED WASHINGTON, 1909 (1947).....Professor Emeritus of Journalism;
Consultant on Press Relations
- KENNY, DOUGLAS TIMOTHY, 1947.....Associate in Psychology
B.A., 1945, M.A., 1947, British Columbia
- KENWORTHY, RAY W., 1929 (1939).....Assistant Professor of Physics
B.A., 1924, M.S., 1925, Iowa; Ph.D., 1938, Washington
- KEPNER, KENTON MECKLIN T/SGT., 1949.....Instructor in Air Science and Tactics
- KERR, GEORGE H., 1947.....Lecturer in the Department of Far Eastern and
Slavic Languages and Literature
A.B., 1932, Rollins College; M.A., 1935, University of Hawaii
- KIDD, EUGENE LINWOOD, 1947 (1949).....Affiliate in Medicine
S.B., 1935, Washington; M.D., 1939, Rush Medical College
- KIDWELL, M. KATHRO, 1939 (1944).....Assistant Professor of Physical Education
B.S., 1927, Nebraska; M.S., 1928, Wisconsin
- KIMBALL, CHARLES DUNLAP, 1948.....Clinical Instructor in Obstetrics and Gynecology
M.D., 1934, Buffalo
- KIMMEL, COLONEL EDWARD, U.S.A. (retired), 1932 (1946).....Professor Emeritus of
Military Science and Tactics
B.S., 1897, M.A., 1907, Washington State
- KINCAID, TREVOR, 1899 (1947).....Professor Emeritus of Zoology;
Research Consultant in the Department of Zoology
B.S., 1899, Washington; D.Sc., 1940, College of Puget Sound
- KING, BRIEN THAXTON, 1947.....Senior Consultant in Surgery
M.D., 1911, Vanderbilt
- KING, ROBERT LEONARD, 1947.....Clinical Assistant Professor of Medicine
M.D., 1928, B.S., 1931, Virginia
- KINGSTON, JOHN MAURICE, 1940 (1946).....Assistant Professor of Mathematics
B.A., 1935, Western Ontario; M.A., 1936, Ph.D., 1939, Toronto
- KINSELLA, HAZEL GERTRUDE, 1942 (1947).....Professor of Music
B.Mus., 1916, B.F.A., 1928, B.A., 1931, Nebraska; M.A., 1934, Columbia;
Ph.D., 1941, Washington
- KINTNER, NANCY JANE, 1942.....Instructor in Nursing Education
R.N., B.S., 1940, Washington
- KIRBY, BERNARD CROMWELL, 1948.....Associate in Sociology
B.A., 1929, Dennison University (Ohio)
- KIRBY, WILLIAM M. M., 1949.....Associate Professor of Medicine
B.S., 1936, Trinity College; M.D., 1940, Cornell
- KIRCHHEIMER, WALDEMAR FRANZ, 1948.....Instructor in Microbiology
M.D., 1947, University of Giessen (Germany)
- KIRCHHOFF, PAUL, 1947 (1949).....Acting Associate Professor of Anthropology
Ph.D., 1931, Leipzig (Germany)
- KIRCHNER, GEORGE C., 1919 (1939).....Assistant Professor of Music
Grad., 1911, University of Leipzig
- KIRILUK, LAWRENCE BEN, 1949.....Research Associate in Surgery
B.S., 1944, B.M., 1945, M.D., 1946, Minnesota
- KIRSTEN, FREDERICK KURT, 1915 (1923).....Research Professor of Aeronautical Engineering
B.S. in E.E., 1909, E.E., 1914, Washington
- KITZHABER, ALBERT RAYMOND, 1948.....Associate in English
B.A., 1939, Coe College (Iowa); M.A., 1941, Washington State
- KLAPPER, JOSEPH THOMAS, 1949.....Acting Assistant Professor of Sociology
S.B., 1936, Harvard; A.M., 1938, Chicago
- KLEMPERER, WOLFGANG W., 1948.....Clinical Associate in Anatomy and Neurosurgery
M.D., 1936, Cornell
- KLIMA, JOAN ROBERTS, 1946 (1948).....Instructor in Marketing
A.B., 1940, College of Puget Sound; M.S., 1941, New York University
- KLOBUCHER, MARION LOUISE, 1948.....Associate in English
B.A., 1938, Whitman College
- KNECHT, NORBERT FRANCIS, 1948.....Research Associate in the Municipal
Research and Services
- KNUDSON, WENDELL CLARENCE, 1948.....Clinical Assistant in Obstetrics and Gynecology
B.S., 1933, Washington; M.D., 1938, Northwestern

- KOLB, BURTON A., 1948.....Instructor in Finance
A.B., 1946, M.B.A., 1947, Michigan
- KOLESAR, JOHN, T/SGT., U.S.M.C., 1947.....Instructor in Naval Science
- KOSOBUD, RICHARD F., 1948.....Associate in Economics
B.S., 1946, Illinois
- KRANTZ, CLEMENT IRENEUS, 1947.....Clinical Assistant Professor of Medicine
A.B., 1920, M.D., 1924, Johns Hopkins
- KRASTIN, AUDREY ANNA, 1948.....Associate in Physical Education
B.S., 1947, Rutgers University
- KRAUSE, ROBERT PAUL, 1948.....Instructor in Mechanical Engineering
B.M.E., 1947, Detroit
- KREBS, EDWIN GERHARD, 1948.....Assistant Professor of Biochemistry
B.S., 1940, Illinois; M.D., 1943, Washington University (St. Louis)
- KRETZLER, HARRY HAMLIN, 1947 (1949).....Affiliate in Medicine
B.S., 1921, M.D., 1923, Nebraska
- KRUPSKI, EDWARD, 1944 (1949).....Assistant Professor of Pharmaceutical Chemistry
B.S., 1939, M.S., 1941, Washington
- KUETHER, CARL ALBERT, 1946.....Assistant Professor of Biochemistry
A.B., 1936, University of Miami (Ohio); M.S., 1940, Wayne University; Ph.D., 1943, George Washington University
- KUHN, BERTHA MEHITABLE, 1940 (1947).....Assistant Professor of English
B.A., 1916, M.A., 1917, North Dakota; Ph.D., 1941, Washington
- KUNDE, NORMAN FREDERICK, 1931 (1949).....Associate Professor of Physical Education
B.S., 1928, M.S., 1932, Washington; D.Ed., 1946, New York University
- KUSIAN, ROSS NORTHEY, 1949.....Associate in Mechanical Engineering
- LAFROMBOISE, CLARENCE BROWN, 1950.....Assistant Professor of Journalism
B.B.A., 1926, Washington
- LAIR, JACK HARVEY, 1950.....Clinical Associate in Public Health and Preventive Medicine
B.S., 1937, Washington
- LAMPMAN, ROBERT JAMES, 1948 (1949).....Assistant Professor of Economics
B.A., 1942, Wisconsin
- LAMSON, OTIS FLOYD, 1947.....Senior Consultant in Surgery
M.D., 1907, Pennsylvania
- LAMUTT, CAPT. FREDERICK RALPH, 1950.....Assistant Professor of Military
Science and Tactics
B.S. in E.E., 1936, Michigan College of Mining and Technology
- LANDBERG, HARRY MORTON, 1948.....Lecturer in Nursing
B.S.M., 1937, Northwestern; M.D., 1939, Loyola University (Chicago)
- LANDSMAN, JEROME LEONARD, 1949.....Acting Instructor in Music
B.M., 1948, Eastman School of Music; M.M., 1949, Southern California
- LANGENHAN, HENRY AUGUST, 1947.....Lecturer in Pharmacy
Ph.C., 1909, Illinois; B.S., 1914, M.S., 1916, Ph.D., 1918, Wisconsin
- LANKA, WAYNE ALLEN, 1950.....Research Associate in Chemistry
and Chemical Engineering
A.B., 1947, Hastings College (Nebraska)
- LANKFORD, MARGARET ALICE, 1946.....Instructor in Nursing
R.N., 1943, St. Mary's School of Nursing (Minnesota);
B.S., 1944, College of St. Teresa (Minnesota)
- LANTOS, THOMAS PETER, 1948.....Associate in Hungarian Language
- LARROWE, CHARLES PATRICK, 1948.....Associate in Economics
B.A., 1946, Washington
- LARSEN, OTTO NYHOLM, 1949.....Associate in Sociology
B.A., 1947, Washington
- LARSON, CHARLES P., 1947 (1948).....Clinical Assistant Professor of Pathology
B.A., 1931, Gonzaga (Spokane); M.D., C.M., 1936, McGill
- LARSON, JOHN GUSTAVE, 1950.....Associate Lecturer in Estate Planning
C.P.A., 1924, State of Illinois; C.P.A., 1926, State of Wisconsin;
C.P.A., 1930, State of Colorado; C.P.A., 1948, State of Washington
- LASATER, JAMES HARVEY, 1948.....Clinical Instructor in Psychiatry
B.S., 1934, Washington; M.D., 1939, George Washington University
- LASHER, EARL PARSONS, JR., 1946 (1948).....Assistant Professor of Anatomy;
Clinical Instructor in Surgery
B.A., 1931, M.D., 1934, Cornell University

- LATOURETTE, HAROLD KENNETH, 1949.....Research Associate in Chemistry and
Chemical Engineering
A.B., 1947, Whitman College
- LAUBHAN, ROYLE KENNETH, 1948.....Instructor in Anatomy
A.B., 1936, M.D., 1941, Stanford
- LAUER, EDWARD HENRY, 1934....Professor of Germanic Languages and Literature; Dean of
the College of Arts and Sciences; Dean of Students
A.B., 1906, A.M., 1909, Ph.D., 1916, Michigan
- LAUGHLIN, ROBERT CLARK, 1949.....Consultant in Surgery
A.B., 1931, Harvard; M.D., 1935, Johns Hopkins
- LAVASKA, ANNA, 1946.....Instructor in Russian Language
B.A., 1946, Washington
- LAW, DAVID BARCLAY, 1947 (1948).....Associate Professor of Pedodontics;
Executive Officer of Department of Pedodontics
B.S.D., 1938, D.D.S., 1938, M.S., 1941, Northwestern
- LAWRENCE, CHARLES WILSON, 1926 (1934).....Associate Professor of Music
B.M., 1918, Oberlin; M.A., 1930, Washington
- LAWS, E. HAROLD, 1947.....Clinical Instructor in Medicine
B.S., 1938, M.D., 1940, Indiana
- LAWSON, JANE SORRIE, 1922 (1948).....Professor of English
M.A., 1907, St. Andrews (Scotland)
- LAWSON, LEONARD LLOYD, 1949.....Associate in General Business
B.A., 1939; B.Ed., 1941, Washington State
- LAWTON, GRAHAM HENRY, 1947.....Assistant Professor of Geography
B.A., 1934, B.Ed., 1936, Melbourne; B.A., 1941, M.A., 1944, Oxford
- LAY, COY LAFAYETTE, 1947.....Clinical Associate in Anatomy
M.D., 1946, Texas
- LAZARUS, ALFRED S., 1948.....Associate Professor of Public Health
and Preventive Medicine
A.B., 1935, M.A., 1937, Ph.D., 1938, California
- LEAHY, KATHLEEN MABEL, 1937 (1949).....Professor of Nursing
Director Public Health Nursing Program
R.N., 1921, Stanford; A.B., 1926, C.P.H.N., 1927, Oregon; M.S., 1931, Washington
- LEAVITT, DARRELL G., 1948.....Consultant in Orthopedics
B.S., 1924, M.D., 1927, Oregon
- LEAVITT, HARRY CLAYTON, 1949.....Lecturer in Nursing
B.M., 1937, M.D., 1938, Chicago Medical School
- LEAVITT, HARRY LINWOOD, 1947 (1948)....Lecturer in Nursing; Consultant in Orthopedics
B.A., 1927, Oregon; M.D., 1930, Michigan
- LE BRUN, GEORGE, 1949.....Lecturer in Nursing
Degree, 1912, Institute of Ghent (Belgium)
- LE COCO, EDWARD ANTHONY, 1948.....Consultant in Orthopedics
B.A., 1926, M.D., 1929, Oregon
- LE COCO, JOHN F., 1948.....Senior Consultant in Orthopedic Surgery
M.D., 1925, N.B., 1926, Oregon
- LEDEBOER, LT. COL. FREDERIC W. C., U.S.A., 1948 (1949).....Acting Professor of
Military Science and Tactics
B.S., 1927, Southern California
- LEE, ALBERT FRANCIS, 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1935, College of Puget Sound; M.D., 1937, Duke University
- LEE, CHANG HEI, 1949.....Acting Instructor in Far Eastern and Slavic Languages and Literature
B.A., 1934, B.D., 1937, Vanderbilt; M.A., 1935, George Peabody
- LEE, CHI-YUAN, 1948.....Associate in Electrical Engineering
B.E.E., 1947, Cornell University; M.S. in E.E., 1949, Washington
- LEE, KYUNG-SUN, 1948.....Associate in Korean Language
B.A., 1922, Korea
- LEE, SHERMAN EMERY, 1948.....Lecturer in Art
A.B., 1938, M.A., 1939, American University; Ph.D., 1941, Western Reserve
- LEEDE, WILLIAM EDWARD, 1947.....Clinical Instructor in Medicine
B.S., 1934, M.D., 1937, Oregon
- LEGG, HERBERT HUGH, JR., 1947.....Research Associate, Bureau of Governmental
Research and Services
B.A., 1942, Central Washington College of Education
- LEHMANN, STANLEY WINEMAN, 1948.....Associate in Psychology
B.A., 1947, Stanford

- LEMERE, FREDERICK, 1946 (1947).....Clinical Professor of Psychiatry
M.A., 1930, M.D., 1932, Nebraska
- LEMON, BERLAN, 1947.....Associate in Psychology
B.S., 1941, Oregon State; M.S., 1948, Oregon
- LESTER, CHARLES NELSON, 1939 (1947).....Clinical Instructor in Medicine;
Assistant Director of the Health Center
B.A., 1928, M.D., 1934, Colorado
- LEVIN, MAX M., 1949.....Assistant Professor of Psychology
A.B., 1937, University of California at Los Angeles; Ph.D., 1946, California
- LEVY, ERNST, 1937.....Professor of History, Law, and Political Science
J.D., 1906, Berlin; LL.D. (Honorary), 1949, Frankfurt; Ph.D. (Honorary), 1949, Heidelberg
- LEVY, SOL, 1949.....Clinical Affiliate in Psychiatry
M.D., 1936, University of Munich (Germany)
- LEWIS, LAUREL JONES, 1946 (1949).....Associate Professor of Electrical Engineering
A.B., 1933, E.E., 1935, Ph.D., 1947, Stanford
- LEWIS, PAUL DONOVAN, 1949.....Clinical Associate Professor of Orthodontics
D.M.D., 1919, North Pacific College
- LEWIS, RUSSELL GUY, 1949.....Clinical Associate in Anatomy
B.S., 1939, Utah State Agricultural College; M.D., 1946, Utah
- LI, FANG-KUEI, 1949....Visiting Professor of Far Eastern and Slavic Languages and Literature
A.B., 1926, Michigan; A.M., 1927, Ph.D., 1928, Chicago
- LINBURGH, DONNAMAE ELIZABETH, 1948.....Instructor in Nursing
R.N., 1944, B.S., 1944, Seattle College
- LINCOLN, JOHN HARVEY, 1949.....Research Associate in Naval Oceanographic Research
B.S., 1938, Washington
- LINCOLN, MIRIAM, 1947.....Clinical Assistant Professor of Medicine
A.B., 1922, Radcliffe; M.S.S., 1923, Smith; M.D., 1932, Rochester
- LINDAHL, WALLACE WILLIAM, 1947 (1948).....Clinical Associate in Anatomy;
Clinical Instructor in Medicine
B.S., 1933, Washington State; M.D., 1938, Northwestern
- LINDBLOM, ANNA MATHILDA, 1948.....Instructor in Nursing
B.A., 1941, Colorado State College of Education
- LINDBLOM, ROY ERIC, 1924 (1945).....Professor of Electrical Engineering
B.S. in E.E., 1922, M.S. in E.E., 1929, Washington
- LINDEN, HARRY EUGENE, 1947.....Instructor in Music
- LINGAFELTER, EDWARD CLAY, JR., 1939 (1947).....Associate Professor of Chemistry
B.S., 1935, Ph.D., 1939, California
- LIPPINCOTT, STUART WELLINGTON, 1946.....Professor of Pathology;
Executive Officer of the Department of Pathology
A.B., 1929, Clark University; M.D., C.M., 1935, McGill
- LISLE, RUTH, 1946.....Associate in Classical Languages
B.A., 1938, Washington
- LOE, RALPH HARVEY, 1948.....Consultant in Surgery
B.S., 1925, Washington; M.D., 1926, Pennsylvania
- LOEFFLER, MANUEL JOHN, 1949.....Associate in Geography
B.A., 1946, M.A., 1948, Colorado
- LOEW, EDGAR ALLAN, 1909 (1923).....Professor of Electrical Engineering;
Dean Emeritus of the College of Engineering
B.S. in E.E., 1906, E.E., 1922, Wisconsin
- LOGAN, ROLF F., 1947.....Associate in Music
B.S., 1947, North Dakota State Teachers College
- LOKKEN, HAROLD ELMER, 1948.....Lecturer in Fisheries
- LONGSTAFF, HOWARD PORTER, 1949.....Visiting Professor of Psychology
B.A., 1922, B.S., 1925, Ohio; M.A., 1927, Ohio State; Ph.D., 1931, Minnesota
- LONGWELL, LESLIE T., 1947.....Associate in Russian Language
B.A., 1936, M.A., 1940, Washington
- LOOMIS, GORDON JAMES, 1948.....Associate in Electrical Engineering
B.S. in E.E., 1944, Washington
- LOOMIS, TED ALBERT, 1947 (1949).....Associate Professor of Pharmacology
B.S., 1939, Washington; M.S., 1941, Ph.D., 1943, University of Buffalo; M.D., 1946, Yale
- LORIG, ARTHUR NICHOLAS, 1934 (1949).....Professor of Accounting
B.A., 1922, Wisconsin; M.A., 1932, Stanford; Ph.D., 1936, Chicago;
C.P.A., 1927, State of California

- LOSCHEN, JANICE MYRLE, 1949.....Instructor in Speech
B.A., 1947, Washington State
- LOUCKS, ROGER BROWN, 1936 (1948).....Professor of Psychology;
Executive Officer of Department of Psychology
B.S. in C.E., 1927, Ph.D., 1930, Minnesota
- LOUGHLEN, IVAN KAY, 1948.....Clinical Associate in Orthopedics
B.S., 1939, Washington; M.D., 1943, Oregon
- LOUGHRIDGE, DONALD HOLT, 1931 (1942).....Professor of Physics
B.S., 1923, Ph.D., 1927, California Institute of Technology
- LOUNSBURY, WARREN CARSON, 1948.....Acting Instructor in Drama
A.B., 1946, Western Reserve
- LOVELL, REGINALD IVAN, 1948.....Acting Professor of History
A.B., 1923, University of London; A.M., 1925, Michigan; Ph.D., 1932, Harvard
- LOVETT, WENDELL HARPER, 1948.....Instructor in Architecture
B.Arch., 1947, Washington; M.Arch., 1948, Massachusetts Institute of Technology
- LOWMAN, FRANK GEORGE, 1949.....Research Associate in Applied Fisheries Laboratory
B.S., 1943, Washington
- LOWRY, STELLA MAY, 1944 (1947).....Instructor in Art
B.A., 1936, Washington
- LUBITZ, THELMA GOLDIE, 1948.....Instructor in Nursing
B.A., 1944, Brooklyn College; R.N., 1947, M.N., 1947, Yale
- LUBY, GRACE KATHRYN, 1947.....Instructor in Nursing
B.S., 1944, George Peabody College (Tennessee); R.N., 1928, St. Joseph's Hospital (Nebraska)
- LUCAS, HENRY STEPHEN, 1921 (1934).....Professor of History
A.B., 1913, Olivet (Michigan); A.M., 1915, Indiana; Ph.D., 1921, Michigan
- LUCEY, ROSEMARY, 1949.....Instructor in Nursing
B.S., 1949, Washington
- LUECK, DAVID WILLIAM, 1947 (1948).....Instructor in Aeronautical Engineering
B.S.E., 1943, M.S.E., 1947, Michigan
- LUND, PAUL K., 1947.....Clinical Assistant Professor of Pathology
B.A., 1934, Carleton College (Minnesota); M.D., C.M., 1940, McGill
- LUNDBERG, GEORGE ANDREW, 1945.....Professor of Sociology;
Executive Officer of the Department of Sociology
B.A., 1920, North Dakota; M.A., 1923, Wisconsin; Ph.D., 1925, Minnesota
- LUNDGREN, EDITH KNAPP, 1949.....Associate in Music
- LUNDMARK, VERNON OSCAR, 1948.....Clinical Associate in Surgery
M.D., 1936, Washington University (St. Louis)
- LUNDY, HOWARD WINSTON, 1946.....Clinical Instructor in Public Health and
Preventive Medicine
B.S., 1932, Washington State; M.S., 1934, St. Louis University;
Dr. P.H., 1939, Massachusetts Institute of Technology
- LUTEY, WILLIAM GLEN, 1934 (1949).....Assistant Professor of Liberal Arts;
Director of General Studies
B.A., 1930, M.A., 1931, Washington
- LYLE, FLORENCE COHENOUR, 1948.....Associate in Chemistry
B.S., 1944, Utah
- LYMAN, JOHN C., 1948.....Senior Consultant in Surgery
B.S., 1909, Whitman; M.D., 1913, Johns Hopkins; D.Sc., 1946, Whitman
- LYNCH, JAMES ERIC, 1931 (1943).....Professor of Fisheries
B.A., 1917, M.A., 1921, Nebraska; Ph.D., 1929, California
- LYNCH, JOHN FRANCIS, 1947 (1949).....Instructor in Romance Languages and Literature
B.A., 1934, M.A., 1937, Washington
- LYONS, BARBARA JEAN KEMPER, 1949.....Instructor in Nursing
R.N., 1943, Bishop Johnson College of Nursing (Los Angeles); B.S., 1949, Washington
- LYTER, CLINTON STONE, 1949.....Consultant in Surgery
B.S., 1927, M.D., 1929, Kansas
- LYTLE, SCOTT HARRISON, 1949.....Assistant Professor of History
A.B., 1940, Princeton; Ph.D., 1948, Cornell
- McADAMS, LAURA ELIZABETH, 1941 (1945).....Assistant Professor of Home Economics
B.S., 1923, M.S., 1932, Kansas State
- McCAFFREE, KENNETH MAURICE, 1949.....Acting Assistant Professor of Economics
B.A., 1940, Southwestern College; M.A., 1942, Denver
- McCALLISTER, DAVID VANCE, 1949.....Clinical Associate in Public Health and
Preventive Medicine
B.A., 1928, Wabash College

- McCARTHY, JOSEPH LePAGE, 1941 (1947).....Associate Professor of Chemical Engineering
B.S. in Chem.E., 1934, Washington; M.S., 1936, Idaho; Ph.D., 1938, McGill
- McCARTHY, WALTER CHARLES, 1949.....Assistant Professor of Pharmaceutical Chemistry
B.S., 1943, Massachusetts Institute of Technology; Ph.D., 1949, Indiana
- McCLENAHAN, RICHARD MYRL, CSOM, U.S.N., 1948.....Instructor in Naval Science
- McCONAHEY, JAMES M., 1921 (1947).....Professor Emeritus of Accounting;
Adviser to Professional Accounting Students
B.S., 1896, M.S., 1899, Washington and Jefferson College; LL.B., 1899, Northwestern;
C.P.A., 1916
- McCONVILLE, BERNARD EDWARD, 1948.....Clinical Associate in Orthopedics
B.S., 1935, M.D., 1936, Nebraska
- McCORKLE, MAE DIANA, 1949.....Assistant Professor of Nursing
B.A., 1918, Washington; B.N., 1927, Yale; M.A., 1936, Columbia
- McCOY, LAYTON LESLIE, 1950....Research Associate in Chemistry and Chemical Engineering
B.S., 1947, Washington
- McCOY, LESLIE LAYTON, 1947.....Lecturer in Nursing
B.S., 1917, Wisconsin; M.D., 1919, Columbia
- McCULLOUGH, WILLIAM HAYWORTH, 1943.....Assistant Professor of Social Work;
Acting Director, Graduate School of Social Work
A.B., 1932, DePauw; A.M., 1940, Chicago
- McDIARMID, JOHN BRODIE, 1949.....Associate Professor of Classics; Executive Officer of
the Department of Classical Languages and Literature
B.A., 1936, Toronto; Ph.D., 1940, Johns Hopkins
- McDONALD, DONALD FIEDLER, 1949.....Assistant Professor of Surgery
M.D., 1942, Chicago
- McELMEEL, EUGENE F., 1947 (1949).....Clinical Associate in Anatomy;
Clinical Instructor in Surgery
B.A., 1930, College of St. Thomas (Minnesota); B.S., 1933, M.D., 1936, Minnesota
- McFARLAN, LEE HORACE, 1927 (1946).....Professor of Mathematics
B.S., 1917, Kansas State Teachers College; A.M., 1921, Ph.D., 1924, Missouri
- McGILL, CHARLES MORRIS, 1950.....Clinical Assistant Professor of Public Health and
Preventive Medicine
B.S., 1931, Washington; M.D., 1935, Vanderbilt; M.P.H., 1945, Harvard
- McGLAMERY, CHARLES DONALD, 1949.....Associate in Sociology
B.S., 1942, M.S., 1949, Oklahoma A. & M.
- McGOVERN, WILLIAM PALMER, 1949.....Clinical Assistant Professor of Orthodontics
D.D.S., 1921, California
- McGOWAN, THORBURN S., 1948.....Consultant in Surgery
A.B., 1928, M.A., 1929, M.D., 1932, Tennessee
- McGOWND, M. JANE, 1928.....Assistant Professor of Physical Education
B.S., 1917, M.A., 1923, Columbia
- McGRATH, JOSEPH JAMES, 1948.....Associate in Marketing
A.B., 1936, Notre Dame
- McINTYRE, HARRY JOHN, 1919 (1943).....Professor of Mechanical Engineering
B.S. in M.E., 1915, M.B.A., 1923, Washington
- McKAY, GEORGE FREDERICK, 1927 (1943).....Professor of Music
B.Mus., 1923, University of Rochester
- McKEE, LYNNE G., 1947.....Lecturer in Fisheries
B.S., 1927, M.S., 1928, Washington
- McKEE, MARGARET McALLISTER, 1948.....Associate in Speech
A.B., 1936, Whitman
- McKEEVER, BENJAMIN BUTLER, 1949.....Associate Professor of Psychology
A.B., 1930, M.A., 1931, Harvard; Ph.D., 1940, Iowa
- McKELVEY, ROBERT KENNETH, 1948.....Associate in Psychology
B.A., 1947, M.A., 1948, Missouri
- McKENZIE, VERNON, 1928.....Professor of Public Relations
B.A., 1909, Toronto; M.A., 1914, Harvard
- McKEY, HELEN LENTZ, 1948.....Instructor in Nursing
R.N., 1931, Bloomingdale Hospital (New York); B.S., 1934, M.A., 1943, Columbia
- McKIBBIN, WILBUR BLAINE, 1948.....Consultant in Orthopedics
B.B.A., 1918, Washington; B.M., 1929, M.D., 1930, Northwestern
- McKINLAY, FLORENCE DILLOW, 1937 (1945).....Instructor in English
B.A., 1908, Lombard (Illinois); M.A., 1931, Washington
- McLARNEY, ARTHUR JAMES, 1946.....Associate in Physical Education
B.S., 1932, Washington State

- McLELLAN, HELEN, 1937 (1945).....Associate Professor of Physical Education
B.S., 1930, Wisconsin; M.A., 1931, Columbia
- McLEMORE, IRA OGELTHORPE, 1948.....Consultant in Orthopedics
M.D., 1923, Georgia
- McMAHON, EDWARD, 1908 (1940).....Professor Emeritus of American History
Ph.B., 1898, Washington; M.A., 1907, Wisconsin
- McMAHON, THERESA SCHMID, 1911 (1937).....Professor Emeritus of Economics and Labor
A.B., 1899, A.M., 1901, Washington; Ph.D., 1909, Wisconsin
- McMINN, BRYAN TOWNE, 1920 (1939).....Professor of Mechanical Engineering;
Executive Officer of the Department of Mechanical Engineering
B.S. in M.E., 1918, Oregon State; M.S. in M.E., 1926, M.E., 1931, Washington
- McNEESE, DONALD CHARLES, 1946 (1948).....Instructor in General Engineering
B.S. in C.E., 1940, Wyoming
- McVAY, JOHN PATRICK, 1947.....Clinical Instructor in Medicine
B.S., 1928, Washington; M.D., 1932, Oregon
- MACARTNEY, THOMAS WAKEFIELD, 1946 (1947).....Instructor in General Engineering
B.S. in C.E., 1939, B.S. in Com. Engr., 1946, Washington
- MACCAMY, EDWIN THOMAS, 1949.....Clinical Associate in Obstetrics and Gynecology
B.S., 1937, Gonzaga; M.S., 1940, M.D., 1940, Northwestern
- MACDONALD, CATHERINE JOAN, 1945.....Supervisor of Field Work,
Graduate School of Social Work
B.A., 1936, Washington
- MACDONALD, CECILIA, 1949.....Lecturer in Education
B.A., 1946, Central Washington College of Education
- MACDONALD, KENNETH MELVIN, 1949.....Assistant Professor of Forestry
B.S.F., 1932, Washington
- MACIVOR, VIRGINIA ELLEN, 1945.....Instructor in Nursing
R.N., 1933, Montana Deaconess Hospital; B.S., 1945, Washington
- MACK, EGIL, JR., 1949.....Associate in Classical Languages
B.A., 1947, Washington
- MACKENZIE, DONALD HECTOR, 1929 (1944).....Professor of Accounting;
Executive Officer of Department of Accounting, Management and Statistics
B.B.A., M.B.A., 1925, Washington; C.P.A., 1933
- MACKIN, JOSEPH HOOVER, 1934 (1947).....Professor of Geology
B.S., 1930, New York University; M.A., 1932, Ph.D., 1936, Columbia
- MACKLEM, LEON FRANCIS, 1949.....Lecturer in Finance
- MACLEAN, DOROTHY G., 1936 (1943).....Assistant Professor of Physical Education
B.S., 1933, Oregon; M.S., 1938, Washington
- MACMAHON, CHARLES EUGENE, 1948.....Clinical Instructor in Surgery
B.S., 1932, Washington; M.D., 1936, Harvard
- MAHADY, STEPHEN CHARLES FRANCIS, 1948.....Clinical Instructor in Medicine
A.B., 1935, Hamilton College (New York); M.D., 1939, Harvard
- MAJNARICH, JOHN J., 1948.....Research Associate in Biochemistry
B.S., 1945, Washington State
- MAKI, JOHN MCGILVREY, 1939 (1948).....Assistant Professor of Japanese
Government and Politics
B.A., 1932, M.A., 1936, Washington; Ph.D., 1948, Harvard
- MANCHESTER, ROBERT CASE, 1947.....Clinical Instructor in Medicine
B.A., 1927, Ohio Wesleyan; M.S., 1930, M.D., 1932, Rochester
- MANDER, LINDEN ALFRED, 1928 (1937).....Professor of International Organization
and Relations; Codirector of the Institute of International Affairs
B.A., 1917, M.A., 1920, Adelaide (Australia)
- MANSFIELD, ROBERT STUART, 1932 (1945).....Associate Professor of Journalism
B.A., 1926, M.A., 1931, Michigan
- MARCKWORTH, GORDON DOTTER, 1939.....Professor of Forest Management;
Dean of the College of Forestry
B.S.F., 1916, Ohio State University; M.F., 1917, Yale
- MARK, SARA NORRIS, 1937 (1947).....Instructor in English
B.A., 1911, B.S., 1911, M.A., 1928, Washington
- MARSH, HAROLD, JR., 1947.....Assistant Professor of Law
B.A., 1939, Rice Institute (Texas); LL.B., 1942, Texas; LL.M., 1947, Columbia
- MARTIN, ARTHUR WESLEY, JR., 1937 (1943).....Associate Professor of Physiology
Executive Officer of Department of Zoology
B.S., 1931, College of Puget Sound; Ph.D., 1936, Stanford

- MARTIN, CHARLES EMANUEL, 1924.... Professor of International Law and Political Science;
Codirector of the Institute of International Affairs;
Executive Officer of the Department of Political Science
B.Litt., 1914, A.M., 1915, California; Ph.D., 1918, Columbia; LL.D., 1942,
Southern California
- MARTIN, HAROLD CLIFFORD, 1948..... Associate Professor of Aeronautical Engineering
B.S. in M.E., 1934, M.S., 1937, New York University
- MARTIN, HOWARD HANNA, 1930 (1940)..... Professor of Geography;
Executive Officer of the Department of Geography
B.S., 1922, Pennsylvania; M.A., 1923, Ph.D., 1929, George Washington University;
Sc.D. (Honorary), 1937, Monmouth College (Illinois)
- MARTIN, JOHN K., 1947..... Clinical Assistant Professor of Medicine
B.S., 1926, M.D., 1928, Nebraska
- MARTIN, JOHN PIERRE, 1947..... Instructor in Civil Engineering
B.S. in C.E., 1941, Illinois Institute of Technology
- MARTIN, JOHN WATSON, 1947..... Associate in Romance Languages and Literature
B.S., 1949, Washington
- MARTIN, LESLIE, 1947..... Associate in Music
- MARTIN, WALTER BEVERLY, 1950..... Clinical Instructor in Operative Dentistry
D.M.D., 1940, Oregon
- MASKE, WILLIAM, 1944 (1947).... Research Associate in the Engineering Experiment Station
B.S., 1915, M.S., 1917, Washington
- MASON, ALDEN C., 1946 (1949)..... Instructor in Art
B.A., 1942, M.F.A., 1947, Washington
- MASON, DAVID GREENWALT, 1947 (1948)..... Clinical Assistant Professor of Pathology
B.A., 1931, M.D., 1935, Oregon
- MASON, MARY LUCILE, 1943 (1949)..... Instructor in English
B.A., 1923, Grinnell College (Iowa); M.A., 1948, Washington
- MASON, WILLIAM RALPH, 1946 (1949)..... Assistant Professor of Civil Engineering
B.S. in C.E., 1940, Washington; M.S. in C.E., 1941, Massachusetts Institute of Technology
- MATHEWS, JACKSON, 1949..... Associate Professor of English
A.B., 1928, M.A., 1931, Georgia; Ph.D., 1946, Columbia
- MATHWIG, JAMES ELMER, 1948..... Clinical Associate in Surgery
B.S., 1933, Washington; M.D., 1937, Oregon
- MATHY, LEONARD GEORGE, 1945 (1946)..... Assistant Professor of Economics
A.B., 1941, M.A., 1943, Ph.D., 1946, Illinois
- MATSUSHITA, IWAQ, 1946..... Associate in Japanese Language
- MATTES, JOSEPH JULIUS, 1949..... Clinical Professor of Oral Surgery; Special Lecturer in
Anesthesia; and Clinician in Anesthesia
B.S., 1928, College of Pacific; M.D., 1934, Hahnemann Medical College (Pennsylvania)
- MATTHEWS, NORMAN LAMPKIN, 1947..... Assistant Professor of Pharmacology
S.B., 1933, Chicago; Ph.D., 1940, Ohio State; M.D., 1946, Rochester
- MATTINGLY, JOSEPH FABIAN, 1948..... Associate in Meteorology and Climatology
- MAULBETSCH, JEAN WORTHLEY, 1947..... Associate in English
B.A., 1942, Linfield College (Oregon)
- MAY, CHARLES CULBERTSON, 1912 (1929)..... Professor of Civil Engineering;
Superintendent of Buildings and Grounds
B.S. in C.E., 1910, Washington
- MEAKIM, ROGER J., 1950..... Associate Judge of Law
B.S., 1904, LL.B., 1906, Iowa
- MEESE, RICHARD HUNT, 1946 (1949)..... Assistant Professor of Civil Engineering
B.S. in C.E., 1939, Washington; S.M., 1941, Harvard
- MEIGS, ROBERT CRAWFORD, 1949..... Lecturer in Fisheries
B.S., 1936, Washington
- MEINIG, DONALD WILLIAM, 1949..... Associate in Geography
B.S., 1948, Georgetown
- MEISNEST, FREDERICK WILLIAM, 1927 (1947)..... Professor Emeritus of Germanic Literature
and Graduate Examiner
B.S., 1893, Ph.D., 1905, Wisconsin
- MELDEN, ABRAHAM IRVING, 1946..... Assistant Professor of Philosophy
A.B., 1931, University of California at Los Angeles; A.M., 1932, Brown;
Ph.D., 1938, California
- MELDER, FRANK STEAVENSON, 1946 (1947)..... Instructor in General Engineering
B.S. in M.E., 1936, Washington

- MENDENHALL, AUDREY KRAMER, 1946. Instructor in Pharmacy in the School of Nursing
B.S., 1938, Washington
- MERENDINO, K. ALVIN A., 1948. Associate Professor of Surgery
B.A., 1936, Ohio University; M.D., 1940, Yale; Ph.D., 1946, Minnesota
- MERKLINGHAUS, OTTO ELLIS, 1947. Associate in Sociology
B.A., 1946, Washington
- MERRILL, GRANT WARREN, 1947 (1949). Associate in Journalism and Radio Education
A.B., 1925, Washington
- MESSER, ROWLAND ENLOW, 1946 (1947). Instructor in General Engineering
B.S. in M.E., 1935, Washington
- METHENY, DAVID, 1948. Consultant in Surgery
A.B., 1920, Pennsylvania; M.D., 1923, Jefferson Medical School (Pennsylvania)
- METZGER, CHARLES REID, 1949. Associate in English
B.A., 1943, Washington
- METZGER, JUDITH, 1947. Research Associate in the Bureau of Business Research
A.B., 1944, Vassar
- METZMAKER, CHARLES OTTO, 1949. Clinical Associate in Anatomy
B.S., 1944, M.D., 1946, Illinois
- MEYER, CHARLES FRANCES, 1949. Clinical Instructor in Pedodontics
D.D.S., 1945, Northwestern
- MEYER, HERMAN CARL HENRY, 1934 (1942). Associate Professor of Germanic Languages
B.A., 1924, Capital University (Ohio); Ph.D., 1936, Chicago
- MEYERS, ROBERT FREDERICK, 1950. Associate in Mechanical Engineering
- MICHAEL, FRANZ HENRY, 1942 (1948). Professor of Far Eastern History;
Assistant Director of the Far Eastern and Russian Institute
Dr. Jur., 1933, Freiburg (Germany)
- MILES, FRANK FRODSHAM, 1947 (1949). Instructor in Sociology
B.A., 1935, Washington
- MILLER, ALFRED LAWRENCE, 1923 (1937). Professor of Mechanics and Structures
B.S. in C.E., 1920, C.E., 1926, Washington
- MILLER, CHARLES JOHN, 1927 (1945). Professor of Marketing
B.B.A., 1922, M.B.A., 1927, Washington
- MILLER, MAJOR DANFORTH PARKER, Jr., U.S.A., 1948. Assistant Professor of
Air Science and Tactics
B.S., 1940, Grove City College of Pennsylvania
- MILLER, DELBERT CHARLES, 1947. Associate Professor of Sociology
B.S., 1934, M.A., 1937, Miami (Ohio); Ph.D., 1940, Minnesota
- MILLER, DONNA MAE, 1946 (1949). Instructor in Physical Education
B.S., 1944, Utah; M.A., 1946, Stanford
- MILLER, JAMES WALTER, 1948. Clinical Instructor in Orthopedics
A.B., 1936, M.D., 1939, Michigan
- MILLER, MARJORIE MERCEDES, 1946. Associate in English
B.A., 1934, M.A., 1938, Washington
- MILLER, ROBERT HERMAN, 1949. Assistant Professor of Pharmaceutical Chemistry
B.S., 1939, Minnesota
- MILLER, ROBERT STOECKER, 1947. Acting Instructor in Mechanical Engineering
B.S., 1939, Washington
- MILLS, BLAKE DAVID, Jr., 1946 (1947). Professor of Mechanical Engineering
B.S. in M.E., B.S. in E.E., 1934, M.E., 1947, Washington; M.S. in M.E., 1935,
Massachusetts Institute of Technology
- MILLS, CASWELL ALBERT, 1942 (1943). Instructor in Physical Education
B.A., 1935, North Dakota State Teachers College; M.A., 1943, Washington
- MILLS, MOORE ANDERSON, 1948. Clinical Instructor in Medicine
B.S., 1931, M.S., 1931, Washington; Ph.D., 1936, M.D., 1939, Northwestern
- MILNE, MAJOR HARRY THOMSON, 1946. Assistant Professor of Naval Science
B.S., 1940, Oregon
- MINER, ADAH L., 1948. Instructor in Speech
B.A., 1943, Washington
- MINNICK, LIEUT. HARVEY ELLSWORTH, 1949. Assistant Professor of Naval Science
B.A., 1941, Nebraska
- MISCH, PETER, 1947 (1948). Associate Professor of Geology
D.Sc., 1932, University Goettingen (Germany)
- MISKA, MONTE GEORGE, 1949. Clinical Instructor in Fixed Partial Dentures
D.D.S., 1937, Minnesota

- MITCHELL, EDITH LAUBSCHER, 1947.....Instructor in Nursing
B.S., 1929, Washington; R.N., 1929, General Hospital of Everett (Washington)
- MITCHELL, FLORENCE FELTON, 1949.....Associate in Speech
B.A., 1945, Keuka College (New York); M.A., 1947, New York State
- MITHUN, OMER LLOYD, 1947 (1948).....Instructor in Architecture
B.Arch., 1942, Minnesota
- MITTET, HOLGER PEDER, 1946 (1949).....Assistant Professor of Civil Engineering
B.S. in C.E., 1937, Washington; M.S. in C.E., 1938, Massachusetts Institute of Technology
- MIX, MAJOR STANLEY MONROE, 1946.....Assistant Professor of Military Science and Tactics
B.S., 1940, South Dakota State
- MIYAMOTO, SHOTARO FRANK, 1945.....Assistant Professor of Sociology
B.A., 1936, M.A., 1938, Washington
- MO, YEH, 1950.....Acting Instructor in Mathematics
B.S., 1936, Chiao Tung; M.A., 1948, Ph.D., 1949, Washington
- MOBERG, DAVID OSCAR, 1948.....Associate in Sociology
B.A., 1947, Seattle Pacific College
- MOHL, RUTH, 1947.....Associate in Journalism
B.A., 1942, Pennsylvania State
- MOLL, FREDERIC CLIFFORD, 1948 (1949).....Assistant Professor of Pediatrics
A.B., 1937, M.D., 1940, University of Rochester
- MOLT, FREDERICK FELIX, 1949.....Clinical Professor of Oral Surgery and Special Lecturer
D.D.S., 1901, Chicago College of Dental Surgery
- MOLTRECHT, KARL ERNST HANS, 1948.....Instructor in Mechanical Engineering
B.M.E., 1948, Ohio State
- MONTANO, JOSE DURAN, 1947.....Associate in Romance Languages and Literature
Bachelor, 1944, The American Institute (Bolivia)
- MOODY, LESTER DEANE, 1947.....Associate in English
B.A., 1928, Washington State
- MOORE, ALTON W., 1948.....Associate Professor of Orthodontics;
Executive Officer of the Department of Orthodontics
D.D.S., 1941, California; M.S., 1948, Illinois
- MOORE, JOHN TERENCE, 1948.....Assistant Professor of Music
B.Mus., 1940, M.Mus., 1941, Illinois
- MORGAN, TIRZAH MAY, 1949.....Assistant Professor of Nursing
R.N., 1938, California; M.A., 1946, Columbia
- MORITZ, HAROLD KENNEDY, 1928 (1949).....Professor of Hydraulics
B.S. in M.E., 1921, Massachusetts Institute of Technology
- MORRIS, WILLIAM, 1948.....Associate in Physical Education
- MORRISON, DOUGLAS BRADFORD, 1949.....Associate in Speech
B.S., 1948, Montana State
- MORRISON, JAMES BRYAN, 1946 (1949).....Assistant Professor of Mechanical Engineering
B.S. in M.E., 1943, Virginia Polytechnic Institute
- MORRISON, JOHN WILSON, 1946 (1947).....Instructor in English
B.A., 1937, Washington
- MORRISON, KENNETH NELSON, 1948.....Instructor in Operative Dentistry
D.D.S., 1943, Toronto
- MORROW, CECIL LOVELAND, 1947.....Clinical Instructor in Medicine
B.Sc., 1923, Chicago; M.D., 1928, Rush Medical College
- MORROW, JOHN GEORGE, 1948.....Instructor in Mineral Dressing
B.S., 1947, Queens University (Toronto); M.S., 1948, Washington
- MORSE, HAROLD ALFRED, 1949.....Associate in Sociology
B.A., 1948, Washington
- MORTON, ROBERT JAMES, 1948.....Clinical Instructor in Medicine
A.B., 1939, M.D., 1943, Kansas; M.S., 1947, Minnesota
- MOSELEY, SPENCER, 1948.....Associate in Art
B.A., 1948, Washington
- MOSSMAN, PAUL DARWIN, 1948.....Administrative Consultant, School of Medicine
M.D., 1912, Sterling Ohio Medical College
- MOULTON, RALPH WELLS, 1941 (1945).....Associate Professor of Chemical Engineering
B.S. in Chem. E., 1932, M.S. in Chem. E., 1934, Ph.D., 1938, Washington
- MUELLER, JAMES IRVING, 1949.....Assistant Professor of Ceramic Engineering
B.Cer.E., 1939, Ohio State; Ph.D., 1949, Missouri
- MUHLICK, CLARENCE VICTOR, 1948.....Instructor in Botany
B.S., 1933, Montana

- MUKHERJEE, NALINI RANJAN, 1949..... Associate in Chemical Engineering
B.S., 1939, Calcutta; B.Ch.E., 1943, A.M.Ch.E., 1943, College of Engineering and
Technology (Bengal); D.I.C., 1949, Imperial College of Science and Technology,
(London); Ph.D., 1949, University of London
- MULLEMEISTER, HERMAN, 1918 (1945)..... Associate Professor of Mathematics
B.S., 1911, M.S., 1912, Ph.D., 1913, Royal University of Utrecht (Holland)
- MULLEN, BERNARD PARKER, 1948..... Consultant in Surgery
B.S., 1918, Wisconsin; M.D., 1921, Rush Medical School
- MULVANY, PAUL KENNETH, 1947..... Associate in Chemical Engineering
B.S. in Chem.E., 1944, Washington
- MUMBY, MILDRED, 1946 (1947)..... Clinical Instructor in Dermatology
M.D., 1925, Oregon
- MUMFORD, GLADYS ANN, 1949..... Instructor in Speech
B.S., 1944, State Teachers College (Pennsylvania); M.A., 1948, Iowa
- MUND, VERNON ARTHUR, 1932 (1937)..... Professor of Economics
B.B.A., 1928, M.B.A., 1929, Washington; Ph.D., 1932, Princeton
- MUNRO, KATHLEEN, 1929 (1945)..... Professor of Music
B.M., 1924, Washington; M.A., 1929, Columbia; Ph.D., 1937, Washington
- MURPHY, ARTHUR EDWARD, 1949..... Visiting Professor of Philosophy
A.B., 1923, Ph.D., 1925, California
- MURPHY, HERTA ALBRECHT, 1946..... Lecturer in Secretarial Studies
B.B.A., 1930, M.A., 1942, Washington
- MURPHY, RALPH MASON, 1946 (1947)..... Instructor in Speech
B.A., 1924, Franklin College; M.A., 1929, Wisconsin
- MURPHY, ROBERT CUSHMAN, Jr., 1949..... Clinical Instructor in Psychiatry
B.S., 1938, Harvard; M.D., 1942, Cornell
- MURRAY, MAJOR JOHN WILLIAM, 1949..... Assistant Professor of Military Science and Tactics
B.S., 1932, Washington State
- MURTON, CLARENCE CHARLES, 1943..... Associate in Journalism
B.A., 1924, Washington
- MYLROIE, WILLA W., 1948..... Associate in Civil Engineering
B.S. in C.E., 1940, Washington
- NAIDEN, JAMES RICHARD, 1948..... Assistant Professor of Humanistic-Social Studies
A.B., 1935, M.A., 1936, Iowa; M.A., 1941, Ph.D., 1948, Columbia
- NAMKUNG, HELEN, 1948..... Associate in Japanese Language
B.M., 1940, Toyo Conservatory of Music (Tokyo)
- NAMKUNG, JOHSEL, 1948..... Associate in Japanese Language
B.M., 1940, Toyo Conservatory of Music (Tokyo)
- NAYLOR, RICHARD WILLIAM, 1949..... Acting Assistant Professor of Business Administration
B.S., 1946, Miami (Ohio); M.B.A., 1948, Chicago
- NEDDERMEYER, SETH HENRY, 1946..... Associate Professor of Physics
A.B., 1929, Stanford; Ph.D., 1935, California Institute of Technology
- NELSEN, ROBERT JERRY, 1947..... Assistant Professor of Dental Materials; Executive Officer
Department Dental Materials; Assistant Professor,
Operative Dentistry; Assistant Professor, Dental Radiography
D.D.S., 1940, Minnesota
- NELSON, AVERLY M., 1947..... Clinical Instructor in Medicine
B.S., 1937, Washington; M.D., 1941, Oregon
- NELSON, EDWIN LEONARD, 1948..... Associate in English
B.A., 1936, M.A., 1947, Washington
- NELSON, EVERETT JOHN, 1930 (1941)..... Professor of Philosophy;
Executive Officer of the Department of Philosophy
B.A., 1923, M.A., 1925, Washington; M.A., 1928, Ph.D., 1929, Harvard
- NELSON, JACK N., 1948..... Clinical Instructor in Urology
M.D., 1932, College of Medical Evangelists
- NELSON, JERRY ALLEN, 1948..... Research Associate in Biochemistry
B.S., 1946, Washington
- NELSON, JURT HERBERT, 1949..... Research Associate in Naval Oceanography
B.A., 1948, Reed College
- NELSON, OLE ANDY, 1947..... Lecturer in Nursing
M.D., 1913, University of Louisville
- NELSON, OLIVER WENDELL, 1945 (1947)..... Assistant Professor of Speech
B.A., 1933, M.A., 1939, Ph.D., 1949, Washington
- NEVA, ARNOLD CARL, 1947 (1949)..... Assistant Professor of Pharmacy
B.S., 1941, M.S., 1943, Ph.D., 1947, Minnesota

- NEWKIRK, PAUL RICHARD, 1944 (1949). Lecturer in Nursing; Clinical Affiliate in Psychiatry
M.D., 1911, Heidelberg (Germany)
- NEWMAN, CHARLES WYNN, Jr., 1947.....Instructor in Mechanical Engineering
B.S. in M.E., 1941, B.S. in Mar. E., 1941, Michigan
- NEWMAN, HERBERT MARTIN, 1949.....Associate in Ceramic Engineering
B.S., 1948, Washington
- NIEDER, ERIKA ELYANE DESSAUER, 1948.....Associate in Romance Languages
and Literature
Baccalaureat, 1940, Collège Jules Ferry (France)
- NISHI, MIDORI, 1948.....Associate in Geography
B.A., 1945, Nebraska Wesleyan; M.A., 1946, Clark University
- NIX, MARTHA JEANNETTE, 1928 (1947).....Assistant Professor of English
B.A., 1922, M.A., 1925, Washington
- NORDQUIST, WILLIAM BERTIL, 1947 (1949). Assistant Professor of Mechanical Engineering
B.M.E., 1941, Rensselaer Polytechnic Institute (New York); M.S., 1946, Massachusetts
Institute of Technology
- NORGORE, MARTIN, 1946.....Clinical Associate in Anatomy
B.S., 1921, Washington; M.D., 1926, Oregon
- NORMANN, THEODORE FREDERICK, 1940.....Associate Professor of Music
B.A., 1925, Macalaster College (Minnesota); M.A., 1928, Columbia
- NORRIS, EARL RALPH, 1927 (1940).....Professor of Chemistry
B.S., 1919, Montana State; Ph.D., 1924, Columbia
- NORTHROP, CEDRIC, 1947.....Clinical Instructor in Public Health and Preventive Medicine
B.A., 1930, M.D., 1936, Oregon
- NORTHROP, MARY WATSON, 1931.....Instructor in Nursing
B.A., 1920, Vassar; M.S., 1923, Columbia
- NORTON, RODERICK ARTHUR, 1946.....Lecturer in Nursing
A.B., 1934, M.D., 1937, Michigan
- NOSTRAND, HOWARD LEE, 1939.....Professor of Romance Languages; Executive
Officer of the Department of Romance Languages and Literature
B.A., 1932, Amherst; M.A., 1933, Harvard; Docteur, 1934, Université de Paris
- NOTTELMANN, RUDOLPH HANS, 1927.....Professor of Law
A.B., 1912, Monmouth College (Illinois); M.A., 1913, Illinois; LL.B., 1922, Yale
- NOVIKOW, ELIAS THEODORE, 1947 (1948).....Instructor in Russian Language
B.M., 1939, Oklahoma; M.Mus., 1942, Michigan; M.A., 1946, Washington
- NUCKOLS, HUGH HUNTER, 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1930, Washington; M.D., 1934, Pennsylvania
- O'BRIEN, JAMES HOWARD, 1949.....Associate in English
B.A., 1943, Seattle College; M.A., 1946, Washington
- O'BRIEN, ROBERT WILLIAM, 1939 (1949).....Associate Professor of Sociology
A.B., 1929, Pomona; A.M., 1931, Oberlin; Ph.D., 1945, Washington
- O'BRYAN, JOSEPH GRATTAN, 1914 (1947).....Professor Emeritus of Law;
Research Assistant to the Law Librarian
B.A., 1893, Jesuit College (Denver); LL.D., 1928, Regis College (Denver)
- OBST, FRANCES MELANIE, 1944.....Assistant Professor of Home Economics
B.S., 1934, M.A., 1938, Minnesota
- ODELL, HOWARD HARRY, 1948.....Associate in Physical Education; Head Football Coach
B.S., 1934, Pittsburgh
- OGDEN, HAROLD GRANT, 1950.....Associate in English
B.A., 1947, Whitman College
- OGILVIE, ALFRED LIVINGSTON, 1948 (1949).....Assistant Professor of Periodontology
D.D.S., 1944, Toronto; M.S., 1948, California
- OHMAN, ALBERT C., 1948.....Clinical Instructor in Urology
M.D., 1932, Colorado
- OLCOTT, VIRGINIA, 1931 (1945).....Associate Professor of Nursing
R.N., 1926, Peter Bent Brigham Hospital (Boston); B.S., 1927, M.S., 1931, Washington
- OLEN, KEITH FLOYD, 1947.....Associate in Geology
B.S., 1943, Washington
- OLSEN, BJARNE, 1948.....Acting Instructor in Architecture
B.Arch., 1938, Washington
- OLSON, DONALD ALBERT, 1948.....Lecturer in Industrial Management
B.A., 1942, M.B.A., 1946, Northwestern
- O'NEIL, GORDON BLAKE, 1948.....Clinical Associate in Orthopedics
B.S., 1932, Washington; M.D., C.M., 1936, McGill University (Montreal)

- ORDAL, ERLING JOSEF, 1937 (1943).....Associate Professor of Microbiology
A.B., 1927, Luther College (Iowa); Ph.D., 1936, Minnesota
- ORELL, BERNARD L., 1947.....Assistant Professor of Forestry
B.S., 1939, M.F., 1941, Oregon State
- ORR, DOUGLASS WINNETT, 1941 (1947).....Clinical Instructor in Psychiatry
A.B., 1928, Swarthmore; M.S., 1934, M.D., 1935, Northwestern
- ORR, FREDERICK WESLEY, 1925 (1948).....Professor Emeritus of Speech; Research Consultant
B.L., 1901, Drury (Missouri); G.C.D., 1905, Boston School of Expression;
M.A., 1925, Lawrence College (Wisconsin)
- OSBORN, CHARLES FRANCIS, 1950.....Associate Lecturer in Estate Planning
A.B., 1938, Notre Dame; LL.B., 1941, Harvard
- OSBORNE, HOMER DOUGLAS, 1949.....Instructor and Curator in Anthropology
B.A., 1938, M.A., 1941, New Mexico
- OSBURN, WORTH JAMES, 1936.....Professor of Remedial and Experimental Education
A.B., 1903, Central College (Missouri); A.M., 1904, Vanderbilt; B.S., 1910, Missouri;
Ph.D., 1921, Columbia
- OSMUN, PAUL MILLER, 1949.....Clinical Instructor in Surgery and Anatomy
A.B., 1932, Brown; M.D., C.M., 1938, McGill
- OSTERUD, KENNETH LELAND, 1949.....Assistant Professor of Zoology
B.A., 1935, Randolph-Macon; Ph.D., 1941, New York
- OSTERHAUG, KATHRYN L., 1949.....Lecturer in Fisheries
B.S., 1943, Washington
- OWEN, DONALD BRUCE, 1946.....Associate in Mathematics
B.S., 1945, M.S., 1946, Washington
- OWENS, BERL WINFIELD, 1948.....Instructor in Mechanical Engineering
B.Aero.E., 1944, Minnesota
- PAHN, VADIM OTTO, 1946 (1948).....Instructor in Russian Language
B.A., 1935, B.S.Agr., 1938, British Columbia
- PALMER, LESTER JOERG, 1947.....Clinical Professor of Medicine
M.D., 1914, Northwestern
- PALMER, VINSON LE ROY, 1943 (1948).....Assistant Professor of Electrical Engineering
B.S. in E.E., 1940, M.S. in E.E., 1948, Washington
- PALMQUIST, EMIL EUGENE, 1944 (1946).....Clinical Assistant Professor of Public
Health and Preventive Medicine
B.A., 1930, Gustavus Adolphus College (Minnesota); B.M., 1936, M.D., 1937,
Northwestern; M.P.H., 1942, Michigan
- PAQUETTE, ROBERT GEORGE, 1949.....Research Associate in Naval Oceanography
B.S., 1936, Ph.D., 1941, Washington
- PARKER, DEAN, 1948.....Clinical Instructor in Urology
B.S., 1933, M.D., 1939, Iowa
- PARKER, HERBERT M., 1948.....Senior Consultant in Radiology
B.S., 1930, M.S., 1931, Manchester University (England)
- PARKER, STEPHEN THOMAS, 1947.....Clinical Professor of Dermatology
M.D., 1921, Creighton (Nebraska); B.S., 1923, Gonzaga (Spokane)
- PARKS, DORIS HAZEL, 1947.....Instructor in Home Economics
B.S., 1940, Illinois; M.B.A., 1948, Northwestern; C.P.A., 1947, State of Illinois
- PARKS, FRANK LOVERN, 1946 (1948).....Instructor in Sociology
B.A., 1929, B.E., 1929, M.A., 1931, Colorado
- PATTERSON, AMBROSE MCCARTHY, 1919 (1947).....Professor Emeritus of Painting;
Consultant in Painting
National School of Art (Melbourne); Juliens, Colorossi, Delaclone, Whistler Simon and
Lhote Schools of Art (Paris)
- PATTERSON, LILLIAN BEATRICE, 1945 (1946).....Assistant Professor of Nursing
R.N., 1923, Presbyterian Hospital (Chicago); B.A., 1941, C.P.H.N., 1942,
M.A., 1943, Washington
- PATTERSON, VIOLA HANSEN, 1947.....Instructor in Art
B.A., 1921, B.S. in L.S., 1921, B.F.A., 1925, M.F.A., 1947, Washington
- PATTON, HARRY DICKSON, 1947.....Assistant Professor of Physiology
B.A., 1939, Arkansas; Ph.D., 1943, M.D., 1946, Yale
- PAULSON, EDWARD, 1947 (1948).....Assistant Professor of Mathematics
B.A., 1936, Brooklyn College (New York); M.A., 1938, Ph.D., 1948, Columbia
- PAUTZKE, CLARENCE F., 1948.....Lecturer in Fisheries
B.S., 1932, Washington
- PAYNE, BLANCHE, 1927 (1942).....Professor of Home Economics
B.S., 1916, Kansas State Teachers College; M.A., 1924, Columbia

- PEACOCK, ALEXANDER HAMILTON, 1948.....Senior Consultant in Urology
M.D., 1903, Pennsylvania
- PEACOCK, ANDREW CLINTON, 1949.....Research Associate in Pathology
S.B., 1943, S.M., 1947, Ph.D., 1949, Massachusetts Institute of Technology
- PEARCE, JOHN KENNETH, 1934 (1943).....Professor of Logging Engineering
B.S.F., 1921, Washington
- PEARSON, CLARENCE COPLYN, 1948.....Clinical Instructor in Medicine
B.A., 1934, M.D., 1937, Texas; M.S., 1947, Minnesota
- PEARSON, HARRY S., 1950.....Lecturer in Journalism
- PEARSON, JUDSON BRUCE, 1949.....Associate in Sociology
B.A., 1946, M.P.S., 1947, M.A., 1949, Colorado
- PECHET, MELEO SAMUEL, 1949.....Instructor in Mining Engineering
B.S., 1935, Alberta; M.A., 1946, Harvard
- PEDERSEN, GLENN MALVERN, 1949.....Associate in English
B.S., 1942, Northern State Teachers College (North Dakota)
- PEDERSEN, ROBERT KENNETH, 1950.....Lecturer in Fisheries
B.S., 1941, Washington
- PEEK, CLIFFORD LAVERNE, 1938.....Assistant Professor of Physical Education
B.S., 1929, Washington; M.A., 1931, Columbia
- PEELING, VIVIAN S., 1947.....Associate in English
B.A., 1925, Smith
- PELLEGRINI, ANGELO M., 1930 (1945).....Assistant Professor of English
B.A., 1927, Ph.D., 1942, Washington
- PELZ, FRED A., 1948.....Associate in Secretarial Studies
B.B.A., 1922, M.A., 1929, Washington
- PENCE, ORVILLE LEON, 1941 (1946).....Assistant Professor of Speech
B.A., 1935, M.A., 1939, Washington; Ph.D., 1946, Iowa
- PENINGTON, RUTH ESTHER, 1928 (1943).....Associate Professor of Art
B.F.A., 1927, M.F.A., 1929, Washington
- PENNINGTON, DERROL ELWOOD, 1948 (1950).....Assistant Professor of Microbiology
B.A., 1938, Reed College; Ph.D., 1942, Texas
- PENNOCK, RAYMOND PHILIP, 1950...Associate in Accounting, Management, and Statistics
B.A., 1949, Washington
- PERKS, LILIAN CHARLOTTE, 1942 (1947).....Acting Instructor in Mathematics
B.A., 1905, M.A., 1905, St. Andrews (Scotland); B.S., 1906, Edinburgh (Scotland)
- PERRIN, PORTER GALE, 1947.....Professor of English
A.B., 1917, Dartmouth; M.A., 1921, Maine; Ph.D., 1936, Chicago
- PERRIN, THEODORE LORAIN, 1949.....Clinical Assistant Professor of Pathology
B.S., 1931, South Dakota; B.M., 1934, M.D., 1935, Northwestern
- PERRY, HERBERT ALLEN, 1949.....Clinical Affiliate in Psychiatry
A.B., 1929, Denver; M.D., 1933, Colorado
- PERSON, HENRY AXEL, 1937 (1947).....Assistant Professor of English
B.A., 1927, Ph.D., 1942, Washington
- PETERS, FREDERICK MOORE, 1949.....Clinical Instructor in Psychiatry
B.S., 1936, Washington; B.M., 1941, M.D., 1943, M.S., 1949, Northwestern
- PETERSEN, EVALD, 1949.....Lecturer in Accounting
B.S., 1937, Denver
- PETERSON, CLAIRE G., 1944.....Associate in Music
B.A., 1945, Washington
- PETERSON, KEENE, 1949.....Associate in Economics
B.A., 1947, Washington
- PETERSON, LEONARD DAVID, 1948.....Associate in Mechanical Engineering
- PETERSON, LOREN ALLEN, 1948.....Lecturer in Fisheries
- PETERSON, PAUL GILBERT, 1948.....Clinical Instructor in Obstetrics and Gynecology
A.B., 1927, St. Olaf College; M.D., 1932, Rush Medical College
- PETERSON, PHILIP LESLIE, 1947.....Clinical Instructor in Medicine
A.B., 1926, St. Olaf College; M.D., 1931, Rush Medical College
- PETTIBONE, EARL WINTON, JR., 1947.....Assistant Professor of Economics
B.A., 1939, Washington; M.A., 1940, Haverford College (Pennsylvania)
- PETTIBONE, MARION HOPE, 1945 (1947).....Instructor in Zoology
B.S., 1930, Linfield College (Oregon); M.S., 1932, Oregon; Ph.D., 1947, Washington
- PEYMAN, DOUGLAS ALASTAIR RALPH, 1947.....Associate in Psychology
B.A., 1943, M.A., 1946, British Columbia

- PHAIR, W. PHILIP, 1948.....Clinical Instructor in Pedodontics
and in Postgraduate Dental Education
D.D.S., 1945, Iowa; M.P.H., 1948, Michigan
- PHILBRICK, WARREN WHEELER, 1947 (1948).....Assistant Professor of Mechanical
Engineering; Assistant Director, Engineering Experiment Station
B.S. in M.E., 1938, Washington; M.B.A., 1940, Harvard
- PHILLIPS, JAMES WINSTON, 1949.....Clinical Associate in Surgery and Lecturer in Speech
B.S., 1934, M.D., 1938, Stanford
- PHILLIPS, JAMES YOUNG, 1948.....Clinical Associate in Neurosurgery
M.D., C.M., 1940, McGill University (Montreal)
- PHILLIPS, RONALD PICKERING, 1936.....Associate in Music
- PHILLIPS, WILLIAM LOUIS, 1949.....Instructor in English
B.A., 1942, Iowa State Teachers College; M.A., 1947, Chicago
- PIFER, DRURY AUGUSTUS, 1945 (1948).....Professor of Mining Engineering;
Director of the School of Mineral Engineering
B.S. in Min. Engr., 1930, M.S. in Min. Engr., 1931, Washington
- PINKHAM, ROLAND DAVIS, 1948.....Clinical Instructor in Surgery
B.S., 1934, Washington; M.D., 1939, Stanford
- PINYAN, FRANCES ADELAIDE GREGG, 1949.....Instructor in Nursing
R.N., 1947, St. Helena School of Nursing (California); B.S., 1949, Pacific Union College
- PLANT, ROBERT KEDZIE, 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1929, Michigan State College; M.D., 1932, Michigan
- PLATT, VIRGINIA PROVINE, 1943 (1945).....Acting Instructor in Physics
B.S. in M.E., 1945, Washington
- PLEBUCH, KARL FLOYD, 1949.....Associate in Accounting
B.A., 1949, Washington
- PLEIN, ELMER MICHAEL, 1938 (1945).....Associate Professor of Pharmacy
Ph.C., 1929, B.S., 1929, M.S., 1931, Ph.D., 1936, Colorado
- PLUMMER, RALPH E., 1948.....Clinical Instructor in Dental Materials
D.M.D., 1914, North Pacific College
- POLITZER, ROBERT LOUIS, 1949.....Instructor in French
B.A., 1941, M.A., 1943, Washington University (St. Louis); Ph.D., 1947, Columbia;
D.S.Sc., 1950, New School for Social Research
- POMMERENING, ROBERT ALVIN, 1948.....Clinical Instructor in Medicine
A.B., 1938, M.D., 1942, Michigan
- POOLE, H. GORDON, 1947 (1949).....Associate Professor of Mineral Engineering
B.S. in Min. Engr., 1931, Case Institute of Technology (Cleveland); M.S., 1932, Idaho
- POORMAN, FLORENCE MARGARET, 1949.....Associate in Speech
B.A., 1940, Washington
- POPPE, NICHOLAS NIKOLAEVICH, 1949.....Visiting Professor of Far Eastern and
Slavic Languages and Literature
Masters, 1923, Petrograd; Ph.D., 1934, Petersburg University (Russia)
- PORTER, RAYMOND GEORGE, SKC, USN, 1947.....Instructor in Naval Science
- POSELL, EDWARD A., 1938 (1949).....Lecturer in Nursing; Clinical Affiliate in Psychiatry
B.S., 1923, College of the City of New York; M.D., 1927, Boston University
- POTTER, ROBERT TIPPETT, 1949.....Clinical Instructor in Medicine
B.S., 1937, M.B., 1939, M.D., 1940, Minnesota; M.P.H., 1944, Johns Hopkins
- POWELL, ARCHIE CAMPBELL, 1949.....Clinical Instructor in Surgery
B.S., 1936, M.D., 1936, Nebraska
- POWELL, SARGENT GASTMAN, 1919 (1943).....Professor of Chemistry
B.S., 1916, M.S., 1916, Washington; Ph.D., 1920, Illinois
- POWERS, FRANCIS FOUNTAIN, 1928 (1939).....Professor of Educational Psychology;
Dean of the College of Education
B.A., 1923, Ph.D., 1928, Washington; M.A., 1927, Oregon
- POWERS, LELAND EARLE, 1946.....Director of Health Center;
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 P.H., 1939, Michigan
- PRATT, FRANK HAWLEY, 1946 (1947).....Associate Professor of Oral Anatomy
D.M.D., 1916, North Pacific College
- PRESSLY, THOMAS JAMES, 1949 (1950).....Assistant Professor of History
A.B., 1940, A.M., 1941, Ph.D., 1949, Harvard
- PRESTON, HOWARD HALL, 1920 (1922).....Professor of Money and Banking;
Executive Officer of the Department of Business Finance, Banking, and
Insurance; Dean Emeritus of the College of Economics and Business
B.S., 1911, LL.D., 1938, Coe College (Iowa); M.A., 1914, Ph.D., 1920, Iowa

- PRIES, LIONEL HENRY, 1928 (1948).....Professor of Architecture
A.B., 1920, California; M.Arch., 1921, Pennsylvania
- PRINS, ROBERT FREDERICK, 1947.....Associate in English
B.A., 1942, M.A., 1947, Washington
- PRINS, RUTH BALKEMA, 1947.....Associate in Drama
B.A., 1942, Washington
- PUGH, CHARLES LAMAR, SKC, 1949.....Instructor in Naval Science
- PULLEN, ROSCOE L. ROY, 1947.....Associate Professor of Medicine;
Director of Hospital Planning
B.A., 1935, Knox College (Illinois); B.M., 1939, M.D., 1940, Northwestern
- PURDUE, ROBERT ALLEN, 1946.....Lecturer in Business Law
B.A., 1939, LL.B., 1942, Washington
- PURVIS, ALBERT LEROY, 1949.....Associate in Chemical Engineering
B.S., 1945, M.S., 1949, Washington
- PUTNAM, GARTH LOUIS, 1947....Research Associate in the Engineering Experiment Station
B.S., 1935, M.S., 1937, Washington; Ph.D., 1942, Columbia
- RABINOVITCH, BENTON SEYMOUR, 1948.....Assistant Professor of Chemistry
B.S., 1939, Ph.D., 1942, McGill University (Montreal)
- RABINOWITZ, WILSON GERSON, 1948.....Instructor in Greek and Latin
A.B., 1940, California
- RADCLIFFE, DONALD GREGG, 1947 (1948).....Assistant Professor of Architecture
B.S. in C.E., 1932, M.S. in C.E., 1934, Illinois
- RADER, MELVIN MILLER, 1930 (1948).....Professor of Philosophy
B.A., 1925, M.A., 1927, Ph.D., 1929, Washington
- RAHSKOPF, HORACE G., 1928 (1944).....Professor of Speech;
Executive Officer of the Department of Speech
B.A., 1920, Willamette (Oregon); M.A., 1927, Ph.D., 1935, Iowa
- RALPH, PAUL HERBERT, 1947.....Assistant Professor of Anatomy
B.A., 1936, Westminster College (Missouri); M.S., 1937, Oklahoma A and M;
Ph.D., 1942, Michigan
- RAMSAY, JOHN FINLAY, 1948.....Clinical Instructor in Surgery
B.S., 1926, Washington; M.D., 1930, Oregon
- RANCK, GLORIA VIRGINIA, 1950.....Associate in Speech
B.A., 1938, Earlham College (Indiana)
- RANKERT, EDWARD HENRY, QMC, USN, 1947.....Instructor in Naval Science
- RANKIN, ESTELLE ALITA, 1946 (1949).....Lecturer in Geography
B.S., 1932, Washington; M.A., 1935, Columbia
- RANKIN, ROBERT M., 1948.....Clinical Instructor in Medicine; Lecturer in Nursing
B.S., 1937, Washington; M.D., 1942, Johns Hopkins
- RANSOM, RENO PAUL, 1950.....Associate Lecturer in Estate Planning
LL.B., 1917, Michigan
- RASKIND, LEO J., 1948.....Associate in Economics
B.A., 1942, University of California at Los Angeles
- RAY, DIXY LEE, 1945 (1947).....Assistant Professor of Zoology
B.A., 1937, M.A., 1938, Mills; Ph.D., 1945, Stanford
- RAY, ROBERT DURANT, 1948.....Assistant Professor of Surgery
A.B., 1936, M.A., 1938, California; M.D., 1943, Harvard
- RAY, VERNE FREDERICK, 1933 (1947).....Professor of Anthropology;
Associate Dean, Graduate School
B.A., 1931, M.A., 1933, Washington; Ph.D., 1937, Yale
- RAY, LIEUT. WILLIAM LEE, 1949.....Assistant Professor of Air Science and Tactics
- RAYMOND, MARGARET HEIMBACH, 1949.....Associate in Chemistry
B.S., 1947, California
- REA, ROBERT HOMER, 1949.....Clinical Affiliate in Psychiatry
B.S., 1901, Chicago; M.D., 1903, Rush Medical College
- READ, WILLIAM MERRITT, 1927 (1945).....Professor of Classical Languages; University
Editor; Director of the University Press
A.B., 1923, DePauw; A.M., 1924, Ph.D., 1927, Michigan
- REAUGH, DANIEL M., 1945.....Lecturer in Law
A.B., 1932, Washington State; J.D., 1936, Washington; J.S.D., 1940, Yale
- REDFORD, GRANT H., 1945.....Assistant Professor of English
B.S., 1937, Utah State; M.A., 1940, Iowa
- REDMAN, HAMILTON MATTHEW, 1950.....Associate Lecturer in Estate Planning
B.S., 1930, Pennsylvania State

- REED, CARROLL EDWARD, 1946 (1948).....Assistant Professor of Germanic Languages
B.A., 1936, M.A., 1937, Washington; Ph.D., 1941, Brown
- REED, SAMUEL IRVING, 1949.....Clinical Affiliate in Public Health and Preventive Medicine
B.S., 1940, Washington
- REEDER, S. DARRELL, 1949.....Research Associate in Naval Oceanography
B.S., 1943, M.S., 1944, Utah
- REEKIE, RICHARD DOUTY, 1948.....Clinical Associate in Obstetrics and Gynecology
Ph.C., 1925, B.S., 1927, Washington; M.D., 1933, Michigan
- REEVES, GEORGE SPENCER, 1935 (1948).....Associate Professor of Physical Education
and Public Health and Preventive Medicine
B.S., 1933, Oregon State; M.S., 1938, Oregon
- REICHERT, ROBERT GEORGE, 1948.....Acting Instructor in Architecture
B.Arch., 1947, Minnesota
- REIFLER, ERWIN, 1947 (1948).....Associate Professor of Chinese Language
Dr. Rer. Pol., 1931, Vienna
- REISS, GRACE DEWEY, 1945.....Supervisor of Field Work in Graduate School of Social Work
B.A., 1932, Iowa; M.A., 1940, Minnesota
- REMBE, ARMIN, 1947.....Clinical Assistant Professor of Pediatrics
B.S., 1922, M.D., 1925, Northwestern
- RHEA, CAPT. FRANK WILLIAM, U.S.A., 1947.....Assistant Professor of
Military Science and Tactics
B.S., 1943, U.S. Military Academy; M.S., 1947, Iowa
- RHEES, MARK CHARLES, 1947.....Research Associate in Pathology
B.S., 1938, Utah Agricultural College; M.S., 1941, Texas A. and M.
- RHODES, FRED HAROLD, JR., 1927 (1943).....Associate Professor of Civil Engineering
B.S. in C.E., 1926, B.S. in M.E., 1926, C.E., 1935, Washington
- RHYNSBURGER, WILLERT, 1948.....Instructor in Geography
B.A., 1937, M.A., 1946, Washington
- RICE, GLEN GRIFFITH, 1949.....Associate in Obstetrics and Gynecology
A.B., 1938, Pacific University; M.D., 1942, Oregon
- RICHARDS, FRANCIS ASBURY, 1949.....Research Associate in Naval Oceanography
B.S., 1939, Illinois; M.S., 1942, Nevada
- RICHARDS, JOHN WILLIS, 1931 (1937).....Professor of Law
B.A., 1923, Wisconsin; LL.B., 1926, LL.M., 1930, S.J.D., 1931, Harvard
- RICHARDS, LAURA ELLEN, 1948.....Lecturer in Social Work
A.B., 1922, Oberlin; M.S.S., 1933, Smith College
- RICHARDSON, JACKSON CHILDRESS, 1949.....Acting Assistant Professor of Accounting
B.A., 1946, Washington; M.B.A., 1948, Pennsylvania
- RICHARDSON, WILLIAM W., 1947 (1949).....Clinical Instructor in Medicine;
Lecturer in Nursing
B.A., 1934, Amherst (Massachusetts); M.D., 1938, Pennsylvania
- RICHEIMER, JAMES WALTER, 1947 (1948).....Acting Instructor in German
A.B., 1944, University of Louisville; M.A., 1947, Columbia
- RICHINS, WILLIAM DWAIN, 1946.....Associate in Marketing
B.A., 1936, Brigham Young University; M.B.A., 1938, Louisiana State
- RICKER, WALTER ALBRA, JR., 1946 (1949).....Associate Professor of Pathology
M.D., 1939, Marquette (Wisconsin)
- RICKLES, NATHAN K., 1948.....Clinical Instructor in Psychiatry
B.S., 1927, M.D., 1928, Northwestern
- RIEDEL, RICHARD ANTHONY, 1949.....Instructor in Orthodontics
D.D.S., 1945, Marquette; M.D.S., 1948, Northwestern
- RIEKE, LUVERN VICTOR, 1949.....Instructor in Law
B.S., 1948, LL.B., 1949, Washington
- RIGG, GEORGE BURTON, 1909 (1947).....Professor Emeritus of Botany;
Research Consultant in the Department of Botany
B.S., 1896, Iowa; M.A., 1909, Washington; Ph.D., 1914, Chicago
- RILEY, JOHN BRANSON, 1948.....Clinical Instructor in Psychiatry
B.S., 1933, M.B., 1933, M.D., 1934, Minnesota
- RILEY, THOMAS JAMES, JR., 1949.....Clinical Instructor in Prosthodontics
A.B., 1932, D.D.S., 1936, Columbia
- RILEY, WALTER LEE, 1946.....Acting Assistant Professor of Political Science
B.A., 1933, Adams State College (Colorado); M.A., 1935, Stanford
- RIMLINGER, GASTON VICTOR, 1948.....Associate in Romance Languages and Literature

- RINGLE, ARTHUR LEVI, 1946.....Clinical Associate Professor of Public Health and Preventive Medicine
M.D., 1935, Colorado; C.P.H., 1937, Minnesota
- RIPLEY, HERBERT SPENCER, 1949.....Professor of Psychiatry; Executive Officer of the Department of Psychiatry
A.B., 1929, Michigan; M.D., 1933, Harvard
- RISEGARI, EILENE FRENCH, 1945 (1948).....Assistant Professor of Music
B.Mus., 1916, Washington; M.A., 1920, Columbia
- RISING, LOUIS WAIT, 1934 (1936).....Professor of Pharmacy
Ph.G., 1924, B.S., 1924, Oregon State; M.S., 1926, Ph.C., 1928, Ph.D., 1929, Washington
- RITLAND, HAROLD NELSON, 1949.....Assistant Professor of Physics
B.A., 1944, St. Olaf College; Ph.D., 1949, Wisconsin
- RITTER, DAVID MOORE, 1944 (1948).....Acting Associate Professor of Chemistry
S.B., 1933, Ph.D., 1937, Chicago
- RIVENBURGH, VIOLA K., 1944.....Associate in English
A.B., 1919, Neurasaka; M.A., 1926, University of Hawaii
- ROBBINS, FLOYD DAVID, 1946 (1947).....Instructor in Electrical Engineering
B.S. in E.E., 1925, E.E., 1949, Washington
- ROBERTS, EDWARD WILLIAM, 1948.....Clinical Instructor in Radiology
B.S., 1929, B.M., 1931, M.D., 1932, Minnesota
- ROBERTS, JAMES RUSSELL, 1946.....Assistant Professor of English
B.A., 1930, M.A., 1931, Washington State; Ph.D., 1940, Washington
- ROBERTS, MILNOR, 1901 (1947).....Professor Emeritus of Mineral Engineering; Dean Emeritus of the College of Mines
B.A., 1899, Stanford
- ROBERTSON, JAMES CAMPBELL HAY, 1945.....Associate Professor of Forest Management
B.S.F., 1927, Washington; M.S.F., 1933, California; Dr.F., 1947, Duke
- ROBINSON, ELIZABETH T. MILLS, 1947 (1949).....Assistant Professor of Medical Social Work; Clinical Associate in Public Health and Preventive Medicine
A.B., 1931, Washington; M.S., 1933, Washington University (St. Louis)
- ROBINSON, JOHN FRANKLIN, 1949.....Lecturer in General Business
B.S., 1941, Seattle College; LL.B., 1948, Washington
- ROBINSON, REX JULIAN, 1929 (1945).....Professor of Chemistry
B.A., 1925, DePauw; M.A., 1927, Ph.D., 1929, Wisconsin
- ROCHLITZ, IMRE, 1948.....Associate in Serbo-Croatian Language
B.B.A., 1949, Washington
- ROETHKE, THEODORE HUEBENER, 1947 (1948).....Professor of English
A.B., 1929, A.M., 1936, Michigan
- ROGERS, ARTHUR ERNEST THEODORE, 1948.....Clinical Instructor in Medicine
B.A., 1924, Columbia; M.D., 1927, Yale
- ROGERS, CALVIN ABRAHAM, 1947.....Associate in Mathematics
B.A., 1944, Washington State
- ROGERS, WALTER EDWIN, 1946 (1949).....Assistant Professor of Electrical Engineering
B.S. in E.E., 1934, California; M.S. in E.E., 1948, Washington
- ROGGE, EDGAR ANDREAS, 1948.....Clinical Associate in Orthopedics
B.S., 1931, Washington; M.D., 1933, George Washington University
- ROHRER, JOHN ABRAM, 1948 (1949).....Acting Instructor in Architecture
B.Arch., 1937, Washington
- ROLL, LEWIS ROBERT, 1948.....Clinical Insrtuctor in Medicine
B.S., 1931, M.D., 1941, Chicago
- ROLLEFSEN, GUNNAR, 1949.....Lecturer in Fisheries
Cand. Real., 1931, Oslo
- ROLLER, JULIUS ABRAHAM, 1945.....Assistant Professor of Accounting
B.B.A., 1934, Washington
- ROLLINS, FRANCIS W., 1948.....Instructor in General Engineering
B.S., 1937, Worcester Polytechnic Institute (Massachusetts)
- ROLLINS, PAUL R., 1948.....Consultant in Obstetrics and Gynecology
Ph.C., 1924, B.S., 1924, Washington; M.D., 1928, Washington University (St. Louis)
- ROMAN, HERSCHEL LEWIS, 1942 (1947).....Associate Professor of Botany
A.B., 1936, Ph.D., 1942, Missouri
- RONEY, WARD WILLIAM, 1950.....Associate Judge of Law
LL.B., 1927, Washington
- ROOM, THOMAS GERALD, 1948.....Visiting Professor of Mathematics
M.A., 1926, University of Cambridge (England)

- ROOT, CATHERINE ADAMS, 1946.....Instructor in Music
B.A., 1929, B.M., 1930, Coe College; M.A., 1932, Columbia
- ROOT, CORNELIUS, 1947.....Director of Laboratories in the School of Journalism
- ROSE, THELMA SOULE, 1946 (1947).....Instructor in Home Economics
B.S., 1940, Washington
- ROSE, VIRGIL L., 1949.....Clinical Instructor in Operative Dentistry
D.M.D., 1926, Oregon
- ROSELLINI, LEO JOHN, 1948 (1949).....Clinical Associate in Surgery and in Anatomy
Ph.G., 1931, California; B.S., 1932, University of San Francisco; M.D., 1937, Creighton
(Nebraska)
- ROSEN, MORITZ, 1909 (1947).....Professor Emeritus of Music; Examiner of Strings
Graduate, Warsaw Conservatory, Russia
- ROSENBERG, REINHARDT MATHIAS, 1948..Associate Professor of Aeronautical Engineering
B.S. in C.E., 1941, Pittsburgh; M.S. in Aero. Engr., 1946, Purdue
- ROSINBUM, RALPH RAMBO, 1948.....Associate in Drama
B.A., 1947, M.A., 1948, Washington
- ROSS, WALTER E., JR., 1949.....Instructor in Architecture
B.Arch., 1948, M.Arch., 1949, Harvard
- ROSSBACH, CHARLES EDMUND, 1947 (1948).....Assistant Professor of Art
B.A., 1940, Washington; M.A., 1941, Columbia; M.F.A., 1947, Cranbrook Academy
of Art (Michigan)
- ROSTAD, HENRY, 1948.....Lecturer in Fisheries
- ROTTON, GLENN NELSON, 1948.....Consultant in Obstetrics and Gynecology
B.S., 1922, M.D., 1922, Iowa
- ROSELL, CURTIS JAY, QMC, 1949.....Instructor in Naval Science
- ROWE, EDWARD A., 1948 (1949).....Associate Professor of Metallurgical Engineering
B.S., 1935, M.S., 1939, Ph.D., 1948 Michigan State
- ROWLAND, JULIA OLIVE, 1947.....Instructor in Nursing
R.N., 1941, Consolidated Deaconess School of Nursing (Montana); B.S., 1947, Washington
- ROWLANDS, THOMAS McKIE, 1928 (1943).....Associate Professor of General Engineering
B.S., 1926, Massachusetts Institute of Technology
- ROWLEY, ELLEN MARIE, 1947.....Acting Instructor in Physical Education
A.B., 1942, Macalester College (Minnesota); M.Ed., 1943, Minnesota
- ROWNTREE, JENNIE IRENE, 1925 (1932).....Professor of Home Economics;
Director of the School of Home Economics
B.S., 1918, Wisconsin; M.S., 1925, Chicago; Ph.D., 1929, Iowa
- ROYS, RALPH LOVELAND, 1948...Honorary Research Assistant Professor of Anthropology
Ph.B., 1900, Michigan; H.L.D., 1936, Whitman
- ROUSH, ALAN H., 1949.....Research Associate in Biochemistry
B.S., 1940, Montana State College
- RUCH, THEODORE CEDRIC, 1946.....Professor of Physiology;
Executive Officer of the Department of Physiology and Biophysics
B.A., 1927, Oregon; M.A., 1928, Stanford; B.A., 1930, B.S., 1932, Oxford; Ph.D., 1933, Yale
- RULIFSON, LEONE HELMICH, 1926 (1943).....Associate Professor of Physical Education
B.S., 1922, M.A., 1936, Washington
- RUPP, NATALIE COLES, 1947 (1948).....Instructor in Humanistic-Social Studies
B.A., 1945, University of California at Los Angeles
- RUSHMER, ROBERT FRAZER, 1947.....Assistant Professor of Physiology
B.S., 1936, Chicago; M.D., 1939, Rush Medical College
- RUSTAD, JOHN, 1948.....Associate in Humanistic-Social Studies
B.A., 1948, M.A., 1949, Washington
- RUSTEBAKKE, HOMER MARTIN, 1947 (1949).....Assistant Professor of Electrical Engineering
B.S., 1941, Polytechnic College of Engineering (Oakland); M.S., 1945, Pittsburgh
- RUTHERFORD, FREDERICK WARNER, 1942.....Lecturer in Nursing
A.B., 1930, Illinois; M.D., 1935, Harvard
- RUTHERFORD, ROBERT NORTHWALL, 1948.....Clinical Instructor in Obstetrics
and Gynecology
A.B., 1932, Illinois; M.D., 1936, Harvard
- RUTLEDGE, IVAN CATE, 1947.....Assistant Professor of Law
B.A., 1934, Carson-Newman College (Tennessee); M.A., 1940, LL.B., 1946, Duke
- RYAN, MILO, 1946 (1949).....Assistant Professor of Journalism and Radio Education
B.A., 1928, M.A., 1934, Michigan
- SAALBACH, ROBERT PALMER, 1949.....Associate in English
A.B., 1934, Pittsburgh; M.A., 1939, Chicago

- SABAGH, GEORGES, 1948.....Assistant Professor of Sociology
A.B., 1941, M.A., 1943, California
- SABINE, GEORGE HOLLAND, 1950.....Visiting Professor of Philosophy
A.B., 1903, Ph.D., 1906, Cornell
- SAMPSON, DONALD CALVIN, 1946.....Municipal Research Consultant
in Bureau of Governmental Research and Services
B.A., 1932, Washington
- SANCHEZ-TRINCADO, JOSE, 1949.....Lecturer in Spanish
B.A., 1919, Escuela Normal (Jean); Masters, 1922, Escuela Normal (Sevilla);
Professor Normal, 1930, Magisterio (Madrid)
- SANDELIUS, DAVID MARTIN, 1949.....Lecturer in Mathematics
B.A., 1940, Stockholm; M.A., 1948, Uppsala
- SANDERMAN, LLEWELLYN ARTHUR, 1928 (1944).....Assistant Professor of Physics
B.S., 1923, Linfield College (Oregon); M.S., 1931, Ph.D., 1943, Washington
- SANDERSON, ERIC ROBERT, 1947.....Clinical Associate in Anatomy and Surgery
B.S., 1935, Minnesota; M.D., 1937, Harvard
- SARRO, LOUIS JAMES, 1949.....Clinical Associate in Surgery
B.S., 1937, Washington; M.B., 1941, M.D., 1942, Northwestern
- SAUERLANDER, ANNEMARIE MARGARET 1947 (1949).....Associate Professor of German
B.A., 1928, M.A., 1930, Buffalo; Ph.D., 1936, Cornell University
- SAVADKIN, BARBARA, 1950.....Associate in Anthropology
A.B., 1946, M.A., 1948, Michigan
- SAVAGE, GEORGE MILTON, 1935 (1945).....Associate Professor of English
B.A., 1928, M.A., 1928, Ph.D., 1935, Washington
- SAVELLE, MAX, 1947.....Professor of History
A.B., 1925, M.A., 1926, Ph.D., 1932, Columbia
- SCHALLER, GILBERT SIMON, 1922 (1937).....Professor of Mechanical Engineering
B.S. in M.E., 1916, Illinois; M.B.A., 1925, Washington
- SCHALLERT, WILLIAM LOUIS, 1947 (1948).....Instructor in Meteorology
B.S., 1938, Wisconsin State Teachers College
- SCHARDT, ALVIN LUDWIG, 1944.....Associate in Music
- SCHEFFER, VICTOR BLANCHARD, 1938.....Lecturer in Oceanography
B.S., 1930, M.S., 1932, Ph.D., 1936, Washington
- SCHERRER, NINA GLAZE, 1949.....Associate in General Business
B.B.A., 1926, Washington
- SCHERTEL, MAX, 1931 (1947).....Assistant Professor of German
B.Ed., 1909, Colorado Normal School; B.A., 1923, M.A., 1928, Ph.D., 1938, Washington
- SCHEYER, FREDERICK LOUIS, 1946 (1949).....Senior Consultant in Medicine
M.D., 1928, Temple University (Philadelphia)
- SCHLESINGER, ERNEST CARL, 1949.....Instructor in Philosophy
B.S., 1947, Washington
- SCHMID, CALVIN FISHER, 1937 (1941).....Professor of Sociology;
Director of the Office of Population Research
B.A., 1925, Washington; Ph.D., 1930, Pittsburgh
- SCHMIDT, FRED HENRY, 1946.....Assistant Professor of Physics
B.S.E., 1937, Michigan; M.A., 1940, Buffalo; Ph.D., 1945, California
- SCHNEPPER, HAROLD E., 1950.....Clinical Instructor in Operative Dentistry
D.M.D., 1946, Oregon
- SCHRADER, OTTO HARRY, Jr., 1936 (1945).....Associate Professor of Forest Products
B.S.F., 1931, Washington; M.S., 1932, Wisconsin; Ph.D., 1942, Yale
- SCHRAG, CLARENCE CLYDE, 1944 (1949).....Assistant Professor of Sociology
B.A., 1939, Washington State; M.A., 1945, Washington
- SCHRIEBER, ALBERT NATHAN, 1948.....Assistant Professor of Management
B.S. in M.E., 1938, Illinois Institute of Technology; M.B.A., 1947, Harvard
- SCHROEDER, HERMAN J., 1948.....Clinical Associate in Obstetrics and Gynecology
Ph.C., 1931, B.S., 1931, Washington; M.D., 1940, Oregon
- SCHUBERT, WOLFGANG MANFRED, 1947 (1949).....Assistant Professor of Chemistry
B.S., 1941, Illinois; Ph.D., 1947, Minnesota
- SCHULTZ, ARTHUR GUSTAVE, 1946.....Clinical Associate Professor of Fixed Partial Dentures
D.M.D., 1924, North Pacific College
- SCHWARTZ, GEORGE LEWIS, 1949.....Lecturer in Chemical Engineering
B.S., 1915, M.S., 1917, Washington
- SCOTT, WILLARD FRANK, 1948 (1949).....Instructor in Geology
B.S., 1941, M.S., 1947, Utah

- SCUDDER, SIDNEY TOWNSEND, 1948.....Clinical Instructor in Medicine
M.D., 1943, Columbia
- SEARING, LYALL DERFOREST, 1950.....Clinical Associate in Public
Health and Preventive Medicine
B.S., 1928, M.S., 1932, Oregon State
- SEELYE, WALTER BALE, 1947.....Professor of Pediatrics;
Executive Officer of the Department of Pediatrics
B.S., 1922, Washington; M.D., 1926, Harvard
- SEIDLIN, OSKAR, 1949.....Visiting Lecturer in Germanic Languages
Ph.D., 1935, University of Basel (Switzerland)
- SERGEV, SERGIUS IVAN, 1923 (1946).....Professor of Engineering Mechanics
B.S. in M.E., 1923, M.E., 1931, Washington
- SEYMOUR, ALLYN HENRY, 1948.....Research Associate in the Applied Fisheries Laboratory;
Assistant Director of Applied Fisheries Laboratory
B.S., 1937, Washington
- SHANKLIN, JAMES GAYLORD, 1948.....Lecturer in Nursing
A.B., 1935, Hanover College; M.D., 1939, Indiana
- SHANNON, LYLE WILLIAM, 1946.....Associate in Sociology
B.A., 1942, Cornell College (Iowa)
- SHAPLEY, JAMES LOUIS, 1947.....Associate in Speech
B.A., 1947, Washington
- SHATTUCK, WARREN LOCKE, 1935 (1941).....Professor of Law
B.A., 1934, LL.B., 1934, Washington; J.S.D., 1936, Yale
- SHAW, JOHN ROGER, 1948.....Associate in Russian Language
B.A., 1942, Washington
- SHAW, JOSEPH WILLIAM, 1947.....Clinical Professor of Dermatology
B.S., 1925, M.D., 1926, M.S., 1930, Michigan
- SHEEHE, GORDON HENRY, 1948.....Lecturer in Political Science;
Director of Law Enforcement Curriculum
B.S., 1935, Vermont; Certificate of Traffic Police Administration, 1938, Northwestern
- SHEEHY, JOHN JOSEPH, 1949.....Assistant Professor of Pathology
B.S., 1936, M.S., 1938, Washington; M.D., 1943, Northwestern
- SHEFELMAN, S. HAROLD, 1930.....Lecturer in Law
Ph.B., 1920, Brown; LL.B., 1925, Yale
- SHELDON, CHARLES STUART, II, 1940 (1946).....Assistant Professor of Economics
B.A., 1936, M.A., 1938, Washington; A.M., 1939, Ph.D., 1942, Harvard
- SHEPARD, ROBERT EASTON, 1947.....Research Associate in Hydraulic Engineering
B.S., 1940, Washington
- SHEPHARD, STANLEY LILBURN, 1950.....Clinical Instructor in Operative Dentistry
B.S., 1939, Washington; D.M.D., 1946, Oregon
- SHERIDAN, ALFRED I., 1948.....Clinical Associate in Anatomy and in Surgery
B.S., 1938, Washington; M.D., 1943, Northwestern
- SHERMAN, JOHN CLINTON, 1942 (1948).....Assistant Professor of Geography
A.B., 1937, Michigan; M.A., 1943, Clark University; Ph.D., 1947, Washington
- SHERWOOD, KENNETH KYLER, 1940 (1947).....Clinical Assistant Professor of Medicine
B.S., 1923, B.M., 1925, M.D., 1926, Minnesota
- SHIACH, JOHN MILLAR, 1949.....Clinical Associate in Surgery
B.A., 1930, M.D., 1933, Oregon
- SHIH, VINCENT YU-CHUNG, 1945.....Assistant Professor of Chinese
Language, Literature, and Philosophy
B.A., 1925, Fukien Christian University (Foochow); M.A., 1930, Yenching
University; Ph.D., 1939, Southern California
- SHIPPEE, EVA MARIA, 1949.....Associate in Psychology
B.A., 1940, Barnard College; Bacc. Philo., 1937, Lycee Moliere (Paris)
- SHIPMAN, GEORGE ANDERSON, 1946.....Professor of Public Administration;
Codirector of the Institute of Public Affairs
B.A., 1925, M.A., 1926, Wesleyan University (Connecticut); Ph.D., 1931, Cornell University
- SHOLLEY, JOHN BURRILL, 1932 (1939).....Professor of Law
LL.B., 1932, B.A., 1935, Washington; J.S.D., 1937, Chicago
- SHORETT, LLOYD WILLARD, 1950.....Associate Judge of Law
LL.B., 1932, Washington
- SHOVLAIN, FRANCIS EDGAR, 1949.....Clinical Affiliate in Psychiatry
A.B., 1921, M.D., 1923, Creighton
- SHUCK, GORDON RUSSELL, 1918 (1937).....Professor of Electrical Engineering
B.S. in E.E., 1906, Minnesota

- SIDEY, THOMAS KAY, 1903 (1943).....Professor Emeritus of Latin and Greek
A.B., 1891, Victoria University; Ph.D., 1900, Chicago
- SIEG, LEE PAUL, 1934 (1946).....President Emeritus of the University
B.S., 1900, M.S., 1901, Ph.D., 1910, Iowa; LL.D., 1934, Pittsburgh
- SIMESTER, PATRICIA ANNE, 1949.....Associate in Psychology
B.A., 1944, Ohio State
- SIMON, WALTER B., 1949.....Associate in Germanic Languages
B.A., 1947, Washington
- SIMOS, JOHN GEORGE, 1948.....Associate in Romance Languages and Literature
- SIMPSON, LURLINE VIOLET, 1924 (1944).....Associate Professor of Romance Languages
B.A., 1920, M.A., 1924, Ph.D., 1928, Washington
- SIMPSON, WILLIAM TRACY, 1948 (1949).....Assistant Professor of Chemistry
A.B., 1943, Ph.D., 1948, California
- SIMS, WAYNE WALDO CONWAY, 1948 (1949).....Assistant Professor of Public Health
and Preventive Medicine
M.D., 1929, Colorado; M.P.H., 1940, Johns Hopkins
- SIRKEN, MONROE GILBERT, 1947 (1948).....Research Associate, Laboratory of
Statistical Research
B.A., 1946, M.A., 1947, California
- SIVERTZ, VICTORIAN, 1926 (1949).....Associate Professor of Chemistry
B.S., 1922, Washington; M.S., 1924, West Virginia; Ph.D., 1926, McGill
- SKAHEN, JULIA GOODSELL, 1945 (1946).....Assistant Professor of Anatomy and Physiology
B.S., 1926, M.S., 1928, Washington; Ph.D., 1941, Chicago
- SKEELS, DELL ROY, 1946 (1949).....Instructor in Humanistic-Social Studies
B.A., 1941, M.A., 1942, Idaho; Ph.D., 1949, Washington
- SKEELS, ESTHER LEECH, 1948.....Assistant Professor of Nursery Education
B.A., 1925, Iowa State Teachers College; M.A., 1930, Columbia
- SKEWIS, FRANCIS HARRY, 1949...Research Associate in Chemistry and Chemical Engineering
B.S., 1942, Washington
- SKINNER, MACY MILLMORE, 1916 (1947).....Professor Emeritus of Economics;
Counselor for Foreign Trade Students
A.B., 1894, A.M., 1895, Ph.D., 1897, Harvard
- SKUBI, KAZIMER BOGARD, 1947.....Clinical Instructor in Medicine; Lecturer in Nursing
B.S., 1932, Washington; M.D., 1940, Rush Medical College
- SMALLWOOD, HERBERT ALFRED, 1949.....Research Associate in Civil Engineering
B.S. in C.E., 1948, M.S. in C.E., 1949, Washington
- SMID, CAROLINE GEARHART, 1947.....Associate in Speech
B.A., 1935, Washington
- SMITH, BRUCE BROWNFIELD, 1946 (1949).....Clinical Assistant Professor of Operative
Dentistry and Fixed Partial Dentures
B.S., 1941, D.M.D., 1942, North Pacific College
- SMITH, CHARLES WALLACE, 1948.....Associate in Art
- SMITH, CHARLES WESLEY, 1905 (1947).....Librarian Emeritus; Professor Emeritus of
Librarianship; Bibliographic Consultant
B.A., 1903, B.L.S., 1905, Illinois
- SMITH, CLIFTON HOWARD, 1949.....Clinical Instructor in Prosthodontics
D.M.D., 1943, Oregon
- SMITH, ELMER HALDON, 1947...Research Associate in the Engineering Experiment Station
E.E., 1942, University of Cincinnati
- SMITH, FREDERICK CHARNLEY, 1926 (1947).....Professor of Civil Engineering
B.S. in C.E., 1926, C.E., 1929, Washington
- SMITH, GEORGE DUNCAN, 1946.....Research Associate in the Bureau of
Governmental Research and Services
B.A., 1944, Washington
- SMITH, GEORGE H., 1948.....Associate in English
B.A., 1933, California; M.A., 1946, Montana
- SMITH, GEORGE SHERMAN, 1921 (1941).....Professor of Electrical Engineering
B.S. in E.E., 1916, E.E., 1924, Washington
- SMITH, HARRIET HOLBROOK, 1949.....Assistant Professor of Nursing
A.B., 1918, Mt. Holyoke College (Massachusetts); R.N., 1920, Seattle General Hospital
- SMITH, HARRY EDWIN, 1914 (1948).....Professor Emeritus of Insurance
A.B., 1906, M.A., 1908, DeFauw; Ph.D., 1912, Cornell University
- SMITH, HAZEL MARTHA, 1944 (1948).....Acting Instructor in Home Economics
B.S., 1927, Oregon State

- SMITH, LAURA BELLE, 1947.....Instructor in Nursing
R.N., 1945, Swedish Hospital (Seattle); B.S., 1946, Seattle Pacific College
- SMITH, MONCRIEFF HYNSON, Jr., 1949.....Assistant Professor of Psychology
A.B., 1940, M.A., 1941, Missouri; Ph.D., 1947, Stanford
- SMITH, PAUL, Jr., 1949.....Associate in Physical Education
B.S., 1948, Southern Illinois
- SMITH, MAJOR RALEIGH DELMER, 1949.....Assistant Professor of Air Science and Tactics
- SMITH, RICHARD LEIGH, 1949.....Acting Instructor in Architecture
B.Arch., 1941, Cornell
- SMITH, ROBERT PHILIP, 1948.....Clinical Instructor in Obstetrics and Gynecology
A.B., 1930, B.S., 1932, M.D., 1934, Kansas
- SMITH, STEVENSON, 1911 (1916).....Professor of Psychology
B.S., 1904, Ph.D., 1909, Pennsylvania
- SMITH, WALTER HAROLD, 1949.....Clinical Instructor in Pedodontics
D.D.S., 1947, Pennsylvania
- SMULLYAN, ARTHUR FRANCIS, 1946.....Assistant Professor of Philosophy
A.B., 1936, College of the City of New York; A.M., 1940, Ph.D., 1941, Harvard
- SNIDER, HAROLD WAYNE, 1949.....Associate in General Business
B.A., 1947, Washington
- SNYDER, RICHARD CRAINE, 1949.....Instructor in Zoology
A.B., 1940, Bucknell; A.M., 1941, Ph.D., 1948, Cornell
- SNYDER, LT. COL. ROBERT LYLES, U.S.A., 1948.....Assistant Professor of
Military Science and Tactics
B.A., 1937, Washington College (Maryland)
- SNYDER, WILLIAM ARTHUR, 1940 (1949).....Assistant Professor of Mechanical Engineering
B.M.E., 1939, Minnesota
- SÖDERSTROM, KENNETH MALCOLM, 1941 (1947).....Clinical Assistant Professor of Medicine
M.D., 1931, Nebraska; M.S. in P.H., 1940, Johns Hopkins
- SOKOL, VILEM MARK, 1948.....Instructor in Music
B.Mus., 1938, Oberlin; Grad., Cert., 1939, State Conservatory of Music (Prague)
- SOMMERFELD, FRANZ RENE, 1947 (1948).....Instructor in German
B.A., 1944, California; M.A., 1946, Columbia
- SONDHEIM, HAROLD LEVITT, 1949.....Clinical Instructor in Prosthodontics
D.M.D., 1943, Oregon
- SORENSEN, ALICE J., 1949.....Assistant Professor of Music
B.S., 1926, Emporia State Teachers College; M.A., 1930, Columbia
- SOULE, ELIZABETH STERLING, 1920 (1934).....Professor of Nursing Education;
Dean of the School of Nursing
R.N., 1907, Malden Hospital (Massachusetts); B.A., 1926, M.A., 1931, Washington
D.Sc., 1944, Montana State
- SOUTHCORBE, ROBERT HENRY, 1949.....Clinical Affiliate in Psychiatry
M.D., 1927, Michigan
- SOUTHER, JAMES WALTER, 1948.....Instructor in Humanistic-Social Studies
B.A., 1947, M.A., 1948, Washington
- SOUTHERN, THEODORE CYRUS, GMISS, 1949.....Associate in Naval Science
- SPARKMAN, DONAL ROSS, 1947.....Clinical Instructor in Medicine
B.S., 1930, Washington; M.D., 1934, Pennsylvania
- SPAWN, MAJOR DOUGLAS WILSON, U.S.A., 1947 (1949).....Professor of Air Science
and Tactics
B.S. in Chem. E., 1946, Syracuse
- SPECTOR, IVAR, 1931 (1943).....Associate Professor of Russian Language and Literature
Graduate, 1919, Teachers' Seminar (Russia); M.A., 1926, Northwestern; Ph.D., 1928, Chicago
- SPEELMON, CLARENCE ROBERT, 1948.....Associate in Art
B.A., 1947, University of Omaha
- SPEIR, EDWARD B., 1946.....Lecturer in Nursing; Consultant in Surgery
B.A., 1929, M.D., 1933, Kansas
- SPENCER, EMMA VIRGINIA, 1948.....Instructor in Physical Education
A.B., 1928, Florida State University; M.A., 1932, Columbia
- SPICKARD, VERNON WARREN, 1947.....Clinical Assistant Professor of Pediatrics
B.S., 1917, Drake; M.D., 1918, Pennsylvania
- SPICKARD, WARREN BEIM, 1948.....Clinical Instructor in Medicine
B.A., 1940, M.D., 1944, Stanford
- SPIELHOLZ, JESS BERNARD, 1947.....Clinical Associate in Pathology
M.D., 1932, Long Island College of Medicine, M.S.P.H., 1943, Columbia

- SPIELMANN, HEINZ, 1948 (1949).....Instructor in German
- SPROULE, JOHN ROBERT, 1948.....Instructor in Architecture
B.Arch., 1934, Washington
- SPROULE, WALTER JOHN, 1948.....Instructor in Operative Dentistry
D.D.S., 1944, Toronto
- STAFFORD, DONALD E., 1948.....Clinical Instructor in Neurosurgery
B.A., 1932, Park College (Missouri); M.D., 1935, Harvard; M.S., 1941, Minnesota
- STAHL, HERBERT M., 1947 (1949).....Instructor in English
B.A., 1936, Huron College (South Dakota); M.A., 1938, Colorado State College
of Education
- STAMATAKIS, ETHEL M., 1947.....Instructor in Nursing
R.N., 1928, Muncie Home Hospital (Indiana); B.S., 1938, Ball State Teachers
College (Indiana); C.P.H.N., 1940, Western Reserve
- STANSBERRY, CLAUD J., 1946 (1948).....Senior Consultant in Prosthodontics
D.D.S., 1905, California
- STANSBY, MAURICE EARL, 1943.....Lecturer in Fisheries
B.Chem., 1930, M.S., 1933, Minnesota
- STANTON, WILLIAM JOHN, JR., 1948.....Assistant Professor of Marketing
B.S., 1940, Lewis Institute (Illinois); M.B.A., 1941, Ph.D., 1948, Northwestern
- STARKS, MILAN VICTOR, 1948.....Clinical Instructor in Oral Histology and
Pulp Canal Therapy
B.S., 1940, D.D.S., 1940, Nebraska
- STARR, JAMES MARION, 1946 (1948).....Instructor in Speech
B.A., 1937, M.A., 1943, Washington
- STEIN, ARNOLD SIDNEY, 1948.....Associate Professor of English
A.B., 1936, Yale; A.M., 1938, Ph.D., 1942, Harvard
- STEINBRUECK, VICTOR, 1946 (1947).....Instructor in Architecture
B.Arch., 1935, Washington
- STEINER, JESSE FREDERICK, 1931 (1948).....Professor Emeritus of Sociology
B.A., 1901, Heidelberg College (Ohio); M.A., 1913, Harvard; Ph.D., 1915, Chicago
- STELLWAGEN, WILLIAM JOHN, 1949.....Consultant in Surgery
A.B., 1927, M.D., 1934, M.S., 1940, Michigan
- STENZEL, GEORGE, 1949.....Instructor in Forestry
B.S., 1938, New Hampshire; M.F., 1939, Yale
- STEPHENS, THOMAS EDWARD, 1949.....Instructor in Geography
B.A., 1935, Washington
- STEVENS, ARTHUR WILBER, 1948.....Associate in English
B.A., 1942, Brown
- STEVENS, EDWIN BICKNELL, 1936 (1947).....Professor Emeritus of Education and
Adviser to Higher Education Conference
A.B., 1896, Tufts; A.M., 1899, Harvard
- STEVENS, LEONARD WOODBURY, 1937 (1948).....Assistant Professor of Physical Education
B.S., 1934, M.S., 1941, Washington
- STEWART, ROGER E., 1948.....Clinical Instructor in Obstetrics and Gynecology
B.S., 1917, Cornell; M.D., 1928, Columbia
- STIBBS, GERALD DENIKE, 1948.....Professor of Operative Dentistry;
Executive Officer of the Department of Operative Dentistry
D.M.D., 1931, B.S., 1931, North Pacific College
- STILL, RICHARD RALPH, 1950.....Instructor in Marketing
B.A., 1942, Idaho; M.B.A., 1950, Stanford
- STIMMEL, CATHERINE ISABELLE, 1949.....Instructor in Nursing
B.S., 1947, Washington
- STIRLING, THOMAS BRENTS, 1932 (1949).....Professor of English
LL.B., 1926, Ph.D., 1934, Washington
- STIVERS, JEANNETTE CARLSON, 1950.....Associate in English
A.B., 1944, A.M., 1945, Illinois
- STOCKS, BETTY THOMPSON, 1949.....Instructor in English
B.A., 1934, Ph.D., 1949, Minnesota
- STOKKE, AGNES VICTORIA, 1948.....Associate in Librarianship
B.A., 1913, Lib. Cert. 1913, Washington
- STOLZHEISE, RALPH M., 1948.....Clinical Instructor in Psychiatry
A.B., 1926, Willamette University; M.D., 1934, Oregon
- STONE, CALEB, S., JR., 1948.....Consultant in Surgery
B.S., 1922, Washington; M.D., 1926, Washington University (St. Louis); M.S., 1934,
Virginia

- STONE, CHARLES IRVING, 1950.....Associate Lecturer in Estate Planning
B.S., 1934, Washington State; LL.B., 1939, Washington
- STONE, EDWARD NOBLE, 1910 (1944).....Professor Emeritus of Classical Languages
A.B., 1891, M.A., 1893, Olivet (Michigan)
- STONE, EMMA ABERCROMBIE, 1948.....Instructor in Nursing
B.A., 1937, Eastern Washington College of Education; Cert., 1947, Western Michigan College of Education
- STONE, GEORGE HARRISON, B.M.C., USN, 1947.....Instructor in Naval Science
- STORLAZZI, MARIO, 1949.....Lecturer in Public Health and Preventive Medicine
B.S., 1938, A.M., 1940, Boston
- STOUT, THOMAS MELVILLE, 1948.....Instructor in Electrical Engineering
B.S. in E.E., 1946, Iowa State; M.S.E., 1947, Michigan
- STOWELL, ELLERY CORY, Jr., 1947.....Research Associate in Pathology
B.S., 1940, California Institute of Technology; M.A., 1943, Ph.D., 1947, California
- STRACHAN, WILLIS LLOYD, 1949.....Clinical Instructor in Psychiatry
A.B., 1929, Colorado College; M.D., 1942, Colorado
- STRAYER, GEORGE DRAYTON, Jr., 1949.....Professor of Education
B.S., 1927, Princeton; M.A., 1928, Ph.D., 1934, Columbia
- STREET, ROBERT ELLIOTT, 1948 (1949).....Associate Professor of Aeronautical Engineering
B.S., 1933, Rensselaer Polytechnic (New York); M.A., 1934, Ph.D., 1939, Harvard
- STREIB, JOHN FREDRICK, Jr., 1947.....Assistant Professor of Physics
B.S., 1936, Ph.D., 1941, California Institute of Technology
- STRIZEK, OTTO PAUL, 1947 (1949).....Clinical Assistant Professor of Operative Dentistry
D.M.D., 1926, Oregon
- STROH, JAMES EUGENE SIMMER, 1947.....Clinical Assistant Professor of Medicine
B.S., 1928, South Dakota; M.D., 1931, Illinois
- STRONG, WILLIAM GWINN, 1950.....Lecturer in Accounting
B.A., 1941, Washington
- STROTHER, CHARLES RIDDELL, 1947.....Professor of Psychology in College of Arts and Sciences and Professor of Clinical Psychology in School of Medicine
B.A., 1929, M.A., 1932, Washington; Ph.D., 1935, Iowa
- STUNTZ, DANIEL ELLIOT, 1940 (1945).....Assistant Professor of Botany
B.S., 1935, Washington; Ph.D., 1940, Yale
- SUGARS, THOMAS W., 1948.....Clinical Instructor in Psychiatry
S.B., 1936, Washington State; M.D., 1939, Rush Medical College
- SUNOO, HAROLD HAGWON, 1946.....Instructor in Russian Language
B.A., 1942, Pasadena College; M.A., 1944, Washington
- SUNOO, HELEN, 1949.....Associate in Far Eastern and Slavic Languages and Literature
A.B., 1937, San Francisco State
- SUTERMEISTER, ROBERT ARNOLD, 1949.....Associate Professor of Personnel Administration
A.B., 1934, Harvard; M.A., 1942, Washington
- SVALASTOGA, KAARE, 1948.....Research Associate in the Washington Public Opinion Laboratory
M.A., 1940, University of Oslo (Norway)
- SVELANDER, KATHERINE GUSTAFSON, 1946.....Assistant Professor of Nursing
R.N., 1928, Swedish Hospital (Seattle); B.S., 1928, Washington
- SVIHLA, ARTHUR, 1938 (1943).....Professor of Zoology
A.B., 1925, Illinois; M.S., 1928, Ph.D., 1931, Michigan
- SWAN, EMERY FREDERICK, 1948.....Assistant Professor of Oceanography
B.S., 1938, Bates College (Maine); Ph.D., 1942, California
- SWANSON, JOHN EDWARD, Jr., 1949.....Associate in Civil Engineering
B.S. in C.E., 1945, Washington
- SWARM, HOWARD MYRON, 1947.....Instructor in Electrical Engineering
B.S. in E.E., 1940, Washington
- SWENSON, MARLYS ANN, 1949.....Instructor in Physical Education
B.S., 1945, University of California at Los Angeles; M.A., 1946, Columbia
- SWISHER, IVAN WESLEY, 1948 (1949).....Instructor in Physical Education
A.B., 1932, Bradley University (Illinois)
- SWOMLEY, CAPT. NEELY MILTON, U.S.A., 1947.....Assistant Professor of Military Science and Tactics
B.A., 1942, Coe College (Iowa)
- SYLVESTER, HOWARD EUGENE, 1943 (1947).....Instructor in English
B.A., 1937, M.A., 1941, New Mexico

- SYLVESTER, ROBERT OHRUM, 1947.....Assistant Professor of Civil Engineering
B.S. in C.E., 1936, Washington; S.M., 1941, Harvard
- SYKES, WALTER AINSWORTH, 1949.....Lecturer in Prosthodontics
D.M.D., 1923, North Pacific College
- TANG, NIEN-YEE, 1948.....Lecturer in Mathematics
B.S., 1925, Washington; M.S., 1926, Michigan
- TANNER, ROBERT LEIGH, 1947.....Instructor in Electrical Engineering
A.B., 1944, M.S., 1947, Stanford
- TARR, HUGH LEWIS AUBREY, 1949.....Lecturer in Fisheries
B.S.A., 1926, M.S.A., 1928, British Columbia; Ph.D., 1931, McGill;
Ph.D., 1934, Cambridge (England)
- TARTAR, HERMAN VANCE, 1918 (1927).....Professor of Chemistry
B.S., 1902, Oregon State; Ph.D., 1920, Chicago
- TATSUMI, HENRY SABURO, 1935 (1946).....Associate Professor of Japanese Language
B.A., 1932, M.A., 1935, Washington
- TAYLOR, EDWARD AYERS, 1929.....Professor of English
B.A., 1909, Denver University; M.A., 1918, Ph.D., 1925, Chicago
- TAYLOR, GEORGE EDWARD, 1939 (1941).....Professor of Far Eastern History and Politics;
Executive Officer of the Department of Far Eastern and Slavic Languages and Literature;
Director of the Far Eastern and Russian Institute
A.B., 1927, A.M., 1928, Birmingham (England)
- TAYLOR, ROBERT LINCOLN, 1941 (1945).....Professor of Law
B.A., 1927, Yale; J.D., 1930, Northwestern
- TAYLOR, WALTER WILLARD, Jr., 1949.....Acting Assistant Professor of Anthropology
A.B., 1935, Yale; Ph.D., 1943, Harvard
- TEEVAN, THOMAS FOSTER, 1946.....Associate in English
B.A., 1936, College of Puget Sound; M.A., 1949, Washington
- TEMPLETON, FREDERIC EASTLAND, 1947.....Professor of Radiology;
Executive Officer of the Department of Radiology
B.S., 1927, Washington; M.D., 1931, Oregon
- TENNANT, HAROLD ELMER, 1944.....Acting Instructor in Geography
B.A., 1933, M.A., 1937, Washington
- TERRELL, MARGARET ELMA, 1928 (1944).....Professor of Home Economics;
Director of University Food Service
B.A., 1923, Penn College (Iowa); M.A., 1927, Chicago
- TERRY, MIRIAM, 1930 (1937).....Assistant Professor of Music
B.Mus., 1926, M.A., 1948, Washington
- THICKSTUN, JAMES TOOLAN, 1949.....Clinical Instructor in Psychiatry
B.A., 1939, University of California at Los Angeles; M.D., 1943, Southern California
- THOMAS, BERNERD OWEN AMOS, 1946 (1947).....Professor of Periodontology;
Executive Officer of the Department of Periodontology
D.D.S., 1935, B.A., 1936, M.S., 1939, Minnesota; D.D.S., 1940, Ph.D., 1946, Columbia
- THOMAS, GERALD FREDERICK, 1947.....Lecturer in Nursing
M.D., 1933, Nebraska
- THOMAS, HARLAN, 1926 (1947).....Professor Emeritus of Architecture;
Director Emeritus of the School of Architecture
B.S., 1894, Colorado State
- THOMAS, LOUIS BURTON, 1950.....Assistant Professor of Surgery
M.B., 1943, B.S., 1943, M.R.C.S., 1943, L.R.C.P., 1943, London;
D.P.M., 1948, Bristol (England)
- THOMLE, KRISTINE, 1945.....Acting Instructor in Scandinavian Languages
B.A., 1915, M.A., 1933, Washington
- THOMPSON, CARLISLE HARRY, 1946.....Associate in English
B.S., 1922, U.S. Naval Academy
- THOMPSON, GORDON GRAHAME, 1947.....Clinical Professor of Obstetrics and Gynecology
B.S., 1906, Macalester College (Minnesota); M.D., 1910, Illinois
- THOMPSON, IVAN, 1947.....Clinical Instructor in Medicine
B.M., 1934, M.D., 1935, Northwestern
- THOMPSON, MARY JEAN, 1949.....Instructor in Nursing
Ph.B., 1943, Wisconsin; M.N., 1946, Yale
- THOMPSON, THOMAS GORDON, 1919 (1929).....Professor of Chemistry;
Director of Oceanographic Laboratories
A.B., 1914, Clark University; M.S., 1915, Ph.D., 1918, Washington
- THOMPSON, WILLIAM ERWIN, 1949.....Instructor in Civil Engineering
B.S. in C.E., 1932, M.S. in C.E., 1934, Wisconsin

- THOMPSON, WILLIAM FRANCIS, 1930.....Professor of Fisheries;
Director of the Fisheries Institute
B.A., 1911, Ph.D., 1930, Stanford
- THOMPSON, WILLIAM FRANCIS, JR., 1949.....Associate in Geography
B.S., 1939, Washington
- THOMSON, DAVID, 1902 (1947).....Professor Emeritus of Latin;
Vice-President Emeritus; Pre-Law Adviser
B.A., 1892, Toronto; LL.D., 1936, British Columbia
- THOMSON, KENNETH FRANCIS, 1948.....Assistant Professor of Psychology
B.A., 1939, Wayne University (Michigan); M.A., 1942, Ph.D., 1948, Ohio State
- THORNTON, HELEN KNOTT, 1947.....Research Associate in Pathology
B.S., 1937, M.S., 1939, Washington; Ph.D., 1944, Ohio State
- THORP, DONALD J., 1948.....Consultant in Obstetrics and Gynecology
A.B., 1921, B.S., 1923, M.D., 1927, Michigan
- THORPE, BERENICE DU RAE, 1946 (1947).....Instructor in English
B.A., 1924, M.A., 1925, Washington
- THORSON, INA VIRGINIA, 1949.....Instructor in Home Economics
B.A., 1944, M.A., 1949, Washington
- TIDWELL, MELVIN FRED, 1948.....Associate Professor of Business Education
B.S., 1933, Southwestern Institute of Technology (Oklahoma); M.A., 1936, Oklahoma
A. and M.; Ed.D., 1947, Stanford
- TIDWELL, ROBERT AUSTIN, 1947.....Clinical Instructor in Pediatrics
B.S.M., 1935, M.D., 1937, Oklahoma
- TIFFANY, WILLIAM ROBERT, 1947 (1948).....Instructor in Speech
B.A., 1946, Washington
- TILLOTSON, HELEN GENE, 1945.....Instructor in Nursing Education
R.N., 1941, B.S., 1941, Minnesota
- TINGEY, FRED H., 1949.....Research Associate in Mathematics
B.S., 1947, Utah State
- TOBIN, SAMUEL JOSEPH, 1949.....Acting Instructor in Anthropology
B.S., 1942, M.A., 1947, Utah
- TOLAN, JOHN FRANCIS, 1949.....Consultant in Surgery
B.S., 1931, M.D., 1933, Michigan
- TONSING, ARTHUR RICHARD, 1947.....Associate in Mechanical Engineering
- TOOLEY, GEORGE EDWARD, 1948.....Clinical Instructor in Pathology
A.B., 1933, M.D., 1937, Kansas
- TORNEY, JOHN ALFRED, JR., 1930 (1948).....Associate Professor of Physical Education
B.S., 1928, Washington; M.A., 1930, Columbia
- TOWN, VICTOR JOHN, 1947.....Associate in Political Science
B.A., 1935, M.A., 1940, British Columbia
- TREADGOLD, DONALD WARREN, 1949.....Assistant Professor of Russian History
B.A., 1943, Oregon; M.A., 1947, Harvard; Ph.D., 1949, Oxford (England)
- TREFFTZS, KENNETH LEWIS, 1949.....Acting Associate Professor of Finance
B.S., 1936, M.S., 1937, Ph.D., 1939, Illinois
- TRINCADO, JOSE SANCHEZ, 1949.....Lecturer in Spanish
B.A., 1919, Escuel Normal (Jean); Masters, 1922, Escuela Normal (Sevilla);
Professor Normal, 1930, Magisterio (Madrid)
- TRUAX, ARTHUR ROBERT, 1924.....Lecturer in Finance
- TRUEBLOOD, DONALD VAUGHN, 1947.....Senior Consultant in Surgery
A.B., 1911, Washington; M.D., 1915, Johns Hopkins
- TRUEBLOOD, PAUL GRAHAM, 1947.....Assistant Professor of English
A.B., 1928, Willanette (Oregon); M.A., 1930, Ph.D., 1935, Duke
- TSCHUDIN, MARY STICKELS, 1942 (1948).....Associate Professor of Nursing;
Assistant Dean of the School of Nursing
R.N., 1935, B.S., 1935, C.P.H.N., 1936, M.S., 1939, Washington
- TSUTAKAWA, GEORGE, 1946 (1949).....Instructor in Art
B.A., 1937, Washington
- TUCKER, ERWIN ROBERT, 1948.....Instructor in Humanistic-Social Studies
B.A., 1945, St. John's College (Maryland)
- TUELL, JOSEPH IRVING, 1948.....Consultant in Orthopedics
B.S., 1929, M.D., 1932, Oregon
- TURNER, EDWARD LEWIS, 1945.....Professor of Internal Medicine;
Dean of the School of Medicine
B.S., 1922, M.S., 1923, Chicago; M.D., 1928, Pennsylvania

- TURNER, MABEL ALEXANDRA, 1941 (1946).....Assistant Professor of Librarianship
A.B., 1926, Oregon; B.S. in L.S., 1931, Columbia
- TURNER, MILDRED BECKER, 1949.....Research Associate in Biochemistry
B.S., 1942, Iowa State
- TUTTLE, AILEEN H., 1949.....Clinical Instructor in Public Health and Preventive Medicine
B.S., 1930, C.P.H., 1939, Washington; M.P.H., 1946, Minnesota
- TYLER, RICHARD GAINES, 1929.....Professor of Sanitary Engineering
C.E., 1908, Texas; B.S. in C.E., 1910, Massachusetts Institute of Technology
- TYREE, COMDR. ALEXANDER KELLY, U.S.N., 1948..Associate Professor of Naval Science
B.S., 1936, U.S. Naval Academy
- TYVAND, RAY EUGENE, 1948.....Clinical Instructor in Urology
B.A., 1923, B.S., 1926, North Dakota; M.D., 1928, Rush Medical College (Chicago)
- UEHLING, EDWIN ALBRECHT, 1936 (1947).....Professor of Physics
B.A., 1925, Wisconsin; M.A., 1930, Ph.D., 1932, Michigan
- UHRICH, GEORGE EDWARD, 1949.....Acting Instructor in Mathematics
B.S., 1939, Washington; M.S., 1941, Colorado
- ULBRICKSON, ALVIN M., 1927.....Associate in Physical Education
B.B.A., 1927, Washington
- ULVESTAD, BJARNE, 1949.....Instructor in German
- UMPHREY, GEORGE WALLACE, 1911 (1949)....Professor Emeritus of Romance Languages;
Research Consultant, Department of Romance Languages and Literature
A.B., 1899, Toronto; A.M., 1901, Ph.D., 1905, Harvard; Litt.D., 1919,
Universidad de San Marcos (Lima)
- URQUHART, ALEXANDER DONALD, JR., 1947.....Associate in Political Science
B.A., 1943, Washington
- UTLEY, JOSEPHINE L., 1948.....Associate in Psychology
B.A., 1939, Reed College; M.S., 1946, Columbia
- 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 College; M.A., 1929, Ph.D., 1936, Columbia
- VAN ACKEREN, JOSEPH F., 1949.....Administrative Consultant in Medicine
B.S., 1924, M.D., 1926, Creighton
- VAN CLEVE, RICHARD, 1948.....Professor of Fisheries; Acting Director
of the School of Fisheries
B.S., 1927, Ph.D., 1936, Washington
- VANDEWALL, GEORGE L., 1947.....Clinical Assistant Professor of Operative Dentistry
A.B., 1932, Washington; D.M.D., 1937, Oregon
- VAN HORN, ROBERT BOWMAN, 1925 (1938)....Professor of Hydraulic Engineering;
Executive Officer of the Department of Civil Engineering
B.S. in C.E., 1916, C.E., 1926, Washington
- VAN OGLE, LOUISE, 1915 (1947).....Professor Emeritus of Music; Examiner in Piano
- VAN VACTOR, WILLIAM EDWIN, 1947.....Associate in English
A.B., 1943, A.M., 1946, Oregon
- VARGAS-BARON, ANIBAL, 1949.....Associate Professor of Spanish
B.A., 1926, Asbury College; M.A., 1929, Ph.D., 1943, Washington
- VAUGHN, IRVIN RUSSELL, 1948.....Clinical Instructor in Public Health
and Preventive Medicine
B.A., 1927, Iowa State Teachers College
- VAVRA, CATHERINE ELIZABETH, 1950.....Assistant Professor of Public Health
and Preventive Medicine
R.N., 1930, St. Mary's Hospital (Minneapolis); B.S., 1935, M.P.H., 1946, Minnesota
- VERHOEVEN, LEON A.....Research Associate, Fisheries Research Institute
- VERRALL, JOHN WEEDON, 1948.....Assistant Professor of Music
B.Mus., 1929, Minneapolis College of Music; Cert. of Mus., 1932, Liszt Conservatory
(Budapest); B.A., 1934, Minnesota
- VESANAN, EIJO ERLEVI, 1948.....Assistant Professor of Geology
M.A., 1936, Ph.D., 1942, Cand. of Odontology, 1947, University of Helsinki (Finland)
- VETTING, IDA FREDERICKA, 1949.....Lecturer in Education
- VICKNER, BERTHA ALMEN, 1920 (1948).....Assistant Professor of English
B.A., 1910, Gustavus Adolphus (Minnesota); M.A., 1917, Washington

- VICKNER, EDWIN JOHAN, 1912 (1948)....Professor Emeritus of Scandinavian Languages;
Research Consultant
A.B., 1901, A.M., 1902, Ph.D., 1905, Minnesota
- VINOCOUR, SEYMOUR MAURICE, 1948.....Instructor in Speech
A.B., 1943, Southern California; M.A., 1948, Nevada
- VOEGTLIN, WALTER LYLE, 1947.....Clinical Assistant Professor of Medicine;
Clinical Associate in Physiology and Biophysics
B.S., 1932, M.S., 1933, B.M., 1934, M.D., 1935, Northwestern
- VOEKS, VIRGINIA WILMA, 1949.....Acting Assistant Professor of Psychology
B.S., 1943, M.S., 1944, Washington; Ph.D., 1947, Yale
- VOLWILER, WADE, 1949.....Lecturer in Medicine
A.B., 1939, Oberlin; M.D., 1943, Harvard
- VON BREVERN, MAXIM C., 1934 (1942).....Associate Professor of Political Science
Graduate, 1907, Imperial Royal Military Academy (Austria); Ph.D., 1935, Washington
- WADDELL, CAPT. FREEMAN B., U.S.A., 1947.....Assistant Professor of Air Science
and Tactics
- WADE, ARTHUR E., 1928.....Lecturer in Home Economics
B.S., 1902, Cornell College (Iowa); M.D., 1905, Sioux City College of Medicine (Iowa)
- WAGNER, CARL VERN, 1947.....Associate in English
B.S., 1946, M.A., 1948, Washington
- WAGNER, CHARLOTTE FITTON, 1944 (1946).....Instructor in Speech
B.A., 1937, M.A., 1941, Washington
- WAGNER, LOUIS CHARLES, 1947.....Associate Professor of Marketing
B.A., 1938, Washington; M.A., 1940, Minnesota
- WAHL, EDWARD RONALD, 1949.....Assistant Professor of Military Science and Tactics
B.A., 1933, Idaho
- WALDRON, LAWRENCE GALEN, 1947 (1949).....Instructor in Architecture
B.Arch., 1936, Washington
- WALKER, JOHN HUNT, 1948.....Clinical Instructor in Radiology
B.S., 1936, Washington; M.D., 1940, Michigan
- WALKER, LAUREN McNEAL, 1946 (1947).....Assistant Professor of Accounting
B.A., 1939, M.B.A., 1943, Washington; C.P.A., 1943, State of Washington
- WALKER, RICHARD BATTSON, 1948.....Instructor in Botany
B.S., 1938, Illinois; Ph.D., 1948, California
- WALLING, CLYDE V., YN2, 1948.....Associate in Naval Science
- WALTERS, MARGARET CURTIS, 1929 (1947).....Assistant Professor of English
B.A., 1917, Mills; M.A., 1919, Yale
- WANAMAKER, FRANK HERMAN, 1947 (1948).....Lecturer in Nursing; Consultant in Surgery;
Clinical Professor of Oral Surgery
D.D.S., 1922, M.D., 1929, Northwestern
- WANG, KAN-YU, 1949.....Visiting Professor of Chinese Politics
B.A., 1929, National Tsinghua University; M.A., 1930, Ph.D., 1947, Harvard
- WANGEMAN, CLAYTON PRATER, 1949.....Consultant in Surgery
B.A., 1929, Ohio Wesleyan; M.D., 1933, Western Reserve
- WARD, ARTHUR ALLEN, Jr., 1948 (1949).....Associate Professor of Surgery
B.A., 1938, M.D., 1942, Yale
- WARE, HENRY HOLDSHIP, 1950.....Visiting Lecturer in Economics
A.B., 1932, Pomona; A.M., 1939, Columbia
- WARNER, FRANK MELVILLE, 1925 (1937).....Professor of General Engineering
B.S. in M.E., 1907, Wisconsin
- WARNING, MARGARET CYNTHIA, 1943 (1947).....Assistant Professor of Home Economics
B.A., 1936, Morningside College (Iowa); B.S., 1944, M.A., 1945, Washington
- WATERS, ELLEN HARRIET, 1946.....Assistant Professor of Physical Education
B.S., 1927, Washington; M.A., 1940, Columbia
- WATSON, WARREN KENNETH, 1948.....Instructor in Mechanical Engineering
B.S. in M.E., 1943, Washington State
- WATSON, WILBUR EARL, 1946.....Clinical Associate in Anatomy and Surgery
B.S., 1930, Washington; M.D., 1935, McGill
- WATTS, CHARLES EDWARD, 1947.....Clinical Professor of Medicine
B.S., 1913, Idaho; M.D., 1918, Rush Medical College
- WATTS, DAVID HILTON, WOJG, 1949.....Assistant Professor of Air Science and Tactics
B.S., 1936, Stephen F. Austin State College (Texas)
- WEATHERBIE, WENDELL JOHN, 1949.....Associate in Geography
A.B., 1948, Kansas City

- WEATHERFORD, JUDITH ANNE, 1949.....Associate in English
B.S., 1946, Oregon State; M.A., 1948, Washington State
- WEAVER, CHARLES EDWIN, 1907 (1921).....Professor of Geology
B.S., 1904, Ph.D., 1907, California
- WEAVER, ROBERT NOLAN, GMC, U.S.N., 1948.....Instructor of Naval Science
- WEBER, JULIUS A., 1949.....Consultant in Surgery
B.S., 1923, M.D., 1925, Nebraska
- WEBSTER, DONALD HOPKINS, 1939 (1948).....Professor of Political Science;
Director of Bureau of Government Research and Services
B.A., 1929, LL.B., 1931, Ph.D., 1933, Washington
- WEIKEL, RAYMOND CHESTER, 1948.....Assistant Professor of Aeronautical Engineering
A.B., 1932, Wabash College (Indiana); A.M., 1939, Illinois
- WEINSTEIN, SYDNEY, 1947.....Clinical Instructor in Medicine
B.S., 1926, Washington; M.D., 1930, Jefferson Medical College
- WEISER, RUSSELL SHIVLEY, 1934 (1949).....Professor of Microbiology
B.S., 1930, M.S., 1931, North Dakota State; Ph.D., 1934, Washington
- WELANDER, ARTHUR DONOVAN, 1937 (1948).....Assistant Professor of Fisheries
Research Associate in Applied Fisheries Laboratory
B.S., 1934, M.S., 1940, Ph.D., 1946, Washington
- WELKE, WALTER CARL, 1929 (1943).....Associate Professor of Music
B.M. in Educ., 1927, Michigan
- WENDLING, AUBREY, 1948.....Associate in Sociology
B.A., 1944, San Francisco State College
- WENNEKENS, MARCEL PAT, 1948.....Associate in Romance Languages and Literature
- WERNER, AUGUST HANSEN, 1931 (1932).....Professor of Music
B.S., 1913, College of Agriculture (Stend, Norway)
- WESNER, ELENORA M., 1924 (1946).....Assistant Professor of German
B.Ped., 1909, Colorado State Normal School; A.B., 1915, Chicago
M.A., 1923, Northwestern
- WESSMAN, HAROLD EVERETT, 1948.....Professor of Civil Engineering;
Dean of the College of Engineering
B.S., 1924, M.S., 1925, C.E., 1929, Ph.D., 1936, Illinois
- WEST, FRANK BEACH, 1946.....Assistant Professor of Chemical Engineering
B.S. in Chem.E., 1936, Ph.D., 1939, Minnesota
- WEST, THEODORE CLINTON, 1949.....Instructor in Pharmacology
B.S., 1948, M.S., 1949, Washington
- WESTPHAL, KATHERINE V., 1946.....Instructor in Art
B.A., 1943, California; M.A., 1943, California School of Fine Arts
- WHEELER, BAYARD O., 1948.....Associate Professor of Business Administration
A.B., 1928, California; M.A., 1930, Washington; Ph.D., 1942, California
- WHEELER, HARRY EUGENE, 1948.....Associate Professor of Geology
B.S., 1930, Oregon; A.M., 1932, Ph.D., 1935, Stanford
- WHERETTE, WILLIAM CARNES, 1948.....Instructor in Architecture
B.Arch., 1948, Carnegie Institute of Technology
- WHITE, ELLISON F., Jr., 1948.....Clinical Instructor in Medicine
B.A., 1937, Mississippi College; M.D., 1942, Tennessee; M.S., 1947, Minnesota
- WHITE, MARY ELIZABETH, 1946.....Instructor in Music
B.M.E., 1935, Southern California
- WHITE, MYRON LESTER, 1947.....Associate in Humanistic-Social Studies
B.A., 1943, Washington
- WHITE, NANCY MAY, 1949.....Associate in Drama
B.A., 1933, Washington
- WHITELEY, ARTHUR HENRY, 1947.....Assistant Professor of Zoology
B.A., 1938, Kalamazoo College; M.A., 1939, Wisconsin; Ph.D., 1945, Princeton
- WHITTLESEY, WALTER BELL, 1909 (1929).....Assistant Professor of Romance Languages
B.A., 1907, M.A., 1909, Washington
- WICKS, RAYMOND ERNST, 1948.....Associate in Mechanical Engineering
- WIESE, HERBERT FRANK, 1949.....Instructor in German
B.A., 1948, Utah
- WIGLEY, JOSEPH ALEXANDER, 1949.....Associate in Speech
B.A., 1947, Washington
- WILCOX, ELGIN ROSCOE, 1921 (1936).....Professor of General Engineering;
Executive Officer of the Department of General Engineering
B.S., 1915, Met.E., 1919, Washington

- WILHELM, HELLMUT, 1948.....Lecturer in Chinese History
Ph.D., 1932, University of Berlin
- WILKEY, JOHN RICHARD, 1949.....Clinical Instructor in Public Health
and Preventive Medicine
B.A., 1926, Western Ontario; M.D., C.M., 1931, McGill; D.P.H., 1940, Toronto
- WILKIE, RICHARD FRANCIS, JR., 1937 (1948).....Assistant Professor of Germanic Literature
B.A., 1934, M.A., 1936, Washington
- WILKINS, WILLIAM JOHN, 1950.....Associate Judge of Law
LL.B., 1927, George Washington
- WILKINSON, JOHN N., 1947.....Clinical Instructor in Medicine
B.S., 1925, Mississippi; M.D., 1928, Virginia
- WILLIAMS, BETSEY A., 1948.....Acting Assistant Professor of Nursery Education
B.S., 1945, M.A., 1946, New York University
- WILLIAMS, CURTIS TALMADGE, 1920 (1936).....Professor of Methods and
Philosophy of Education
A.B., 1913, Kansas State Normal; A.M., 1914, Ph.D., 1917, Clark University
- WILLIAMS, ELGIN, 1947.....Assistant Professor of Economics
A.B., 1942, A.M., 1944, Texas; Ph.D., 1948, Columbia
- WILLIAMS, FRANKLIN HAYDN, 1949.....Acting Assistant Professor of Marketing
A.B., 1946, California; A.M., 1947, Tufts
- WILLIAMS, JOSEPH EARL, 1946 (1948).....Associate Professor of Geography
A.B., 1930, California; Ph.D., 1932, Vienna
- WILLIAMS, PAUL LELAND, 1947.....Clinical Instructor in Dermatology
B.S., 1934, M.D., 1937, Oregon
- WILLIAMS, ROBERT HARDIN, 1948.....Professor of Medicine; Executive Officer
of the Department of Medicine
A.B., 1929, Washington and Lee; M.D., 1934, Johns Hopkins
- WILLIS, CLIFFORD LEON, 1946.....Instructor in Geology
B.S. in Min. Engr., 1939, Kansas
- WILLIS, LEOTA SNIDER, 1943 (1948).....Assistant Professor of English
B.A., 1923, California; M.A., 1930, Ph.D., 1931, Pennsylvania;
Cert. of Studies, 1932, Sorbonne, Paris
- WILLISTON, FRANK GOODMAN, 1943 (1949).....Professor of Far Eastern History
A.B., 1922, Ohio Wesleyan; M.A., 1926, Ph.D., 1935, Chicago
- WILSON, CLOTILDE MARCONNIER, 1929 (1937).....Assistant Professor of Romance Languages
B.A., 1926, M.A., 1927, Ph.D., 1931, Washington
- WILSON, FLORENCE BERGH, 1929 (1947).....Associate Professor of Music
B.Mus., 1917, B.A., 1924, Washington; M.A., 1925, Columbia
- WILSON, GALE EDWARD, 1948.....Lecturer in Forensic and Legal Medicine;
Lecturer in Jurisprudence, Dentistry
B.S., 1926, Washington; M.D., 1930, Harvard
- WILSON, ROLAND EDWARD, 1947.....Instructor in Architecture
B.S. in Arch., 1932, Michigan
- WILSON, RUTH MARIAN, 1936 (1945).....Associate Professor of Physical Education;
Executive Officer of the Department of Physical Education for Women
B.S., 1931, Utah; M.S., 1936, Wisconsin
- WILSON, WAYNE LARSEN, 1949.....Associate in Mechanical Engineering
B.S. in Aero.E., 1944, Colorado
- WILSON, WILLIAM CHARLES EADE, 1926 (1947).....Professor of Romance Languages
A.B., 1922, Montana; M.A., 1925, Ph.D., 1928, Washington
- WILSON, WILLIAM RONALD, 1919 (1929).....Professor of Psychology
B.A., 1917, M.S., 1920, Ph.D., 1925, Washington
- WINDRICH, ELAINE, 1949.....Acting Assistant Professor of Political Science
A.B., 1942, Ph.D., 1947, California
- WINGER, ROY MARTIN, 1918 (1925).....Professor of Mathematics;
Executive Officer, Department of Mathematics
A.B., 1906, Baker (Kansas); Ph.D., 1912, Johns Hopkins
- WINGETT, MARCEL EDWARD, 1949.....Associate in Psychology
B.A., 1948, Grinnell College (Iowa)
- WINN, NORMAN FIELD, 1948.....Associate in English
B.A., 1931, Utah; Ph.M., 1932, Wisconsin
- WINSKILL, EDWARD MYERS, 1949.....Clinical Instructor in Periodontology
B.S., 1944, College of Puget Sound; D.M.D., 1946, Oregon
- WINSLOW, ARTHUR MELVIN, 1918 (1927).....Professor of Mechanical Engineering
Ph.B., 1903, Brown; B.S., 1906, Massachusetts Institute of Technology

- WINTHER, SOPHUS KEITH, 1925 (1940).....Professor of English
B.A., 1918, M.A., 1919, Oregon; Ph.D., 1926, Washington
- WITHEY, STEPHEN BASSETT, 1947.....Associate in Psychology
B.A., 1940, Asbury College (Kentucky); M.A., 1947, Northwestern
- WITTFOGEL, KARL AUGUST, 1947 (1949).....Professor of Chinese History
Ph.D., 1928, Frankfurt
- WOLCOTT, MAJOR WILLIAM JOHNSTONE, 1949.....Assistant Professor of Military
Science and Tactics
B.A., 1933, Washington
- WOLFE, HAROLD KENNETH, 1948.....Associate in Mechanical Engineering
- WOLFE, MYER RICHARD, 1949.....Assistant Professor of City Planning
B.S., 1940, New Hampshire; M.R.P., 1947, Cornell
- WOLLETT, DONALD HOWARD, 1946 (1948).....Assistant Professor of Law;
Assistant to the Dean of the Law School
B.A., 1941, Chicago; LL.B., 1942, Indiana
- WOOD, MARIANNE LEHMANN, 1949.....Associate in German
- WOODCOCK, EDITH, 1930 (1945).....Associate Professor of Music
B.M., 1925, Rochester; M.M., 1936, Washington
- WOODWARD, RICHARD ROBERT, 1947....Assistant Professor of Management and Statistics;
Assistant to the Dean of Business Administration
B.A., 1939, Dartmouth; M.B.A., 1941, Harvard
- WOOLSTON, HOWARD BROWN, 1919 (1947).....Professor Emeritus of Sociology;
Research Consultant
A.B., 1898, Yale; S.T.B., 1901, Chicago; M.A., 1902, Harvard; Ph.D., 1909, Columbia
- WORCESTER, DEAN AMORY, JR., 1946.....Assistant Professor of Economics
A.B., 1939, M.A., 1940, Nebraska; Ph.D., 1943, Minnesota
- WORKS, AMY LOU, 1946.....Associate in Secretarial Studies
A.B., 1941, MacMurray College (Illinois)
- WORTHINGTON, ROBERT LANGHORNE, 1949.....Clinical Instructor in Psychiatry
M.D., C.M., 1933, McGill
- WRIGHT, LT. (JG) BURTON, U.S.N.R., 1948 (1950).....Assistant Professor of Naval Science;
Associate in Anthropology
B.S., 1947, Washington
- WRIGHT, KENNETH ARLING, 1947.....Research Associate in Pulp Mills Research
B.S., 1932, Ph.D., 1938, Washington
- WRIGHT, LAURENCE ALBERT, 1948.....Associate in Finance
B.A., 1947, Washington
- WU, JAMES TA-KUN, 1946 (1949).....Acting Assistant Professor of Economics;
Research Associate in the Far Eastern and Russian Institute
B.A., 1934, Soochow University (China); M.A., 1936, Wa Se-Pa University (Japan)
- WYBOURN, MARJORY ADA, 1948.....Instructor in Home Economics
B.S., 1944, Washington; M.A., 1948, Columbia
- WYLIE, WENDELL LEROY, 1949.....Professor of Dentistry; Director of
Postgraduate Dental Education
A.B., 1936, College of Wooster; D.D.S., 1940, Western Reserve;
M.S., 1942, Illinois
- WYRENS, ROLLIN G., 1948.....Clinical Instructor in Urology
B.S., 1934, M.B., 1937, M.D., 1938, Northwestern; M.S., 1942, Minnesota
- YAGGY, ELINOR MAY, 1943 (1946).....Instructor in English
B.A., 1929, M.A., 1939, Idaho; Ph.D., 1946, Washington
- YAGI, FUMIO, 1946 (1949).....Assistant Professor of Mathematics
B.S., 1938, M.S., 1941, Washington; Ph.D., 1943, Massachusetts Institute of Technology
- YAMAMURA, DOUGLAS SHIGEHARU, 1947.....Associate in Sociology
Ed.B., 1938, Ed.M., 1941, University of Hawaii
- YANG, RICHARD FU-SEN, 1948.....Associate in Chinese Language
B.A., 1943, Yenching University (China)
- YETT, KEITH S., 1948.....Associate in Mechanical Engineering
- YODER, WARREN GEORGE, 1948.....Instructor in Civil Engineering
B.S. in C.E., 1942, Purdue
- YOUNG, ALLAN CHARLES, 1949.....Research Associate in Physiology and Biophysics
B.A., 1930, M.A., 1932, British Columbia; Ph.D., 1934, Toronto
- YOUNG, HARRY ALLEN, 1948.....Professor of Prosthodontics; Executive Officer
of the Department of Prosthodontics
D.D.S., 1919, Indiana

Alphabetical List of the Faculty

- YOUNGKEN, HEBER WILKINSON, Jr., 1942 (1949) . . . Associate Professor of Pharmacognosy
A.B., 1935, Bucknell University (Pennsylvania); B.S., 1938, Massachusetts College
of Pharmacy; M.S., 1940, Ph.D., 1942, Minnesota
- YOUNGMAN, EDWARD AUGUST, 1950 . . . Research Associate in Chemistry and
Chemical Engineering
B.S., 1948, Washington
- YUNCK, WILLIAM PHILIP, 1948 . . . Clinical Instructor in Urology
B.S., 1930, B.M., 1934, M.D., 1935, Minnesota
- ZALOKAR, MARKO, 1949 . . . Assistant Professor of Zoology
Dipl. Phil., 1940, University of Ljubljana (Yugoslavia);
D.Sc., 1945, Geneva (Switzerland)
- ZECH, RAYMOND L., 1947 . . . Senior Consultant in Surgery
B.S., 1919, M.D., 1920, Northwestern
- ZETLIN, EMANUEL ROMAN, 1947 . . . Professor of Music
B.A., 1916, Imperial Conservatory (Petrograd); Dr.Mus. (Honorary), 1936,
Washington College of Music (Washington, D.C.)
- ZILLMAN, LAWRENCE JOHN, 1932 (1943) . . . Associate Professor of English
B.A., 1928, Ph.D., 1936, Washington
- ZIMMERMAN, BRUCE McLUNG, 1947 . . . Clinical Assistant Professor of Medicine
B.S., 1935, North Dakota; M.D., 1937, Northwestern
- ZOLL, ALLEN ALDERSON, III, 1949 . . . Instructor in Industrial Management
B.B.A., 1948, Southern Methodist; M.S., 1949, Columbia
- ZUCKERMAN, HERBERT SAMUEL, 1939 (1947) . . . Associate Professor of Mathematics
B.S., 1932, California Institute of Technology; M.S., 1934, Chicago;
Ph.D., 1936, California
- ZYLSTRA, LAURENCE BERNARD, 1949 . . . Associate in Mechanical Engineering

WALKER-AMES PROFESSORS AND LECTURERS

- COWLEY, MALCOLM, 1950 . . . Walker-Ames Lecturer in American Literature
A.B., 1920, Harvard
- KUTTNER, STEPHAN, 1949 . . . Walker-Ames Professor of History
J.U.D., 1930, Berlin
- READ, HERBERT HAROLD, 1949 . . . Walker-Ames Professor of Geology
D.Sc., Royal College of Science (England)
- TYLER, ALBERT, 1950 . . . Walker-Ames Professor of Zoology
A.B., 1927, M.A., 1928, Columbia; Ph.D., 1929, California Institute of Technology

THE UNIVERSITY OF WASHINGTON

The University of Washington was established and located in Seattle by the Washington Territorial Legislature, January 11, 1861, seven years after Congress had set aside two townships of land to aid a proposed territorial educational institution. Immediately after legislative authorization, the Rev. Daniel Bagley, a Methodist minister, was appointed to direct the work of clearing a ten-acre tract in what is now Seattle's metropolitan district near the Olympic Hotel. On May 21 of the same year the cornerstone of the first territorial University building, called the "finest educational structure in the Pacific Northwest," was laid.

Thirty-seven students attended the first classes, which were opened November 4, 1861, in a temporary one-room structure. The University buildings were completed the following year. By 1890 the institution had outgrown its first campus, despite having to be closed in 1863, 1867, and 1876 for lack of money and students. In 1891 the state legislature considered the question of a new site and in March, 1893 a legislative committee selected the present 600-acre site between Lakes Washington and Union for the new location.

The cornerstone of the "Administration Building," now Denny Hall, was laid July 4, 1894 and the following academic year instruction was started there with 425 students. In 1899 men's and women's dormitories, Lewis and Clark Halls, were built and in 1902 Parrington Hall, then called "Science Hall," supplemented the classrooms in the "Administration Building." The Alaska-Yukon-Pacific Exposition in 1909 provided the campus with the Washington State Museum, Physiology, Meany, and Engineering Halls, the Music Building, and several other smaller buildings.

From the first ten-acre campus and first pioneer building has developed a modern plant valued at over \$50,000,000. Now the ninth largest state university in the country, the University of Washington has an average enrollment of 16,000 students per quarter and a full-time faculty of more than 800. There are more than 100 buildings on the campus, including seventeen new structures provided by the \$25,000,000 postwar building program.

Special Facilities at the University

Libraries. The University libraries contain more than 670,000 volumes representing all fields in the University curriculum. The basic collection is housed in the Henry Suzzallo Library building. Special collections are maintained in sixteen branch and departmental libraries, including Architecture, Art, Chemistry, Education, English and Speech, Far Eastern, Forestry, Health Sciences, Humanistic-Social, Institute of Labor Economics, Journalism, Mathematics and Physics, Mines, Philosophy, and Political Science. Library service is augmented by a photographic laboratory fully equipped to provide photostats and microfilms for students and faculty.

The Law Library in Condon Hall is the largest and most complete law school library west of the Mississippi and is among the top ten in size of all the law collections in the nation. It contains approximately 110,000 volumes, including decisions of all English and American courts of last resort and reported decisions of all the lower courts. All legal periodicals published in the English language are received.

The Drama Library in Denny Hall has a collection of more than 13,000 volumes, including about 4,000 acting editions of nineteenth-century plays which are made available to schools throughout the state in the School of Drama's free loan service. This branch library also contains 300 manuscript plays by twentieth-century playwrights, 200 mimeographed acting editions of the late nineteenth- and twentieth-century plays, 18,000 theatrical photographs of stage productions, portraits of actors, and other historical material.

The Health Sciences Library, occupying two floors, is planned for 100,000 volumes and is equipped with reading, conference, and periodical rooms, and space for micro-filming and historical collections.

The Pacific Northwest Bibliographic Center, sponsored by the Pacific Northwest Library Association, facilitates interlibrary loans and other cooperative library services in the region. It maintains a Union Catalog of the holdings of more than thirty libraries in the Pacific Northwest, as well as those of the Library of Congress.

Henry Art Gallery. Located on the campus at East Forty-first Street and Fifteenth Avenue N.E., the gallery was built originally to house a collection of nineteenth-century paintings and given to the University by Horace C. Henry. The permanent collection is now supplemented with constantly changing exhibitions of contemporary works in paintings, prints, sculpture, architecture, and the decorative arts. Concerts, lectures, and film programs are regularly scheduled and the community and the students on the campus are encouraged to attend. The gallery is open to the public on week days from 10 a.m. to 5 p.m., Sundays, 2 p.m. until 6 p.m., and Wednesday evenings from 8 p.m. to 10 p.m.

Washington State Museum. Located across from the Memorial Union Building, it houses collections representative of the natural science and anthropology of the Northwest and the Pacific. Special exhibits and traveling study collections are available on request for schools throughout the state.

University Health Center. These facilities, next to the Faculty Club, consist of an infirmary and a dispensary, including seventy-five beds, a diet kitchen, and offices for doctors and nurses. Students are entitled to free medical care for minor illnesses and injuries, and faculty and employees receive emergency care and the treatment of acute infectious ailments.

Campus Theatres. Operated by the School of Drama on a nonprofit basis, two theatres present plays to the public Monday through Saturday. Both have won national recognition for their distinctive style and high standard of performance. The Showboat Theatre, on the shore of Lake Union, resembles the old-time showboats which played to audiences up and down the Mississippi. The Penthouse Theatre, located on lower campus, is ultramodern in design, with the theatre proper built in circus style. The plays are presented on a center floor the level of the audience.

University Press. Situated in Commerce Hall, the University Press publishes general books, technical and scholarly journals, University publications, and material for all departments of the University.

University Arboretum. Southeast of the campus in the Montlake district, these grounds are always open for inspection and visitors are welcome. Conducted tours are offered especially during April, May, and June when the rhododendrons, cherries, dogwoods, and azaleas are in flower.

Oceanographic Laboratories. Two laboratories, one on Lake Union and another at Friday Harbor in the San Juan Islands, are provided with circulating sea water systems and are ideally located for the study of the many problems of the sea. The main laboratory is situated on the campus fronting Lake Union, and the field laboratories face salt water on a 480-acre tract on San Juan Island. Advanced research students study the marine flora and fauna of this region with its extreme physical and chemical conditions in a relatively small area.

Experimental Forestry. 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, an eighty-acre tract at Maltby, Washington, contains a second growth stand of approximately forty-year-old timber and is used in connection with laboratory instruction in silviculture and mensuration and for some experimental work.

Fisheries. The School of Fisheries, located on lower campus, is the only university school of fisheries in the world. Adjacent to both fresh and salt water, and near numerous commercial fisheries, canneries, smokehouses, cold storage plants, and fertilizer plants, it is ideally located for the study of fisheries, aquatic life, and fish culture. The school has a hatchery, fish ponds, and experimental equipment.

The Applied Fisheries Laboratory is the coordinating center for virtually all federally supported research on the effects of radioactivity on marine life. Under the direction of Dr. Lauren R. Donaldson, the laboratory has continued to make annual radiobiological surveys at Bikini and Eniwetok atomic bomb test areas.

The Fisheries Research Institute, established in 1946, was financed by annual grants from the Alaska Salmon Industries, Inc., to make the first industry-sponsored salmon investigation ever attempted in Alaska.

Experiment Stations. The Northwest Mines Experiment Station of the United States Bureau of Mines, located in Roberts Hall, works in close cooperation with the School of Mineral Engineering in serving the Pacific Northwest and the coast regions of Alaska.

The Engineering Experiment Station, in More Hall, was established in 1917, to coordinate investigations in progress and to facilitate the development of engineering and industrial research of the University. Its purpose is to aid in the industrial development of the state and nation by scientific research and by furnishing information for the solution of engineering problems.

The Experiment Station investigates and publishes information concerning engineering problems of a more or less general nature which will be helpful in municipal, rural, and industrial affairs; undertakes extended research and publishes reports on engineering and scientific problems; and provides opportunities for graduate engineers to conduct research under conditions that will most effectively prepare them for professional service. Requests for information concerning research fellowships should be addressed to the Director, Engineering Experiment Station, University of Washington, Seattle 5. (See also page 167.)

Bureaus of Research. The Bureau of Business Research, maintained in the College of Business Administration, has the responsibility of applying scientific research methods to problems of economics and business in the state and throughout the Pacific Northwest. The bureau cooperates with local, state, and national business and professional groups interested in research in business and economic problems; and issues a monthly journal, *Pacific Northwest Industry*, which contains basic statistical data, bibliography, and timely articles.

The Bureau of Governmental Research and Services, maintained by the Political Science Department, gives research and consultative services to state and local agencies and conducts the annual Institute of Government. Other bureaus and institutes in this department include the Bureau of International Relations, the Institute of Public Affairs, the Institute of International Affairs, and the Institute of National Security.

The Institute of Labor Economics, situated in Savery Hall, makes available personnel and equipment at all times to assist those who desire aid in the solution of labor economics or industrial relations.

Far Eastern and Russian Institute. Located in Thomson Hall, it was established in 1946 to provide opportunities for the study in a field which is continually growing more important, both economically and culturally, to the Pacific Northwest and the country as a whole. The institute is conducting a Modern Chinese History Research Project and is sponsoring a Chinese History Research Project located at Columbia University.

Soviet Press Translations, fortnightly periodical published by the Institute, consists of articles, editorials, book reviews, and news items taken from the Soviet press and translated in their entirety. Every effort is made to have the translations conform as closely as possible to the letter and spirit of the original; the translations include no "free" translations, no excerpts, summaries, or commentaries. This unique publication, started in 1946, has a nation-wide circulation. It has been commended for its service in acquainting the American public with the Soviet press.

Institute of Child Development. Established in 1910 as part of the Department of Psychology, the institute provides a clinical training facility for graduate students preparing for professional careers in clinical or child psychology; provides clinical and consultation services for agencies and individuals concerned with the adjustment of children; and conducts research on basic problems of normal and problem child behavior and on applied problems involving evaluation of clinical methods and techniques.

Since its beginning, more than 12,000 children from almost every community in the state have come to the institute, having been referred by public and private schools, welfare agencies, adoption agencies, juvenile courts, hospitals, physicians, and parents. The institute is staffed by clinical psychologists and social workers.

Military Training Programs. These programs have been offered at the University since 1875 with the exception of a brief period early in the present century. During peacetime the University maintains Departments of Military Science and Tactics, Naval Science, and Air Science and Tactics.

Foundations. A gift from Sigmund Schwabacher and the executor of the will of Abraham Schwabacher established the Bailey and Babette Gatzert Foundation for Child Welfare in 1910. The foundation, now under the administrative control of the Department of Child Welfare, furnishes funds for the Institute of Child Development in the Department of Psychology.

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.

Office of Population Research. An integral part of the Department of Sociology, this office was established in 1948, for the purpose of expanding the research and student training programs in the fields of demography and human ecology. Briefly, the Office of Population Research has a threefold purpose: (1) to conduct basic research in the fields of demography and human ecology with special emphasis on problems of the Pacific Northwest, particularly the state of Washington; (2) to provide informational and advisory services as well as to conduct more directly utilitarian research for governmental, educational, industrial, and other agencies; (3) and to serve as a training center for both undergraduates and graduate students in the social sciences. In connection with the training program of the Office of Population Research, laboratory facilities and research fellowships are available to qualified students.

Speech and Hearing Clinic. Established in 1935 as a part of the Department of Speech, the clinic offers remedial facilities for students with disorders of speech or voice and educational rehabilitation for students with defects of hearing. Similar diagnostic and training facilities are available to nonstudents, both children and adults, as a part of the curriculum in speech and hearing therapy.

Washington Public Opinion Laboratory. This nonprofit scientific institute of the Department of Sociology is operated in cooperation with Washington State College. Interested exclusively in scientific accuracy, the laboratory polls public opinion on issues of civic interest, including those of state, national, and international importance. Dr. Stuart C. Dodd of the Department of Sociology of the University and Dr. Joseph E. Bacher of the Sociology Department of the State College are codirectors. The University division is staffed and controlled by the Sociology Department, but project proposals are received from the various social science departments and graduate students are trained in public opinion polling with special reference to their major social science fields. The methodological and technical developments in the laboratory are published by the University and by the State College respectively. Information on popular issues is furnished newspapers and the radio.

THE UNIVERSITY ORGANIZATION

Five institutions compose the state's system of public higher education. They are the University of Washington, the State College, and the three state colleges of education. To the University is given exclusive authority to instruct in the following major lines: aeronautical engineering, architecture, commerce, dentistry, fisheries, forestry, journalism, law, librarianship, marine engineering, and medicine.

Concurrent authority is held by the University and the State College to instruct in the following major lines: chemical engineering, civil engineering, electrical engineering, home economics, liberal arts, mechanical engineering, mining, pharmacy; professional training of elementary and high school teachers, school supervisors, and school superintendents; and pure science.

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

- A. *The College of Arts and Sciences*, composed of the departments in liberal arts and pure science and the following semiprofessional schools:
 - The School of Architecture
 - The School of Art
 - The School of Drama
 - The School of Fisheries
 - The School of Home Economics
 - The School of Journalism
 - The School of Music
 - The School of Physical Education
- General Studies—for students with interdepartmental major
- B. *The College of Business Administration*
- C. *The College of Education*
- D. *The College of Engineering*, which includes the School of Mineral Engineering
- E. *The College of Forestry*
- F. *The Graduate School*, including the Graduate School of Social Work and the School of Librarianship
- G. *The School of Law*
- H. *The College of Pharmacy*
- I. *The School of Medicine*
- J. *The School of Dentistry*
- K. *The School of Nursing*
- L. *The Far Eastern and Russian Institute*

Definitions and Explanations. The word *course* refers to a single study pursued for a definite period, for which credit may be given toward University requirements for graduation in accordance with the number of hours taken. A *curriculum* is a group of courses arranged to be followed consecutively or concurrently. A *department* is the unit of instructional organization in a particular science or art, as the department of geology. A *college* gives full curricula, beginning with the freshman year, 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. 87) 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 5-credit course.

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

For further definitions see page 87.

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, Navy, or Air Force by meeting the requirements in Military, Naval, or Air Science. Military, Naval, or Air Science courses leading to a reserve commission can be taken concurrently with the student's scheduled academic work.

The Four-Quarter System. The University is operated on the four-quarter system, each quarter having approximately eleven working weeks.

SECTION I — GENERAL INFORMATION

ADMISSION TO THE UNIVERSITY

It is impossible to guarantee how long the admission regulations here stated will be maintained, since it is necessary to make frequent changes to meet changing conditions. *Prospective students should determine the admission requirements in effect at the time they are ready to apply.* Applicants who come to the University before their credentials have been submitted and approved do so at their own risk.

Who Is Eligible

The University wishes to make certain that all qualified Washington students are assured of admission. To this end, the Admissions Board extends first preference to legal residents of the state of Washington and the territory of Alaska, and to sons and daughters of University of Washington alumni.

While most of the divisions of the University are also able to accept qualified out-of-state students, the College of Pharmacy can accommodate only a few high-scholarship students from other states. The Colleges of Engineering and Forestry limit admission of out-of-state students to those whose records indicate better than average ability to handle the technical subjects required. The School of Architecture can accommodate qualified out-of-state freshmen with better than average scholarship records and only a few high-scholarship applications from other schools of architecture for advanced work.

Applicants who come to the University before their credentials have been submitted and approved do so at their own risk.

How to Obtain Information

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

Admission Procedure

1. Before a student may be admitted to the University, he must place on file with the Registrar complete credentials covering all his previous secondary and college education. These records are kept on permanent file by the University and cannot be returned to the student. For admission to the Autumn Quarter, the required credentials should be forwarded *after high school graduation* and before July 15. *The last day for new students to submit applications with complete credentials for admission in the Autumn Quarter is September 1.* (See Calendar, page 8.) For admission to the other quarters, applications and credentials should be submitted at least thirty days before the opening of the quarter. This applies to *all* new students seeking admission as graduates or undergraduates.

Students seeking admission for the Autumn Quarter may be disappointed if applications and credentials are submitted later than July 15, as those received by that date will have precedence over those received later. *It is imperative that students observe this deadline in order to insure prompt attention to credentials and reply to correspondence.*

2. Before receiving a notice of admission, new out-of-state students must submit a Medical Questionnaire on a form supplied by the Registrar and completed by a Doctor of Medicine at the time of application for admission.

Admission Requirements (Subject to Limitations Stated Above)

1. *All entering freshmen* are required to:

- a. Submit an official application-for-admission blank from an *accredited* high school (obtainable from any high school principal or from the Registrar) which includes all credits and grades and a statement that the student has completed his high school course with a diploma of graduation. A high school diploma may not be substituted for the official blank. Accredited high schools in Washington are those accredited by the State Department of Public Instruction; in Alaska, by the Northwest Association of Secondary and Higher Schools; in other states, by the state university of the state or regional accrediting association.

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 below. In administering this requirement the following reservations and exceptions are made:

- (1) The 16 units cannot include any unit which received a grade lower than the minimum passing grade as defined by the high school itself.
- (2) Less than a unit in one foreign language will not be counted.
- (3) Students who are unable to meet the specific subject requirements of the college to which they seek entrance may petition the Dean of the College for permission to enter, with *provisional standing*, provided that they offer at least 3 units in English and 6 additional units in academic fields. A student having an entrance deficiency shall register for it each quarter until it is removed. *Provisional standing* continues until the student has satisfied the entrance requirements of the college in which he is enrolled. *A student in*

* 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 2.0 grade point means a "C" average in terms of the standard grading system of the state of Washington. Students in other states who are recommended to their own state universities on a different grading system will find their scholarship average adjusted to our four-point system.

MINIMUM UNIT ADMISSION REQUIREMENTS

(Entrance requirements are stated in terms of units. A unit equals two high school semester credits.)

For other recommendations see statement of college concerned.

College	Eng-lish	Mathematics	For. Lang.	Lab. Sci. ¹	Soc. Sci.	Other Academ. Subj. ²	Free Elec-tive
1. Arts and Sciences ³	3	2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.)	2 of one ⁴	1*	1	0	7
2. Business Administration.	3	2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.)	0	0	1 (U.S. Hist. & Civics)	Minimum of 3	7
3. Education†....	3	2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.)	‡	1	1	Minimum of 2	7
4. Engineering ...	3	3 (Elem. & Adv. Alg., Plane & Solid Geom.) ⁵	0	1 (Chem.) ⁴ 1 (Phys.) ^{1a}	0	1	7
5. Forestry....	3	2½ (Elem. & Adv. Alg. & Plane Geom.)	0	†	0	Minimum of 3½	7
6. Pharmacy...	3	2 (Elem. Alg. & Plane Geom. or 2nd yr. Alg.)	0	†	0	Minimum of 4	7
7. Comprehensive (Admit to any college)		3 (Elem. & Adv. Alg., Plane & Solid Geom.)	2 of one ⁴	1 (Chem.) ⁴ 1 (Phys.) ^{1a}	1	0	5

¹ Approved laboratory sciences: biology, botany, chemistry, geology, physics, zoology.

^{1a} The pre-aviation course will be accepted as academic credit in science, but will not be counted as a laboratory science. It may not be substituted for physics in those curricula which specify physics as a part of the entrance requirements.

² Typical academic subjects are: English, foreign language, mathematics, science, history, economics. Some nonacademic subjects are: commercial courses, manual training, home economics, band.

³ Includes also Schools of Art, Architecture, Drama, Fisheries, Home Economics, Journalism, Music, and Physical Education.

⁴ The College of Engineering includes the School of Mineral Engineering. A student who is deficient in chemistry will be expected to earn 13 credits in chemistry in his freshman year instead of the usual 9.

⁵ Trigonometry, although not required, is strongly recommended.

* Two units of one foreign language and one unit of one laboratory science should be taken in high school. Students who do not take these subjects in high school will be asked to take them in the University during the freshman year, with credit toward graduation.

† Pharmacy recommends one unit of a laboratory science. Forestry recommends one unit each of physics and chemistry.

‡ A 2.2 grade-point average is required for admission to the College of Education. An entrance deficiency in foreign language may be removed by substituting 15 credits in English Literature.

this classification will not be permitted to file an application for a degree. Deficiencies may be made up with university credit if college courses covering the high school material are available; 10 college credits shall be considered the equivalent of one high school unit, except that for foreign languages (a) 15 quarter credits of college work shall be considered the equivalent of 2 units (4 semesters) of high school credit, and (b) no student may receive credit for repetition of work at the same or at a more elementary level, if credit has been granted in the earlier course. This rule shall apply whether the earlier course was taken in high school or in college, and whether, in the latter case, course numbers are duplicated or not. University credits earned by removing a deficiency cannot be used to satisfy group requirements (see page 115). 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 whose grade-point average is below 2.0 may petition the Admissions Board for admission to the University on probation, provided he meets other requirements for the regular admission to freshman standing. This petition must be accompanied by evidence that the applicant is able to do a higher grade of scholastic work than is indicated by his high school scholastic record. The student who is *admitted on probation* may continue his attendance at the University at the discretion of the dean of his college but may not (1) be pledged to or initiated into a fraternity or sorority, or engage in those other student activities in which his right to participate is restricted by the regulations of the Committee on Student Welfare; (2) engage in those athletic activities in which his right to participate is restricted by the regulations of the University Athletic Committee. He shall be removed from probation when he has earned a minimum of 12 academic credits with a 2.0 grade average. Provided that if such student carries less than 12 hours in one quarter, he may not be removed from probation unless he has earned a minimum of 2.0 average for the current quarter, as well as a minimum cumulative average of 2.0 for his total quarters in attendance. A student removed from probation under these provisions shall henceforth be subject to the regular scholarship rules. See page 105.
 - (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 86, item 2.
 - (7) Students who are *not graduated from high school* must pass College Entrance Board Examinations and meet entrance requirements without deficiency. An inquiry addressed to the Educational Testing Service, P.O. Box 592, Princeton, N.J., or Box 9896, Los Feliz Station, Los Angeles 27, California, will bring complete information.
2. *Advanced Undergraduate Standing.* Students who present complete transcripts and letters of honorable dismissal from other colleges of recognized rank will be granted whatever credit is acceptable to the University. Definite advanced standing shall not be determined until the end of the student's first quarter in residence. No credit will be allowed in the senior year. See Senior Residence Rule, page 101.
- The applicant shall present a scholastic record equivalent to that required of resident students of the University. In general, the University will not accept a student who is in scholastic difficulty at his former school.
- 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 or for work with private teachers, except upon examination. For fee, see page 96.
- c. Transfer of credit from institutions accredited for less than four years will not be accepted in excess of the accreditation of the school concerned. Transfer of junior college credit shall apply on University freshman and sophomore years only. A student who has completed a portion of his freshman and/or sophomore years in a four-year college may not transfer junior college credits in excess of that necessary to completion of the first two years in the University. In no case shall the transfer of junior college credit to the University exceed 90 quarter hours of credit.

Exception: If a veteran has attended a recognized Armed Forces training school prior to September, 1946, and has then attended a junior college, he shall be allowed credit for such service training and, in addition, shall be allowed up to a maximum of 90 quarter credits from the junior college as stated in section 2, c.

- d. No credit shall be granted to a student for courses taken in another collegiate institution while the student is in residence at the University, unless written permission to register for such courses is obtained by the student from the University department giving such instruction in the subject, from his major department, and from the dean of his college. The prescribed written permission shall be effective only if secured prior to such registration. Nothing in this rule shall make mandatory the granting of any credit by the University.

3. *College of Education and School of Law.* See pages 160 and 185.

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 page 217. To be recognized as a candidate for a graduate degree a graduate student shall secure the approval of a committee appointed by the dean of the Graduate School. See page 200.

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 twelve years of instruction may be held for additional high school work.

6. *Special Students.* Mature individuals (twenty-one years of age or over) not eligible for admission as regular students may apply to the Board of Admissions for special standing. They must (1) be classified as legal residents of the state of Washington or the territory of Alaska and (2) submit all available records of previous work in secondary schools and colleges.

A special student may take such regular courses as the dean of the college may determine. A special student may not participate in student activities, nor shall he be eligible for any degree, but by fulfilling the requirements for admission to the college or department in which he is enrolled, he may become a regular student.

7. *Auditors.* A mature person may register as an auditor in nonlaboratory courses or the lecture parts of laboratory courses by securing the consent of his dean and the instructor of the course and then paying a fee of \$12. (During the Summer Quarter tuition is the same as for regular students.) He may not participate in class discussion or laboratory work. He may receive credit in audited courses only by enrolling in them as a regular student in a subsequent quarter.

Advanced Credit

1. *By transfer of credits earned in residence.* See page 89.
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 examinations.*

- a. Examinations for advanced credit in courses offered by the University may be taken by a currently registered regular student on work done by private study, or on class work for which no credit has been granted by an institution of either secondary or collegiate grade, provided that such examinations may be taken if credit has been granted for work covered after high school graduation in a regularly organized thirteenth and fourteenth year program as authorized by the Washington State Board of Education.
- b. No duplication of credit shall be permitted, and no student may take an advanced credit examination in a course in which he has been registered at any time either as an auditor or as a student.
- c. The maximum number of credits obtainable by advanced credit examination shall be 30, not more than 15 of which may be obtained in one subject-matter field. All credits obtained by examination shall be counted as extension credits and shall be included in the maximum of 90 quarter credits allowed by extension.
- d. After examination for advanced credit no credit shall be granted unless the applicant has earned a minimum of 45 residence credits with a minimum grade-point average of 2.5. In all other cases credit shall be withheld until these requirements are met.
- e. Within a given field of study no student shall receive advanced credit in subject matter more elementary than that for which he has previously received credit.
- f. No student shall be permitted to repeat any examination for advanced credit.
- g. Permission for advanced credit by examination, for which preparation has been made while in residence during the quarter in which the examination is given, shall not be granted for credits in excess of 20 hours minus the number of hours for which the applicant is currently registered. This restriction shall not apply to an applicant who has prepared for examination while not in residence, provided that suspension of the restriction be approved by an instructor responsible for the course in which the examination is to be taken, the executive officer of the department concerned, and the dean of the college or school concerned.
- h. During any one quarter no student shall be permitted to take examinations for advanced credit in excess of 15 credit hours.
- i. No student shall receive advanced credit by examination for lower-division courses in the student's native language.
- j. A student who wishes to qualify for advanced credit shall apply to the Registrar for a certificate of eligibility. If this certificate is issued, the student shall then present it for signed approval to an instructor responsible for the course in which the examination is to be taken, to the executive officer of the department concerned, and to the dean of the college or school concerned. If such approval is granted the student shall then pay a fee of two dollars per credit to be gained by examination. The department or school shall prepare appropriate tests for advanced credit and transmit them, together with the certificate, to the secretary of the Graduation Committee. The Graduation Committee shall designate one day of each quarter upon which all approved examinations shall be given, and such examinations shall be supervised by this committee or by an agency which it designates. A minimum time of three hours shall be allowed for completion of an examination in any one course. The completed examination papers shall be transmitted to the proper departments for grading. Grade reports shall be sent to the Graduation Committee for recording.

The Division of Adult Education and Extension Services

The Division of Adult Education and Extension Services provides means for persons to earn college credit by attending Saturday or evening classes in Seattle and other cities in the state, or by correspondence study. Such credit is acceptable toward a degree only when all other requirements have been met and after the student has satisfactorily completed one year in residence at the University. No more than 90 extension credits may be counted toward the requirements for the bachelor's degree in any school or college. No more than 10 credits of the total extension credits may be counted in the 45 credits of the senior year. See Senior Residence Rule, page 101. For the purpose of this rule, all credits secured by examination for advanced standing shall be counted as extension credits and shall be included in the above maximum of 90 credits.

For use of such credit for an advanced degree, see page 90. See Senior Year Residence Rule, page 101.

No resident student may take an extension course without the consent of his dean. This permission, on forms furnished for the purpose, shall be filed with the Department of Extension Classes or the Department of Correspondence Study, whichever is appropriate. Registration in extension courses at University level shall be open only to high school graduates and to persons eighteen years of age or over who are not attending high school.

Registration

(See page 8 for registration dates for each quarter.)

All students (except those in Dental, Medical, and Law Schools, and in the Graduate School of Social Work) *must* have a definite appointment each quarter for obtaining registration books and going through Sections (Administration Building). See page 8 for dates, application deadlines, and means of obtaining appointments.

Before the date of his appointment the student should arrange his schedule of studies with the advice and assistance of his faculty adviser. A regular course consists of 15 or 16 credits, exclusive of required Physical Education activity courses and lower-division Military, Naval, and Air Science courses.

Registration is complete when fees are paid and the registration book checked through Sections (Administration Building) and turned in before leaving that office.

No person may attend a University course in which he has not been registered as a student or enrolled as an auditor.

A student must have the consent of his dean if he wishes to register for less than 12 or more than 16 credits, or the number called for in the prescribed curriculum, exclusive of required physical education activity courses and lower-division Military, Naval, and Air Science courses.

With the exception of students in the Schools of Medicine and Dentistry no student shall be registered for, nor receive credit for, more than 20 credits of work exclusive of required physical education activity courses and lower-division Military, Naval, and Air Science courses.

Work taken in noncredit courses or to remove entrance deficiencies shall count as part of the schedule allowed.

No change of registration involving entrance into a new course shall be permitted after the first seven calendar days following the beginning of instruction.

Change of College

A student desiring to transfer from one college to another shall submit the proper forms, procurable from the Registrar's Office and obtain approval from the deans of the two colleges concerned.

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. Test results are made available to advisers who assist students in preparing courses of study and in making vocational plans.

Medical Examinations

Before receiving a notice of admission, new out-of-state students must submit a Medical Questionnaire on a form supplied by the Registrar and completed by a Doctor of Medicine at the time of application for admission. This does not excuse a student from the medical examination required by the University of Washington upon entrance, as described below.

All students, regardless of classification, and previous medical examination elsewhere, entering the University for the first time and all former students who have not attended the University within the last calendar year are required to pass a medical examination as a part of their registration requirements. A definite appointment is made at the time of registration. This appointment takes precedence over all others scheduled for that hour. Students failing to appear for the medical examination at the appointed time will be excluded from classes on notice to the Registrar. For a second appointment, to compensate the University for the additional expense thereby necessitated, a special fee of \$5 must be paid.

As an additional service to and protection of its students, the University rules provide that all students, resident or nonresident, at any time that it is deemed advisable by the Director of the University Health Service, as a condition precedent to entrance to and/or continuance in the University, must pass a medical examination with reference not only to physical but also to mental diseases or serious nervous disorders. As a part of such examination, contributing evidence from the past history of any case shall be pertinent.

Welcome Week

The week in which instruction for the Autumn Quarter begins is designated as Welcome Week. This program is planned jointly by the University Administration and the Student Body. New students will find an opportunity to meet other students and become familiar with the campus. Attendance is optional. Attendance at the convocation on the first Thursday of school is expected.

EXPENSES

FEES FOR RESIDENT STUDENTS¹

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 96 regarding late registration fines.

See page 95 for Summer Quarter Fees

Type of Registration	Tuition Fee	Incidental Fee	Misc. Fees	ASUW FEE ²			TOTAL FEES		
				Aut. Qtr.	Win. Qtr.	Spr. Qtr.	Aut. Qtr.	Win. Qtr.	Spr. Qtr.
Full-Time Students (Undergraduate and Graduate) except Medical, Dental, and Law Schools.....	\$25	\$12.50	*	\$8.50	\$8.50	\$8.50	\$46.00	\$46.00	\$46.00
Medical School.....	100	12.50		8.50	8.50	8.50	121.00	121.00	121.00
Dental School.....	100	12.50	\$3.50 ³	8.50	8.50	8.50	124.50	124.50	124.50
Law School.....	25	12.50	10.00 ⁴	8.50	8.50	8.50	56.00	56.00	56.00
Auditors ⁵	12			†	†	†	12.00	12.00	12.00
Ex-Service Personnel of World War I and World War II (Chapter 46, Laws 1947) ⁶		12.50		8.50	8.50	8.50	21.00	21.00	21.00
Part Time. (Max. 6 credit hrs. excl. of ROTC) ⁷	25	2.50		†	†	†	27.50	27.50	27.50
Persons Registered for Thesis Only ⁸		12.50		†	†	†	12.50	12.50	12.50
Undergraduate Nurses in Approved Hospital ⁹	5			†	†	†	5.00	5.00	5.00
Graduate Nurses in Approved Hospital ⁹	25			†	†	†	25.00	25.00	25.00

¹A *resident* student 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 Administration Building) for change of classification to resident status.

²Athletic admission ticket, \$2.50, optional for ASUW members; good for entire year but must be validated each quarter at time of payment of fees.

³Dental engine rental.

⁴Law library fee.

⁵Special audit fee in the Nursery School for both residents and nonresidents is \$15.

⁶See exemptions paragraph, page 95, to determine eligibility.

⁷Load-hour equivalents of noncredit courses must be counted in the 6 credits.

⁸Individuals in these classifications must be certified by the Graduate School or the School of Nursing.

⁹\$25 uniform deposit for those who register for Air, Military, or Naval Science must be paid at time of payment of registration fees. See *Military Science Requirements*, page 99, to determine applicability. Refund return of all U.S. Air Force or Army issued property.

†Optional; if membership in ASUW is desired, the ASUW fee should be added to the total fee as shown for this type of registration.

NOTE: The following courses require the payment of a fee in addition to tuition: *cadet teaching*, \$1 per credit hour; *botany field trip*, \$5; *Pack Forest fee*, \$10; *ward clinic fee*, \$10; *Nursery School 320 and 330*, \$5 (for lunches).

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

EXPENSES

FEES FOR NONRESIDENT STUDENTS¹

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 96 regarding late registration fines.

See page 95 for Summer Quarter Fees

Type of Registration	Tuition Fee	Incidental Fee	Misc. Fees	ASUW FEE ²			TOTAL FEES		
				Aut. Qtr.	Win. Qtr.	Spr. Qtr.	Aut. Qtr.	Win. Qtr.	Spr. Qtr.
Full-Time Students (Undergraduate and Graduate except Medical, Dental, and Law Schools).....	\$75	\$12.50	*	\$8.50	\$8.50	\$8.50	\$96.00	\$96.00	\$96.00
Medical School.....	165	12.50		8.50	8.50	8.50	186.00	186.00	186.00
Dental School.....	165	12.50	\$3.50 ⁴	8.50	8.50	8.50	189.50	189.50	189.50
Law School.....	75	12.50	10.00 ⁴	8.50	8.50	8.50	106.00	106.00	106.00
Auditors ⁵	12			†	†	†	12.00	12.00	12.00
Ex-Service Personnel of World War I and World War II (Chapter 46, Laws 1947) ⁶	37.50	12.50		8.50	8.50	8.50	58.50	58.50	58.50
Part Time. (Max. 6 credit hrs. excl. of ROTC) ⁷	75	2.50		†	†	†	77.50	77.50	77.50
Persons Registered for Thesis Only ⁸		12.50		†	†	†	12.50	12.50	12.50
Undergraduate Nurses in Approved Hospital ⁹	5			†	†	†	5.00	5.00	5.00
Graduate Nurses in Approved Hospital ⁹	25			†	†	†	25.00	25.00	25.00

¹ A *nonresident* student is one who has not been domiciled in this state or the territory of Alaska for a period of one year immediately prior to registration.

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

- The legal words *domicile* and *residence* are not equivalent terms; domicile requires more than mere residence.
- No one can acquire domicile by residence in the state of Washington when such residence is merely for the purpose of attending the University.
- The domicile of a minor is normally that of his parents or, in the case of their death, that of his legally appointed guardian. The domicile of a minor ordinarily will change with that of his parents.

² Athletic admission ticket, \$2.50, optional for ASUW members; good for entire year but must be validated each quarter at time of payment of fees.

³ Dental engine rental.

⁴ Law library fee.

⁵ Special audit fee in the Nursery School for both residents and nonresidents is \$15.

⁶ See exemptions paragraph, page 95, to determine eligibility.

⁷ Load-hour equivalents of noncredit courses must be counted in the 6 credits.

⁸ Individuals in these classifications must be certified by the Graduate School or the School of Nursing.

⁹ \$25 uniform deposit for those who register for Air, Military, or Naval Science must be paid at time of payment of registration fees. See *Military Science Requirements*, page 99, to determine applicability. Refund return of all U.S. Air Force or Army issued property.

† Optional; if membership in ASUW is desired, the ASUW fee should be added to the total fee as shown for this type of registration.

NOTE: The following courses require the payment of a fee in addition to tuition: *cadet teaching*, \$1 per credit hour; *botany field trip*, \$5; *Pack Forest fee*, \$10; *ward clinic fee*, \$10; *Nursery School* 320 and 330, \$5 (for lunches).

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

Payment of Fees

All fees are payable at the time of registration

Enrollment under G. I. Program. An individual desiring to enroll at the University under Public Law 16 or 346 presents his Veterans Administration certificate of eligibility to the Veterans' Division, Comptroller's Office, at the time of registration in lieu of payment of fees and other charges. (See page 110 relating to establishment of G. I. eligibility.) A student so enrolled is subject to payment of any charges not covered under the G. I. program.

All fees are payable by the student at time of registration if he is unable to present his certificate of eligibility. Payment will be refunded when full eligibility is established as of the start of the quarter.

Exemptions

Graduate members of the University staff are exempt from the tuition and incidental fees; ASUW fee is optional.

All honorably discharged service men or women who served in the military or naval services of the United States during World War I and those who served in World War II at any time after the sixth day of December, 1941, and prior to the first day of January, 1947, and who are no longer entitled to vocational rehabilitation under Public Law 16 or to education and training under Public Law 346, and who are classified as residents are exempt from the tuition fee. Under this exemption a reduction of one-half of the nonresident tuition fee is granted nonresident students. This exemption also applies to U.S. citizens who were in the military or naval services of governments associated with the United States during said wars. (Not granted to Summer Quarter students.)

Refund of Fees (Autumn, Winter, and Spring Quarters)

All fees (except those indicated as not subject to refund) will be refunded in full if complete withdrawal is made during the first three calendar days; one-half of said fees will be refunded if withdrawal is made during the first thirty calendar days, except for Air or Army ROTC uniform deposit, the unexpended portion of which will be refunded upon approval of the Military or Air Science Departments. Students registered for chemistry or pharmacy laboratory courses must secure a check-out clearance from the stockroom custodian. This clearance must be presented at the Registrar's office when withdrawal is made, as no withdrawal will be honored until this requirement has been met. At least ten days must elapse between payment and refund of fees. Unless specific instructions are received by the Comptroller's office regarding the fees refunded, all properly authorized refunds will be made to the student involved in the registration.

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

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

Summer Quarter Fees

Total fees for regular enrollment in the Summer Quarter, either full or part time, resident or nonresident, for enrollment as a transient student, a special student, or an auditor in the summer are:

Full quarter	\$52.50*
First term	36.50*
Second term	36.50*
Addition of second term.....	16.00
(After first term registration is completed)	

Law students have an additional Library Fee of \$10.

There are special fees which may be found by consulting the Summer Quarter Bulletin for:

- (a) Nurses in residence at approved hospitals.
- (b) For children attending the Nursery School.

*Includes ASUW fee of \$2.50.

- (c) Persons employed in social agencies certified by the Graduate School of Social Work.
- (d) Persons registered for thesis only.
- (e) Persons registered for individual and group instruction in applied music.
- (f) Various summer conferences and institutes.

Miscellaneous Charges Applicable Only in Special Cases

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

Late Registration Fine. Unless delay in registering is occasioned by officials of the University, *undergraduate students and graduate students in the Law School* registering late will be charged a fine of \$2 on the first day of instruction and a further cumulative fee of \$1 for each day thereafter up to a total of \$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 \$5. *Graduate students not in the Law School* may register without penalty during the first week of the quarter. Students who fail to keep appointments for physical education activity class assignments will be charged a late registration fine of \$2.

Change of Registration Fee. A fee of \$2 is charged for each change of registration or number of changes which are made simultaneously, except that no charge is made when the change is made on the initiative of the University or for dropping a course.

Athletic Admissions Fee. A ticket which admits to all athletic events for the entire year is optional to ASUW members only. The cost is \$2.50 (\$2 plus 50 cents federal and city tax).

Breakage Tickets Deposit. In certain laboratory courses a breakage ticket is required to pay for laboratory supplies and breakage of equipment. Tickets may be purchased at the Cashier's office for \$3.

Microscope Rental Fee. A microscope rental fee of \$7 per quarter must be paid by those students in the Health Sciences who rent microscopes.

Special Examination Fee. A fee of \$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 \$2 per credit hour is charged. (See page 90.)

A fee of \$2.50, payable to the Division of Adult Education and Extension Services, is charged for removal of incompletes *in absentia*.

Practice Rooms. Piano practice room:* one hour a day each quarter, \$3; two hours a day, \$5; three hours a day, \$6. Organ practice:* one hour a day each quarter, \$6; two hours a day, \$10; three hours a day, \$12.

Pavilion Locker Fee (Men). A fee of \$1.50 per quarter during the regular academic year, and 75 cents per term during the Summer Quarter, is charged faculty members and students who are registered for physical education. Locker tickets may be secured at the office of the Associated Students. Faculty members and students who are not registered for physical education may also secure lockers upon payment of the same fee.

General Locker Fee. Lockers for wraps and books in the various classroom buildings may be obtained at a rental of 75 cents per quarter from the Buildings and Grounds Department.

Grade Sheet Fee. One grade sheet is furnished each quarter without charge; a fee of 25 cents is charged for each additional sheet.

Graduation Fee. Each graduate receiving a baccalaureate degree or an M.D. or D.D.S. degree is required to pay a graduation fee of \$10. Each graduate receiving an advanced degree is required to pay a graduation fee of \$5. The fee for a three-year secondary certificate or for an elementary certificate is \$2.50. The fee for other professional certificates is \$1. The three-year secondary certificate fee does not include the legal registration fee of \$1 which must be paid to the county school superintendent who first registers a teacher's certificate.

Printing and Thesis Binding Fees. Each recipient of a higher degree pays a fee of \$2 for the binding of one copy of his thesis. In addition, each recipient of a doctorate is assessed a fee of \$25 for the publishing fund.

* Available only to students registered in the School of Music.

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

Supplementary Transcript Fee. A fee of 25 cents is charged for each supplementary transcript issued.

Medical Examination and X-Ray Fees. Students who fail to keep their medical or X-ray appointments must pay a fee of \$5 for a make-up medical examination and \$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. The fee is \$5.

Bureau of Teacher Service and Placement. Candidates seeking teaching positions pay an initial registration fee of \$5. A replacement or maintenance charge of \$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 department examiner, the executive officer of the department, the dean of the college or school concerned, and the Registrar. The fee for such certification is \$5. Students seeking such certification must secure the proper forms in the Registrar's office.

Military Uniforms. See page 181 for details.

Nursery School Fee. The fee for children in the Nursery School is \$45 per child per quarter for the morning program, 9 a.m. to 11:30 a.m.; \$60 per child per quarter for the complete program (including hot dinner), 9 a.m. to 12:30 p.m.

Laboratory Case Rental Fee. Each student in the School of Dentistry is required to pay a laboratory case rental fee of \$2.50 per quarter, payable when he purchases his supplies from the Dental Dispensary at the start of each quarter.

Graduate Survey Examination. Each student entering the Graduate School is required to take a Graduate Survey Examination. The fee for this examination is \$3 and must be paid at time of payment of registration fees the quarter the student enters Graduate School.

Living Costs

Costs for the college year consist of tuition, books, board, room, carfare, and the miscellaneous items such as entertainment, clothing, cleaning, etc. Board and room expense varies according to the type of accommodations desired. The University provides housing facilities for single men and single women on campus (see section on Housing, page 109). Meal service is available on campus in the Student Union Building and in the University Commons. Meals are available both *a la carte* and on a meal ticket basis in the Commons, and *a la carte* in the cafeteria of the Student Union Building. Breakfast, morning coffee, lunch, afternoon snacks, and dinner are served at reasonable prices in both places. Meal and scrip tickets for the Commons may be purchased from the University cashier.

Groups wishing to hold luncheon or dinner meetings may be served by making reservations through the catering departments of the University Commons and the Memorial Union Building.

Estimate of First-Year Expenses

It is impossible to generalize with any degree of accuracy on the total cost of a year's attendance at the University. There are, however, certain relatively fixed expenses which apply to all entering freshmen. In considering the tabulation of these please bear in mind that the tuition and fees are subject to change. Also remember that board and room vary somewhat with the type of accommodation desired by the student.

Miscellaneous Expense

Any realistic consideration of first-year costs must take into account probable expenditures for laundry, dry cleaning, clothing, personal items, or entertainment and social activities. College students dress informally for classes, much as they do in high school. A student who takes advantage of the many free social, cultural, and recreational opportunities provided on the campus will spend lesser amounts for these activities, while another who depends largely on commercial entertainment will need more. The student should examine his spending habits rather carefully and determine as accurately as possible what he will need for these miscellaneous expenditures.

**ESTIMATE OF MINIMUM BASIC EXPENSES
OF A FULL-TIME¹ RESIDENT² STUDENT FOR ONE SCHOOL YEAR**
(All figures are subject to change)

Minimum Expenses (Subject to Change)	TYPE OF LIVING ACCOMMODATION						
	Women's Residence Halls	Veterans' Dorms.	Coop. Houses (Men and Women)	Living at Home	Boarding House	In Fraternity or Sorority	
						Living at Home	Living in House
Tuition ¹⁺²	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00
Incidental Fee ³	37.50	37.50	37.50	37.50	37.50	37.50	37.50
Special Fees ⁴ and Deposits ⁵							
ASUW Fee ¹⁺²	25.50	25.50	25.50	25.50	25.50	25.50	25.50
Athletic Admission ⁶ Ticket (optional)...	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Board and Room....	456.00 ⁷	480.00 ⁸	375.00 ⁹	¹⁰	475.00	235.00 ¹¹	580.00 ¹²
Books ¹³							
TOTAL MINIMUM FIRST-YEAR EXPENSES.....	\$596.50	\$620.50	\$515.50	\$140.50	\$615.50	\$375.50	\$720.50

¹ Students registered for 7 credit hours or more are considered *full-time* students. *Part-time* students are those registered for 6 credit hours or less (exclusive of ROTC, but including load hour equivalents of noncredit courses). Tuition for part-time attendance is the same as for full-time, but the incidental fee is \$2.50 a quarter or \$7.50 for the school year. Membership in ASUW is optional for part-time students.

² Students graduated from high schools not located in the state of Washington or the territory of Alaska will be classified as *nonresident* and will be required to pay an additional quarterly fee of \$50 as nonresidents. Thus the yearly tuition for nonresidents totals \$225. Students who believe that they have been domiciled in the state or in Alaska for a period of one year prior to registration, may file petitions for resident status with Nonresident Office, 203 Administration Building. For purposes of classification, the domicile of a minor is the domicile of his parents.

³ *Special fees* which most frequently apply to freshmen are: *Private music lessons*—\$25.00 or \$37.50 per quarter, depending on whether the student is registered for one-half hour or one full hour of instruction each week. *Group voice or instrumental lessons*—\$5 per quarter. *Music Practice Rooms*—\$5 per quarter for one hour each day, with reductions as the hours per day of use increase. *Locker fee*—\$1.50 per quarter for students taking physical education activities.

⁴ *Deposits* required of freshmen include: *Uniform Deposit*—\$25 for men registered in Army or Air ROTC. (Refunded when uniform is returned.) *Breakage Ticket* for laboratory courses—\$3 per quarter. (Unused part is refunded.)

⁵ Membership in the *Associated Students* of University of Washington is optional for part-time students only.

⁶ Although the *Athletic Admission Ticket* is optional for all students, its cost is so low that few students pass up this admission to all Coast Conference sports events.

⁷ This figure includes room and meals which are served in the halls and also the social fee of approximately \$2 per quarter.

⁸ This includes the \$35 fee per quarter for a double room and meals in the University dining hall nearby.

⁹ A student who joins the Cooperative is required to buy a share costing \$25, of which \$10 is refunded when he leaves the house.

¹⁰ Many students who live at home bring their lunches and thus reduce their expenses. The cost of lunch depends on the needs of the individual student.

¹¹ This includes lunches and one dinner each week as well as social fees and dues. The initial cost of joining sororities and fraternities varies so greatly that it is impractical to give an estimate. Students may obtain this information during the rushing period.

¹² This includes room, board, *social fees*, and dues. See also paragraph 11 above. (For details on *Housing*, see page 109.)

¹³ The cost of books will vary with the program of study selected and whether or not secondhand books are used. Estimates of the cost of books and supplies for the freshman year would range from a minimum of \$50 up to \$100 for a student registered in a technical field such as engineering.

SCHOLASTIC REGULATIONS

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

I. REQUIREMENTS FOR GRADUATION**MILITARY TRAINING REQUIREMENTS**

1. Subject to the exceptions herein, and beginning with Summer Quarter 1948, every male student entering the University without advanced standing shall be required to complete six quarters of military training.

2. Subject to the exceptions herein, and beginning with Summer Quarter 1949, every male student entering the University with advanced standing shall be held for the military training requirement, provided, however that such a student shall be subject only to a period of military training equivalent to the number of quarters he needs to achieve junior standing by a normal schedule. More specific regulations governing male students entering with advanced standing may be established by the Board of Deans.

3. No student in resident attendance at the University prior to Summer Quarter 1948 shall be held for any part of the military training requirement.

4. Exemption from the military training requirement shall be granted to the following:

- a. those who are twenty-three years of age or over at the time of original entry into the University
- b. those who enter as juniors or seniors
- c. special students
- d. those registered for 6 credits or less
- e. those who are not citizens of the United States
- f. those regularly enrolled in the University Naval Science course
- g. those who are active members of the Armed Forces or Coast Guard of the United States, or commissioned officers of the National Guard, or reserve officers of the Armed Forces or Coast Guard of the United States
- h. those who are active enlisted members of the National Guard or of the Organized Reserve of the Armed Forces or Coast Guard of the United States, provided, however, that exemption shall be granted only to those holding such status prior to their original entry into the University. For those entering in the summer, fall, winter, or spring quarters such membership status shall have existed prior to June 1, September 1, December 1, or March 1, respectively, of the current school year. A student who seeks his initial exemption under the terms of this paragraph shall present to the Registrar, prior to his first registration, a statement signed by his commanding officer which certifies that he is an active member in good standing of his reserve or National Guard unit. Further exemption shall be contingent upon the filing of a similar certificate with the Registrar prior to, but within two weeks of, the opening day of each quarter during which exemption is sought.

Should a student exempted under the terms of this paragraph be dropped from active membership in his reserve or National Guard unit after less than one year of service he shall be subject to the entire University military training requirement. Should he be dropped from active membership in his reserve or National Guard unit after one year or more of service he shall be subject to not more than three quarters of the University military training requirement. In such a case the minimum requirement shall be fixed by the dean of the college concerned in consultation with the appropriate ROTC Commander.

- i. those who claim credit for military training taken elsewhere. Such students shall make their claims upon registration; all credits allowed shall be recorded by the Military Registration Secretary, and the evidence shall be filed in the student's permanent record file in the Military Registration Office
- j. those with previous military service. Exemption from one year of military training shall be granted to honorably discharged men who have served not less than six months, but who have served less than one year in the Armed Forces or Coast Guard. Complete exemption from military training shall be granted (1) to

- honorably discharged men who have served one year or more in the Armed Forces or Coast Guard and (2) to those who hold a Certificate of Disability Discharge. The Registrar shall process exemptions specified in this paragraph.
- k. those who seek exemption on grounds other than those specified above, and whose petitions for exemption are first processed by the Office of Student Affairs, and then approved by the dean of the college concerned after consultation with the appropriate ROTC Commander
 - l. those who, because of physical condition, are exempted by the University Health Officer
5. Male students other than those listed under paragraphs (a) to (g), inclusive, of rule 4 shall register for the proper course and shall attend classes until their requests for exemption have been granted.
6. The military training requirement shall normally be satisfied during the first six quarters of residence. Deferment of the requirement shall become effective only upon recommendation by the Office of Student Affairs and upon personal authorization by the dean of the college concerned. Deferment of the military training requirement shall not be construed as exemption.
7. Students exempted under paragraphs (e), (h), and (k) of rule 4 shall be required to earn equivalent credit in other University courses. This shall be done in accordance with the rules governing excess hours.

Physical Education Requirements for Men

1. Six quarters of physical education activity* courses are required of all male students except those who are twenty-three years of age or over at the time of original entrance into a college or university, those entering with junior or senior standing, those registered for 6 credits or less, or special students. (No student may register for more than one Physical Education activity course in a single quarter; provided, however, that during the Summer Quarter a student may register for not more than one such course in each of the two halves of the Summer Quarter.)
 - a. This requirement must be completed during the first six quarters of University residence.
 - b. Freshmen who pass the medical examination shall register for the Fall Quarter in Basic Physical Education (Physical Education 104) and Winter or Spring Quarters in Swimming (P.E. 119). For the remaining four quarters they may elect any activity with the provision that they shall not receive credit for more than two quarters in any one activity. Freshman courses are listed in the 100-199 series and sophomore courses in the 200-299 series. Freshman or varsity sports may be substituted for these courses.
 - c. Naval Science Physical Education requirements are the same as the University's requirements except that naval science students are required to pass the First Class Swimmer's Test once each year.
2. A 2-credit course in personal health (Physical Education 175) is required of all male students who have not satisfied this requirement in an accredited university or college.
 - a. *All men* for whom the Health Education course is prescribed shall be required to complete it within the first three quarters of residence.
 - b. A student may be exempted from the health education course by passing a health knowledge test given the first week of each quarter.

* Special programs adapted to the individual's need will be devised by the Executive Officer of the Physical Education Department for those students who are reported by the University Health Officer as unfitted to join regular classes. A student may not be exempted from this requirement unless the Executive Officer of the Physical Education Department and the University Health Officer join in recommending such exemption to the dean of the college in which the student is registered. The dean of the college will then recommend to the Graduation Committee that the exemption be allowed.

Physical Education Requirements for Women

1. Six quarters of physical education activity* courses are required of all women students except those who are twenty-three years of age or over at the time of original entrance into a college or university, those entering with junior or senior standing, those registered for 6 credits or less, or special students. This requirement must be completed during the first six quarters of University residence. (No student may register for more than one Physical Education activity course in a single quarter; provided, however, that during the Summer Quarter a student may register for not more than one such course in each of the two halves of the Summer Quarter.)

2. A 2-credit course in health education (Physical Education 110) is required of all entering women but shall be waived for any woman student who entered the University before July, 1944, and who had not fulfilled this requirement before that date. It shall also be waived for all women transfer students beyond freshman standing. For women transfer students with less than a normal year's credit (45 academic quarter credits, exclusive of Physical Education activity courses), the question of imposing this requirement shall be referred to the Department of Physical Education. *All* women for whom the health education course is prescribed shall be required to complete it within the first three quarters of residence.

Senior Year Residence

Senior standing is attained when 135 credits and the required credits in Military, Naval, or Air Science and in physical education have been earned. Of the work of the senior year (45 credits) at least 35 credits shall be earned in a minimum of three quarters in residence. The remaining 10 credits shall be earned either in residence or through the University of Washington Division of Adult Education and Extension Services. Nothing in this rule shall be construed as requiring more than the 42 credits which constitute the fourth year of Law School.

Financial Obligations

In determining the fitness of a candidate for a degree, his attitude toward his financial obligations shall be taken into consideration.

The Comptroller and Registrar are instructed to attach credits and withhold delivery of a student's diploma pending final payment of financial obligations to the University. Participation in Commencement exercises is in no way affected by this rule and certification of graduation will be furnished where the need exists.

Thesis

If a thesis is required for the degree sought, the candidate must deposit two type-written copies thereof in the Library at least three weeks before the end of the quarter in which he expects to take the degree. The thesis must meet the approval of the librarian as to form. Printed "Instructions for the Preparation of Theses" are available at the thesis desk in the Library.

The College of Engineering has the further requirement that the candidate file a third copy with the head of his department.

Grade Points and Credits

To be eligible for graduation from the University with the bachelor's degree a student shall satisfy all other specific requirements and shall offer a minimum of 180 academic credits. Unless he is excused from Physical Education, a candidate for graduation shall also offer in addition the required academic credits in Physical Education activity courses. No more than the required number of such credits may be counted for graduation. Unless he is excused from Military training, a male candidate for graduation shall also offer in addition the required lower-division academic credits in this field. No more than the required number of such credits may be counted for graduation. If excused from Military training a candidate for graduation may be required to earn equivalent extra credit in other University courses.

To be eligible for graduation a student shall also have earned at least a 2.0 grade average in the subjects required as academic credit for graduation. Grades earned at other institutions may not be used to raise the grade-point average at the University of Washington. Any college may make additional requirements for graduation.

A candidate for the bachelor's degree whose grade average is below 2.0 and who has more than the required number of academic credits on his permanent record may attain the minimum required grade average by presenting for graduation the required minimum of academic credits in which he received his highest grades, including the required academic credit in physical education activity and Military, Naval, or Air Science. In such a case the procedure shall be as follows: the student, with the advice of his major department and college dean, shall notify the Committee on Graduation of the courses he intends to present for graduation. He shall accomplish this by filing with the Registrar a written statement, signed by the major department and the college dean, listing the registered hours he wishes not counted toward his degree. If the courses to be counted produce a 2.0 average or above and meet all other college and University requirements, the student shall be eligible for graduation.

In the Colleges of Arts and Sciences, Education, Pharmacy, and Business Administration (except for students in the Supply Corps) no more than 18 quarter credits in advanced Army, Navy, or Air Force ROTC subjects may be applied toward graduation.

In the Colleges of Engineering and Forestry no more than 9 quarter credits in advanced Army, Navy, or Air Force ROTC 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 105.

For rule regarding repetition of courses in which grades of "D" or "E" were obtained, see "Repeating of Course," page 104.

Upper-Division Credits

A minimum of 60 credits in upper-division courses, exclusive of those earned in Army, Navy, or Air Force ROTC 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 87.

Details concerning issuance of teaching certificates may be obtained from the College of Education. See page 160.

Degrees—Additional Regulations

1. *Degrees—Graduation Requirements.* A student may choose to graduate under the requirements of the *Catalogue* in force at the date of his entry into the college in which he is to graduate, provided that not more than ten years have elapsed since that date. As an alternative he may choose to fulfill the graduation requirements of the *Catalogue* current at the time he is to be graduated. All responsibility for fulfilling graduation requirements shall rest with the student concerned.

The ten-year limitation prescribed in the first sentence of this rule shall apply to all students graduating after December 31, 1950.

2. *Degrees—Two at Same Time.* A bachelor's degree and a master's degree, or two bachelor's degrees with different majors, 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 reach a minimum of 45 credits in excess of the number normally required for the bachelor's degree.

3. *A Second Bachelor's Degree.* A second bachelor's degree may be granted, but there shall be required for this degree a minimum of three additional quarters in residence. The minimum number of additional credits required for the second bachelor's degree shall be 45, and the minimum number of additional grade points shall be 90. Not more than 10 University of Washington extension credits and no credits gained by advanced credit examinations shall constitute any part of the added program. The program for the second bachelor's degree shall meet the requirements of the *Catalogue* current at the time of application for the second degree.

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

5. *Commencement Exercises.* Formal Commencement exercises shall be held only at the close of the spring quarter, but diplomas shall be issued at the end of each quarter to such candidates as have completed requirements at that time.

II. SCHOLARSHIP REGULATIONS

Grading System

1. The following is the system of grades (except for the School of Medicine) and their value in grade points:

Grade	Grade Points	Grade	Grade Points
A—Honor	4	D—Poor (low pass)	1
B—Good	3	E—Failed	0
C—Medium	2		

Passing grades for advanced degrees are "A," "B," and "C," with a "B" average required.

The grade of "E" shall be final. A student receiving the grade of "E" in a course may obtain credit for it only by re-registering for the course and repeating it.

2. *Other symbols* shown in the schedule below are used by instructors when appropriate; they are not used in computing grade-point averages:

I—Incomplete. This grade is given only in case the student has been in attendance and has done satisfactory work to a time within two weeks of the end of the quarter. Except in the case of one-term summer quarter courses, the dean of the college may extend the two weeks' limit to three weeks.

A student must convert an Incomplete into a passing grade within his next quarter of residence. Otherwise, he shall re-register for the course. This rule may be waived upon recommendation of the dean of the college concerned under circumstances in which it interferes with efficient administration of the grading system.

N—Satisfactory without grade, used in hyphenated courses in which the grade is dependent upon the work of a final quarter; it indicates that the work has been completed to the date at which the N is given, but carries with it no credit or grade until the entire course is completed.

S—Passing grade for courses numbered 500 or above; it may be used as a final grade.

W—Withdrawal; this grade must be given if the withdrawal is official and within the first thirty calendar days of the quarter; after the first thirty calendar days this grade will be given if the student's work is satisfactory, otherwise an "E" must be given.

UW—Unofficial withdrawal; this grade is given if the student's standing has been "C" or above; if his standing has been less than "C" an "E" must be given.

3. The following is the system of grades used by the School of Medicine:

P—Satisfactory, passed.

F—Unsatisfactory, failure.

N—Continued course, grade to be given later at end of entire course.

I—Incomplete due to illness or other legitimate factor.

Change of Grade

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

Repeating of Course

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

2. If a transfer student repeats a course taken at another college, the University of Washington credit shall be honored and the transfer credit canceled.

3. If a course has been repeated with grades of C or better in two or more colleges, the University shall give precedence to credit earned at an "A" or "B" college. An "A" college is one with an organized graduate school and whose transcripts are given full value through five or more years of college study. Graduate work accepted for advanced degrees subject only to limitations on transfer credits allowed on advanced degrees, and to departmental standards. A "B" college is one whose transcripts of record are given full value through four years of college study. Bachelor's degrees accepted for admission to graduate study. If two or more of the colleges at which the course has been repeated were "A" or "B" colleges, the University shall honor the credit of the "A" or "B" college last attended by the student. *A grade of "D" or "E" received at the University may be superseded only by a grade received at an "A" college.*

Final Examinations

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

2. An examination schedule of two- or three-hour examination periods shall be provided by the Schedule and Registration Committee. This schedule shall not replace any special schedule such as that of the Law School.

3. The regular class exercises shall end at 4 p.m. on the fourth, fifth, or sixth day before the end of the quarter. The Schedule and Registration Committee shall determine whether three, four, or five days are necessary for scheduling the final examinations and shall publish the examination schedule in or before the seventh week of each quarter.

4. The scheduled examination period shall be the last meeting of the class. If, during the regular class periods, an instructor gives a test or tests which he wishes to credit as the final examination, he shall meet his class during the regularly scheduled examination time, shall take the roll, and shall hold the class for the full examination period.

5. A student absent from a scheduled final examination, either by permission of his dean or through sickness or other unavoidable cause, shall be given a grade of Incomplete if his work in that course has been satisfactory until the time of his absence. He may remove this Incomplete in the manner provided for removing Incomplete grades. In all other cases of absence from the scheduled final examination a student shall be given a grade of "E," except that if his standing in the course has been "C" or above until he ceased to attend class, he may be given the grade of "UW."

6. Special early examinations, given to individual students or groups of students as substitutes for final examinations, are prohibited. *There are no early examinations for graduating seniors.*

7. Each instructor shall be responsible for the supervision of his tests and examinations in accordance with the rules of good conduct and fairness.

Cheating

1. Cheating consists of conduct designed to secure favorable grades for one or more students in any University course given for credit through violation of established examination or other accrediting procedures, regardless of whether any paper or other exercise has actually been submitted by, or on behalf of, the intended beneficiary.

2. A student who is guilty of such conduct, either as intended beneficiary or otherwise, may be formally cited before the University Committee on Student Discipline for such action as the Committee may direct. So far as academic grades are concerned, however, the instructor in charge of the course concerned remains the sole judge of the consequences.

3. To cite a student for cheating, the instructor or fellow student shall report the student to the Registrar, who shall inform the Office of Student Affairs, the dean of the college concerned, and the chairman of the Student Discipline Committee of the facts of the case. The offender shall automatically be placed on disciplinary probation pending action of the Student Discipline Committee.

Tutoring

Students seeking the services of a tutor may obtain assistance in the Student Employment Office, in the Office of Student Affairs, or in the office of the proper major department.

1. No person shall tutor for compensation in a course with which he has any connection as part of the teaching staff.

2. The tutor shall secure the approval of the head of the department for all tutoring for compensation, on a form provided for the purpose, giving the names of the student or students and the tutor. In cases where the tutor is in the rank of instructor or higher, the approval of the dean must also be secured. 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.

General Scholarship Rules

1. Passing grades for advanced degrees shall be "A," "B," and "C," with a "B" (3.0) average required.

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

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

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

4. When a student has been placed on *probation* because of low scholarship, the dean of the college concerned shall have complete authority over his academic and activity program. The dean of the college concerned shall decide when a student on

probation because of continued low scholarship shall be dropped from the college, or when, because of an improvement in his work, he shall be removed from probation.

5. *Reinstatement* of a student disqualified under the provisions of paragraph 4 above shall be allowed only by the dean of the college concerned. In general, a student who has been required to withdraw is not permitted to re-enter the same college until one or more quarters have elapsed, during which time he shall have successfully engaged in work or study justifying the belief that he is now prepared to make a satisfactory showing.

6. Colleges and schools may require higher standards of scholarship than those above stated. See announcement of the college or school concerned, pages 114-217.

7. *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.

Honor Awards

1. The President's Medal shall be presented at Commencement to the member of the graduating class who has the highest scholastic standing for his entire course.

2. The following awards shall be presented by the President in the name of the faculty at the annual President's Assembly in the Autumn Quarter:

- (a) The Junior Medal, which shall be awarded to the senior having the highest scholastic standing for the first three years of his course.
- (b) The Sophomore Medal, which shall be awarded to the junior having the highest scholastic standing for the first two years of his course.
- (c) Certificates of High Scholarship, which shall be awarded to seniors, juniors, and sophomores for excellence in scholarship in their junior, sophomore, and freshman years respectively.

III. DISMISSAL, WITHDRAWAL, AND ABSENCE REGULATIONS

Honorable Dismissal

To be entitled to honorable dismissal, a student must have satisfied all financial obligations to the University, and must have a satisfactory record of conduct. Application for honorable dismissal shall be made at the Registrar's office.

Withdrawal

Withdrawal from the University is voluntary severance by a student of his connection with the University. It must be approved by the Office of Student Affairs.

Withdrawal from a course is voluntary severance by a student of his connection with the course. The withdrawal is *official* if it is approved by the dean of the college and by the instructor of the course concerned, and if the Registrar's office is properly informed by the student who must file a Change of Registration Form at Sections (Administration Building); otherwise it is *unofficial*. A student may withdraw from a course at any time up to the end of a quarter provided that he does so before the scheduled final examination in the course. See page 103 for the grades which may be given.

NOTE: A student is not permitted to have a withdrawal from required courses in freshman English, Military, Naval, or Air Science, physical education activities, or Physical Education 110.

Leaves of Absence

The dean may grant permission to be absent from classes to a student who foresees that such absence will be necessary, except that the Office of Student Affairs shall issue such permits to students absent because of recognized student activities.

A student absent because of sickness or for personal reasons, who has not made previous arrangements for excuse, shall explain the cause of his absence to his instructor. His instructor shall decide whether this verbal explanation constitutes a legitimate excuse.

IV. STUDENT ACTIVITIES

Student activities shall be defined, interpreted, and governed by the Committee on Student Welfare.

General Eligibility Rules

In order to participate in any student activity or to seek election to any student office classified as a major activity, a student shall comply with the rules and regulations of the committee governing the activity. For students who wish to participate in intercollegiate athletics, this shall be the University Athletic Committee; for students who wish to participate in student affairs, this shall be the Committee on Student Welfare. (Student organizations come under the supervision of the Committee on Student Organizations.)

Students are responsible for acting in accordance with the specific rules of these committees, information regarding which may be secured from either the Office of Student Affairs or the Office of ASUW Activities.

To be eligible to participate in any major activity a student shall:

- (a) have earned a grade-point average of 2.0 in his last quarter in college attendance and over his entire college record;
- (b) be registered as a full-time student, i.e., be enrolled for a minimum of 7 credits;
- (c) have complied with any additional requirements of the particular activity;
- (d) not have been declared ineligible by the dean of his college on the grounds that participation in the activity is detrimental to his scholarship.

To be eligible for any minor activity, a student shall not have been declared ineligible by the dean of his college on the grounds that participation in the activity is detrimental to his scholarship.

Meetings, Assemblies, and Speakers

1. The buildings and campus of the University shall be primarily devoted to education; they may also be used for cultural and recreational purposes incidental to the work of the University.

2. The University buildings and grounds shall not be available for commercial or other outside uses except that assembly halls may be used for graduation exercises and other special assemblages of the public schools by arrangement with the President's office.

3. Meetings of student organizations upon the campus may be permitted for educational, cultural, and recreational purposes connected with the work of the colleges or departments of the University.

4. All student groups desiring to make use of the facilities of the campus for meeting places shall apply to the Office of Student Affairs in accordance with the *Code for Student Organizations*. Application shall be made at the beginning of each school year except that such student groups organized during the school year shall make application before arranging for any meeting on the campus.

5. Arrangements and programs for meetings held under the sponsorship of a college or department of the University and open to the public shall first be approved by the President of the University. Departments or groups of departments desiring to have speakers for their students only, shall apply to the President's office. If the application is granted, any necessary arrangements for rooms should be made through the Registrar's office. Special lectures should be held in the afternoon in order not to disrupt regular morning classes.

6. Only all-University functions for which classes are generally dismissed may be designated as assemblies.

Student Publications

1. Only those publications approved by a committee appointed by the President of the University may use the good will of the University in soliciting advertising.
2. Permission to issue student publications shall be obtained from the President's office.
3. The editor of any student publication shall be held responsible for all matter which appears in that publication. A correspondent of any other publication shall be held similarly responsible for all items contributed by him to that publication.
4. No edition of *The University of Washington Daily* by special editors shall be permitted except by express permission of the Publications Committee of the Board of Control.

STUDENT WELFARE

The Office of High School Student Relations and Orientation

The Office of High School Student Relations and Orientation has a twofold purpose. The first is to offer detailed information to prospective college students who are in high school; the second is to assist the colleges, schools, and departments of the University in developing a coordinated orientation program for students already on the campus. Precollege guidance is offered through detailed bulletins, lectures, interviews, audio-visual materials, and personal, independent contacts by interested individuals.

The Office of Student Affairs

The Office of Student Affairs is concerned with the general welfare of the students of the University and welcomes correspondence and conferences with both parents and students. Students are urged to avail themselves of the opportunity for consultation in regard to social, personal, and individual problems. This office, which works closely with the advisory system of the colleges and schools of the University, is in a position not only to counsel students personally, but to direct them to faculty advisers, the facilities of the Counseling Center, and other sources of information and assistance. Obstacles to successful work in college may often be removed through their friendly advice and the available professional services. The office will be glad to discuss with students any problems concerning the military services.

Participation in social and special-interest groups is an educational experience available to every college student. Faculty members and the Student Affairs staff provide counsel and assistance to a wide variety of organized groups. Students are encouraged to call on Student Affairs counselors for information and assistance in the area of out-of-class group experience.

A large number of religious activity groups are maintained off-campus by the various religious denominations and foundations. These groups share in the total student activity program of the University. Students may contact the church of their choice or the Office of Student Affairs for further information.

Counseling Center

The Counseling Center provides students with assistance in their immediate school problems, vocational counsel, and counsel in regard to personal problems. The Center is interested in seeing students who wish to assure themselves they have selected an appropriate vocational goal, who are uncertain about a college major, who feel they are unable to function at their optimum level, or who feel uncomfortable with themselves and wish help in some personal or social problem. The method of providing this assistance involves interviews with members of the staff and psychological tests when indicated. The center is not a substitute but a supplement to the faculty adviser. There is a five-dollar fee to nonveteran students for testing services.

The Bureau of Testing

The purpose of the Bureau of Testing is to devise tests for predicting academic success and also to devise measures for determining the extent of achievement in various specific and general areas. The Bureau of Testing is responsible for the tests given at the time of admission as well as for special tests administered to premedical, pre dental, engineering, and other groups. In addition to this, the Bureau of Testing provides testing services to the Counseling Center for individual students.

Placement

Part-time and full-time off-campus work for both men and women may be obtained through the University Placement Office, Clark Hall. Part-time jobs include office work, clerking, restaurant, manual labor, entertainment, odd jobs, board and room, and work allied with a student's field of study. Part-time jobs may occur mornings, afternoons, evenings, or from midnight to morning.

Personal application for work may be made after residence is established in Seattle. No application by mail can be considered since there is no seniority in filling jobs and openings must be filled promptly when they occur. This office also fills full-time jobs for students after graduation from college. For further information write University Placement Office for Students and Graduates, University of Washington.

For campus positions apply directly to Office of Nonacademic Personnel, 206-D Administration Building.

Teacher placement is made through the Bureau of Teacher's Service and Placement, Education Hall.

Housing

The Women's Residence Halls provide comfortable living in beautiful Tudor-Gothic buildings. Each of the four halls has its own student government which sets the pattern of living and sponsors a program of cultural, social, and recreational events. Further information may be obtained by writing to the Director, Women's Residence Halls, University of Washington, Seattle 5, Washington.

Veterans are given priority in assignment to rooms in the temporary dormitories on the campus. Meals are obtained separately at the nearby Commons or in the Memorial Union Building. Requests for further information should be sent to the Office of Student Residences, 23 Administration Building, University of Washington, Seattle 5.

Married veterans may apply to the Office of Student Residences at the above address for accommodations in Union Bay Village, the University's family housing project. Since many names are on the waiting lists, new students should not rely on this possibility for immediate housing.

Rooms, room and board, housekeeping rooms, and a few apartments are listed at the Office of Student Residences, 23 Administration Building. These listings must be consulted in person. Women students under twenty-one years of age not living in their own homes, with immediate relatives, in nurses' residences, or in homes where they are earning their board and room, are required to live in some type of organized group house which is approved by the University, i.e., residence hall, sorority, cooperative, or religious. Exceptions to the above rule may be granted by the Office of Student Affairs upon written approval from the parents.

A limited inspection service of off-campus housing is provided jointly by the University Health Service and the Office of Student Affairs.

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 kitchens. 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 in-

firmary. They are sent to a general hospital of their own choice and at their own expense. Ambulance service when necessary is at the expense of the student.

The dispensary is available to all students during the span of class hours. 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 two dollars per day is made. Students confined in the infirmary are permitted to ask for the services of any licensed regular medical practitioner in good standing, at their own expense.

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

Services for Foreign Students

The Adviser to Foreign Students offers guidance on all nonacademic problems to students from other lands. Questions regarding immigration regulations, housing, social integration, personal problems, finances, minimum course requirements, employment, and home hospitality should be referred to this counselor in the Office of Student Affairs. Inquiries concerning admissions are taken directly to the Admissions Office; those regarding Foreign Exchange Scholarships are sent directly to the Executive Secretary, Foreign Exchange Scholarship Committee, 204 Smith Hall; and accepted foreign students are sent by the Admissions Office to the English Department, 115 Parrington Hall, to determine need for special instruction in English.

New students from other lands are asked to take part in the Orientation Program for New International Students, September 20 through 24, 1950 and should report to the Adviser to Foreign Students, Office of Student Affairs, 233 Memorial Union Building by 9:00 a.m. on Wednesday, September 20, 1950.

U. S. students contemplating foreign study may obtain current information on institutions abroad and scholarships available from the Adviser to Foreign Students. Applications for Fulbright Scholarships are available from October 15 to December 1.

Any foreign student traveling to Canada while in attendance at the University of Washington must be sure to have in his possession, in addition to other credentials, a statement from the Registrar that he is currently registered at the University. This will assure him clearance through immigration when he attempts to return to the United States.

Information for World War II Veterans

World War I Veterans see page 95

Admission. The University welcomes veterans under the G. I. Bill and the Vocational Rehabilitation Act, provided they can meet the University of Washington entrance requirements. (See pages 86-92.) 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 89.) Equivalency certificates and/or General Educational Development tests may be submitted for consideration by veterans who were in the armed services prior to V-J Day. Students entering the armed services subsequent to V-J Day are required to submit full high school records. Nongraduates of high schools, now in the armed services, should consult their educational officers regarding the possibility of completing high school requirements through the United States Armed Forces Institute and through approved extension divisions of accredited universities.

Counselors, in the Office of Student Affairs, will be glad to discuss with any veteran his problems concerning admission.

Receiving Government Aid. All applications for, and questions about, the G. I. Bill should be addressed to a Veterans Administration Regional Office, preferably the Seattle office if the veteran wishes to attend the University of Washington. Because of Veterans Administration regulations, particularly those restricting changes of course, it is suggested that the student, before applying to the Veterans Administration, confirm his eligibility for the course for which he desires Veterans Administration authorization. New students will confirm this by designation on Notification of Admission Blank. Returning old students will check with the Registrar's Office at 109 Administration Building to verify their present college, and major if Arts and Sciences or Graduate School, and then apply at Veterans' Eligibility and Fees Office, 1B Administration Building, to determine whether a new Veterans Administration Certificate is required. Thus, the veteran can be advised to request from the Veterans Administration authority to enroll in that school or college of the University to which his academic standing makes him eligible.

Application for the Veterans Administration Certificate of Eligibility should be made at least ten weeks prior to the beginning of University instruction. If he is eligible, the Veterans Administration will issue the veteran a Certificate of Eligibility, which should be filed in the Veterans' Division of the Comptroller's office during registration in lieu of payment of fees. A student so enrolled is subject to payment of any charges not covered under the G. I. program. All fees are payable by the student at time of registration if he is unable to present his certificate of eligibility. Payment will be refunded when and if full eligibility is established as of the start of the quarter. Subject to Veterans Administration regulations, a veteran fully qualified under the G. I. program is issued a credit card entitling him to books and supplies required for his course.

Subsistence payments are made direct to the veteran by the Veterans Administration.

Credit for Armed Service Training Courses. The American Council on Education has provided colleges and universities of the United States with recommended values for completed armed services training courses offered on college campuses as well as at the Army, Navy, or Air Force camps, posts, or stations. In accordance with these recommendations, such study, if entered before September, 1946, and if equivalent to degree courses at standard universities, will be given proportionate credit, which will be applied, as far as possible, on requirements of the University of Washington. Basic military training provides 12 quarter credits and will be applied on lower-division physical education and Military Science requirements. (See page 99.) Specialized training courses for enlisted men, such as those which qualify a man to be an Airplane Engine Mechanic or Airplane Instrument and Electrical Specialist, carry from 6 to 18 quarter credits. Credits allowed for such training are applied, if possible, on University requirements, but they are not readily applicable to the requirements of the set curricula in the College of Engineering, in premedicine, and elsewhere. No credit shall be allowed for work entered upon in Armed Forces training schools subsequent to September, 1946.

Credits 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. 175 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. 175 requirements.

Vocational Guidance. Vocational counselors in the Counseling Center are prepared to assist veterans desiring vocational guidance.

Loans

The University administers several loan funds available to students who have successfully completed at least one quarter in University. Students desiring term loans should file applications prior to the beginning of instruction in the quarter during which the loan is required. For information, consult the Office of Student Affairs, which keeps complete information on the availability of loan funds within and without the University. Loans from funds administered off-campus should be applied for approximately six weeks in advance of need. Requests for funds to meet temporary emergency needs may be made through the Office of Student Affairs which can help determine the best manner to meet the emergency.

ALUMNI ASSOCIATION

All graduates of the University of Washington, as well as all persons who have completed satisfactorily one year of collegiate work, are eligible for membership in the association. The membership fee is five dollars 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 is six dollars per year; this includes one annual subscription to the *Washington Alumnus* and all other privileges of a single membership. A Board of Trustees, consisting of twenty-three members, is the governing body of the association.

SCHOLASTIC HONORS

Honor Awards

1. The President's Medal is presented at Commencement to the member of the graduating class who has the highest scholastic standing for his entire course.
2. The following are presented by the President in the name of the faculty at the annual President's Assembly in the Autumn Quarter:
 - a. The Junior Medal, awarded to the senior having the highest scholastic standing for the first three years of his course.
 - b. The Sophomore Medal, awarded to the junior having the highest scholastic standing for the first two years of his course.
 - c. Certificates of High Scholarship, awarded to seniors, juniors, and sophomores for excellence in scholarship in their junior, sophomore, and freshman years respectively.

Honor Societies

Phi Beta Kappa

Sigma Xi

Tau Beta Pi

Order of the Coif

FELLOWSHIPS, SCHOLARSHIPS, PRIZES, AND AWARDS

The University offers many rewards for outstanding academic achievement. Some are given by the University, but many are available through the generosity of friends and alumni of the University. Some bear the names of those in whose memory the funds were given. These awards take varying forms.

Fellowships are awarded to graduate students who show promise of success in research in both theoretical and applied studies. These are granted by the Dean of the Graduate School and by individual departments. Teaching fellowships are those which require duty as a teaching assistant.

Scholarships are granted on application and on a competitive basis. Usual requirements include scholarly achievement and promise, excellence of character, and financial need. Awards are made principally to upperclass and graduate students. The University has a few scholarships available to entering freshmen and invites inquiry concerning them.

Prizes are financial awards which total less than tuition and are generally awarded for some specific competition, such as an essay contest on an assigned subject.

Awards consist of recognition other than by financial reward and are generally given for a combination of scholarly achievement and participation in activities.

Application for scholarship information should be made to the University Scholarship Committee, Office of Student Affairs, University of Washington, Seattle 5, Washington. A handbook listing available scholarships will be mailed upon request.

ASSOCIATED STUDENTS

The Associated Students of the University of Washington (ASUW) is the central organization which conducts the activities of the student body. Through the ASUW Board of Control and its various committees and boards, students assume major responsibility in the government of student life with authority delegated by the University. Membership is required of all regularly enrolled students. For fees, see pages 93, 94. The fee gives each student a membership in the corporation, and helps to finance the program of athletics, debates, concerts, lectures, the *University of Washington Daily*, the Memorial Union Building, and all other activities of the ASUW. A portion of the fee is used to make possible the expansion of the next two units of the ASUW building and the addition to the football stadium. The expansion of these two areas will make it possible for the ASUW to present a well-rounded program of recreational and athletic activities to its members. Any member of the ASUW has the privilege of purchasing an athletic ticket for \$2.50, including federal and city admission taxes. This ticket, when properly validated, will admit owner to all regularly scheduled Pacific Coast Conference intercollegiate athletic events during the school year.

SECTION II—ANNOUNCEMENT OF CURRICULA

COLLEGE OF ARTS AND SCIENCES

LLOYD S. WOODBURN, *Dean*, 121 Education Hall

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

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

Student Counseling

Each department and school within the college provides faculty advisers for its students. The Office of the Dean maintains a staff of advisers to counsel premajor and preprofessional students.

Entrance Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 86-88. 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 social science.

Graduation Requirements

In most respects the requirements for graduation in the College of Arts and Sciences conform to the all-University requirements.

1. Required courses

a. English 101, 102, 103 (9 credits or the equivalent after passing the preliminary Freshman English Test required of all students). For English 103, journalism students substitute Journalism 200, News Writing.

*b. Physical Education 110 (required of all women) or Physical Education 175 (required of all men) must be taken during the freshman year. Each of these courses carries 2 credits. In addition, each student must complete 6 quarters of physical education activity. (See page 100 for details.)

*c. All male students entering directly from high school will be held for the military training requirement of 6 quarters. (See page 99 for specific requirements and exemptions therefrom.)

2. Group requirements

The subject materials of the College of Arts and Sciences are grouped into three broad fields of knowledge. The subject fields in these groups are listed on page 115 under Curricula. A student choosing the elective curricula must have a minimum of 10 credits in one group, 20 credits in a second group, and 30 credits in the remaining group. Required courses will not satisfy any group requirements.

3. Major requirements

A student must choose a major field in which to specialize. Departmental requirements vary, the students must earn from 36 to 50 credits to satisfy the requirements. Some departments have both elective and prescribed curricula for their majors.

*No more than the required number of credits in Physical Education activity or lower-division military training courses may be counted for graduation. If a male student is excused from military training, he may be required to earn equivalent credits in other University subjects. (See page 100.)

4. Credits

a. 180 academic credits, including Physical Education 110 or 175, plus the required credits in Physical Education activity; and in the case of male students, also the required credits in lower-division military training are necessary for graduation.

b. An accumulative grade point of 2.0 (more if required by a department) is necessary to graduate. Grades earned at other institutions may not be used to raise the grade-point average at the University of Washington.

c. Of these credits, a minimum of 60 must be earned in upper-division courses exclusive of those earned in Army, Navy, or Air Force ROTC subjects.

d. Of the work of the senior year (45 credits) at least 35 credits shall be earned in a minimum of three quarters in residence. (For details see page 101.)

5. Deficiencies

a. Deficiency credits are not acceptable in the satisfaction of group requirements.

b. University credit will not be allowed for work done to make up the deficiencies in Elementary Algebra, Plane Geometry, or English 50.

c. Credit is allowed for work taken to satisfy deficiencies in laboratory science and language.

d. Students should check with their adviser or the department concerned to avoid duplications in deficiency removals.

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, and Group III are used, reference is made to these divisions.

GROUP I

Humanities

Architecture
Art
Classical Languages
Drama
English
Far Eastern
General Literature
Germanic Languages
Journalism
Liberal Arts
Librarianship
Music
Romance Languages
Scandinavian Languages
Speech

GROUP II

Social Sciences

Anthropology
Economics
Geography
History
Home Economics
Philosophy
Physical Education
Political Science
Psychology
Sociology

GROUP III

Sciences

Anatomy 301
Astronomy
Botany
Chemistry
Fisheries
Geology
Mathematics
Meteorology and
Climatology
Microbiology
Oceanography 101
Pharmacy 115
Physics
Zoology

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

Courses taken to remove entrance deficiencies shall not be used to satisfy group requirements.

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

1. Prescribed Departmental Curricula

Some departments have outlined courses of study which definitely prescribe the work the student must complete for the bachelor's degree. Students who enter these curricula will consult a faculty adviser in the department of their choice at the earliest possible date.

2. Elective Departmental Curricula

Elective departmental majors are more flexible than prescribed majors. Students choosing a major of this type must earn 36 or more credits in the subjects represented by the department concerned. They are expected to complete, during the first two years, a minimum of 30 credits in one group, 20 credits in a second group, and 10 credits in the remaining group. Departments may add to these requirements if they so desire.

Students will plan their work under the direction of faculty advisers. The degree conferred will be bachelor of arts or bachelor of science, depending upon the major selected.

3. Nondepartmental Curricula

A. Premajor. Those students who have not selected a major must meet general University and college requirements. They are assigned to faculty advisers by the Dean's office. Normally students remain as premajors for only one year.

B. General Studies. The division of General Studies offers courses of study even more flexible than elective departmental majors. Here an effort is made to meet the needs of those students whose interests are not professional or are too broad for the limitations of a single department. When necessary, the resources of several departments or of other colleges are drawn upon in building curricula to coincide with the interests of the student concerned. (See General Studies, page 131 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 200.

ANTHROPOLOGY

ERNA GUNTHER, *Executive Officer*, 211 Museum

DEGREE: Bachelor of Arts

The following courses are required: 101, 102, 103; 210 or 213; 215 or 217; 441J, 350 or 371; one or two ethnographic courses; 432; 433; 437; 450J; 460. A 2.5 grade-point average in anthropology is also required; electives must be approved by the department and should include two foreign languages chosen from French, German, or Spanish if graduate work is contemplated.

There is also a Latin-American anthropology major; consult description under General Studies.

ARCHITECTURE

ARTHUR P. HERRMAN, *Director*, 204 Architecture 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. 224, 225, 226 are known as Grade I; Arch. 324, 325, 326, Grade II; and Arch. 424, 425, 426, Grade III. However, a student may in some cases advance more rapidly; by excellence 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

PREARCHITECTURE REQUIREMENTS

FIRST YEAR		SECOND YEAR	
	Credits		Credits
Arch. 100, 101. Appreciation.....	4	Arch. 124, 125, 126. Basic Design.....	18
Arch. 105. The House.....	2	Physics 101 or 104. General.....	5
Engl. 101, 102, 103. Composition.....	9	Physics 112, 113. Arch. Physics.....	10
Math. 154, 155, 156. Arch. Math.....	9	Psych. 236. Industrial Psych.....	3
Soc. 110. Survey, for Arch.....	5	Econ. 200. Introd. to Econ.....	5
Soc. 255. American Housing.....	5	P.E. Activity.....	3
P.E. 110 or 175.....	2	Air, Mil., or Nav. Sci.....	6 or 9
P.E. Activity.....	3	Electives.....	5
Air, Mil., or Nav. Sci.....	6 or 9		
Electives.....	8		

ARCHITECTURE REQUIREMENTS

THIRD YEAR		FOURTH YEAR	
	Credits		Credits
Arch. 224, 225, 226. Design Gr. I.....	21	Arch. 300, 301, 400. Hist. of Arch.....	6
Arch. 230, 231, 232. Materials.....	6	Arch. 324, 325, 326. Design Gr. II.....	21
Arch. 240, 241, 242. Water Color.....	9	Arch. 360, 361. Theory of Arch.....	4
Arch. 276, 277, 278. Theory of Bldg. Constr. 9		Arch. 376, 377, 378. Arch. Structures.....	12
		Arch. 380. City Planning.....	2

FIFTH YEAR

	Credits
Arch. 401, 402, 403. Hist. of Arch.....	6
Arch. 424, 425, 426. Design Gr. III.....	21
Arch. 430, 431, 432. Contract Drawings.....	10
Arch. 435, 436, 437. Mech. Equip. of Bldgs. 6	
Arch. 469. Specs. and Contracts.....	3

Curriculum in City Planning

FIRST YEAR, SECOND YEAR, THIRD YEAR

DEGREE: Bachelor of Architecture in City Planning

(Same as present curriculum in Architecture)

New City Planning Option

FOURTH YEAR		FIFTH YEAR	
	Credits		Credits
Arch. 324. Design Gr. II.....	7	Arch. 491. City Pl. Des.....	7
Arch. 325. Design Gr. II.....	7	Arch. 492. City Pl. Design.....	7
Arch. 360. Theory.....	2	Arch. 493 (C.P.) Thesis.....	7
Arch. 361. Theory.....	2	R.E. 301. Urban Pl. Est.....	5
Arch. 380. City Planning.....	3	C.E. 352. Municipal Eng.....	3
Arch. 480. C.P. Practice.....	3	P.S. 375. Prob. of Munic. Govt. & Admin... 5	
Arch. 490. C.P. Design.....	7	B.Law 207. Business Law.....	3
Econ. 353. Introd. Pub. Fin.....	3	P.S. 377. Pub. Policy in Govt. Planning... 3	
Geog. 477. Urban Geog.....	3	C.E. 428. Trans. Engr.....	3
G.E. 121. Plane Surv.....	3	Electives.....	5
C.E. 403. Prin. Reg. Pl.....	3		
Electives.....	5		

ART

WALTER F. ISAACS, *Director*, 102 Art Building

DEGREE: Bachelor of Arts

Advanced standing in the school is granted only on presentation of credentials from art schools or university art departments whose standards are recognized by this school. Ordinarily, the presentation of samples of work done will be required before advanced standing will be considered. In the curricula which follow, the laboratory science requirement may be satisfied with botany, zoology, chemistry, physics (except photography), or geology. The work of the first year is the same for all majors except those in Art Education, Industrial Design, and Ceramic Art.

REQUIRED FOR THE FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 105. Drawing.....	3	Art 106. Drawing.....	3	Art 107. Drawing.....	3
Art 109. Design.....	3	Art 110. Design.....	3	Art 111. Design.....	3
Engl. 101. Composition... 3		Engl. 102. Composition... 3		Engl. 103. Composition... 3	
Mod. Foreign Language... 5		Mod. Foreign Language... 5		Mod. Foreign Language... 5	
P.E. 110 or 175.....	2	P.E. Activity.....	1	Electives.....	2
P.E. Activity.....	1	Air, Mil., or Nav. Sci. 2 or 3		P.E. Activity.....	1
Air, Mil., or Nav. Sci. 2 or 3			17 or 18	Air, Mil., or Nav. Sci. 2 or 3	
	19 or 20				19 or 20

General Curriculum

FIRST YEAR

(Same as listed above)

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 112. Hist. of Art Through the Renaissance... 5		Art 254. Adv. Design.....	3	Art 255. Adv. Design.....	3
Art 253. Adv. Design.....	3	Art 257. Painting.....	3	Art 258. Painting.....	3
Art 256. Painting.....	3	Art 272. Sculpture.....	3	Electives.....	9
Electives.....	4	Electives.....	6	P.E. Activity.....	1
P.E. Activity.....	1	P.E. Activity.....	1	Air, Mil., or Nav. Sci. 2 or 3	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3			18 or 19
	18 or 19		18 or 19		

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Arch. 100. Appreciation... 2		Arch. 101. Appreciation... 2		Approved Design.....	3
Art 303. Ceramics or Art 357. Metal.....	3	Art 304. Ceramics or Art 358. Jewelry.....	3	Art 362. Life.....	3
Art 360. Life.....	3	Art 361. Life.....	3	Lab. Sci.	5
Econ., Pol. Sci., or Soc... 5		Lab. Sci.	5	Electives.....	4
Electives.....	2	Art 326. Hist. of Painting Since the Renaissance... 2			15
	15		15		

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 301. Elem. Interior Design.....	2	Art 450. Illustration or Art 451. Printmaking... 5		Art 320. Hist. of Modern Sculpture.....	2
Art 463. Composition... 3		Art 464. Composition... 3		Art 497. Senior Seminar... 1	
Art 495. Senior Seminar... 1		Art 496. Senior Seminar... 1		Electives.....	12
Electives.....	9	Electives.....	6		15
	15		15		

Those interested in costume design should elect as many as possible of the following courses: Art 369, 370, 371, 479, 480, 481; Home Economics 125, 134, 234, 321, 322, 332, 334, 433. Home Economics 332 (for art majors) is recommended to those taking Art 369, 370, 371.

Art Education

The bachelor's degree will be awarded upon the completion of the four-year course. For the Three-Year Secondary Certificate, the fifth year must be completed. The first minor is in the major field, but the candidate must have a second minor in another field. See also College of Education. The social science credits may be earned in sociology, economics, political science, or History 464. An average standing of 2.5 in art subjects is required of all teaching candidates.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 105. Drawing.....	3	Art 106. Drawing.....	3	Art 107. Drawing.....	3
Art 109. Design.....	3	Art 110. Design.....	3	Art 111. Design.....	3
Engl. 101. Composition... 3		Engl. 102. Composition... 3		Engl. 103. Composition... 3	
P.E. 110 or 175.....	2	Econ., Pol. Sci., or Soc... 5		Electives.....	7
Electives.....	4	P.E. Activity.....	1	P.E. Activity.....	1
P.E. Activity.....	1	Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3	
Air, Mil., or Nav. Sci. 2 or 3			17 or 18		18 or 19
	18 or 19				

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Arch. 100. Appreciation... 2		Arch. 101. Appreciation... 2		Art 255. Adv. Design... 3	
Art 112. Hist. of Art Through the Renaissance 5		Art 254. Adv. Design... 3		Art 258. Painting... 3	
Art 253. Adv. Design... 3		Lab. Sci. 5		Psych. 100. General... 5	
Educ. 101. Orientation... 2		Electives 2		Electives 4	
P.E. Activity 1		P.E. Activity 1		P.E. Activity 1	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3	
15 or 16		15 or 16		18 or 19	

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 303. Ceramics or Art 357. Metal... 3		Art 300. Elem. Crafts... 2		Art 302. Bookbinding... 2	
Art 305. Lettering... 3		Art 304. Ceramics or Art 358. Jewelry... 3		Art 362. Life... 3	
Art 272. Sculpture or Art 369. Costume De- sign 2 or 3		Soc. Sci. 5		Lab. Sci. 5	
Educ. 209 3		Educ. 370. Procedures... 5		Electives 5	
Electives 2 or 3		15		15	
13 to 15					

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 301. Elem. Interior Design 2		Art 326. Hist. of Painting Since the Renaissance... 3		Art 320. Hist. of Modern Sculpture 2	
Art 363. Composition... 3		Art 364. Composition... 3		Art 450. Illustration or Art 452. Printmaking... 5	
Art 495. Senior Seminar... 1		Art 496. Senior Seminar... 1		Art 497. Senior Seminar... 1	
Educ. 375A. Methods... 2		Art 466. Commercial Design 5		Educ. 390. Measurements... 2	
Electives 7		Electives 4		Electives 5	
15		15		15	

FIFTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Educ. 371. Cadet Teaching 4		Educ. 372. Cadet Teaching 4		Hist. 464. Wash. State... 5	
Phil. 445 5		Educ. 410. Educ. Soc.... 3		Educ. 360. Principles of Education 3	
Electives 5		Electives 9		Electives 7	
14		16		15	

Teaching Major and Minor in the College of Education

The curriculum in *Art Education* described above provides a teaching major with the first minor in art. The courses credited to the minor are: Art 301, 302, 303, 304, 320 or 357, 358; 305, 326, 466—a total of 21 credits.

For those who do not take the first minor in art the following courses constitute a major: Art 105, 106, 107, 109, 110, 111, 112, 253, 254, 255, 256, 257, 258, 300, 450; 360 or 361 or 362; 463 or 464; costume design or sculpture, 2 or 3 credits—a total of 58 credits.

The minor for nonmajors requires: Art 105, 106, 107, 109, 110, 111, 112, 253, 254, 301, 302, 305.

A minor open to Home Economics majors in textiles and clothing requires: Art 105, 106, 109, 110, 111, 253, 254, 255, 305, 369, 370.

Commercial Art

FIRST YEAR

(Same as for General Curriculum)

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 112. Hist. of Art Through the Renaissance 5		Art 151. Figure Sketching 1		Art 255. Adv. Design... 3	
Art 253. Adv. Design... 3		Art 254. Adv. Design... 3		Art 258. Painting... 3	
Art 256. Painting... 3		Art 257. Painting... 3		Art 320. Hist. of Modern Sculpture 2	
Arch. 100. Appreciation... 2		Arch. 101. Appreciation... 2		Econ. 200 5	
Electives 3		Psych. 100 5		Electives 2	
P.E. Activity 1		P.E. Activity 1		P.E. Activity 1	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3	
19 or 20		17 or 18		18 or 19	

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 305. Lettering.....	3	Art 326. Hist. of Painting Since the Renaissance..	2	Art 329. Appreciation of Design	2
Journ. 220. Fundamentals of Advertising	3	Journ. 370. Display Advertising	3	Art 362. Life.....	3
Lab. Sci.	5	Lab. Sci.	5	Journ. 371. Typography..	3
Electives	4	Electives	5	Pol. Sci. 100 or Soc. 310.	5
	15		15	Electives	2
					15

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
*Art 369. Costume Design	2	Art 451. Printmaking.....	5	Art 467. Commercial Design	5
Art 463. Composition.....	3	*Art 370. Costume Design	2	Art 497. Senior Seminar..	9
Art 495. Senior Seminar..	1	Art 466. Commercial Design	5	Electives	9
Electives	9	Art 496. Senior Seminar..	1		15
	15	Electives	2		
			15		

Industrial Design Curriculum

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 105	3	Art 106	3	Art 107	3
Art 109	3	Art 110	3	Art 111	3
Engl. 101	3	Engl. 102	3	Art 272	3
Arch. 100	2	Arch. 101	2	Engl. 103	3
P.E. 110 or 175.....	2	G.E. 107	3	Math. 122	5
P.E. Activity	1	P.E. Activity	1	P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3
	16 or 17		17 or 18		20 or 21

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 253	3	Art 254	3	Art 255	3
Arch. 314	4	Arch. 315	4	Arch. 316	4
M.E. 201	1	M.E. 202	1	M.E. 203	1
Physics 101 or 104.....	5	Physics 112	5	Physics 113	5
Psych. 236	3	Bus. Law 207	3	Speech 327	3
P.E. Activity	1	P.E. Activity	1	P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3
	19 or 20		19 or 20		19 or 20

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 112	5	Art 317	3	Marketing 301	5
Art 280	3	Econ. 200	5	M.E. 342	3
Art 316	3	M.E. 411	3	Art 305	3
†Chemistry	5	†Chemistry	5	Art 318	3
	16		16	Art 329	2
					16

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 301	2	Art 326	2	Art 320	2
Art 303	3	Art 357	3	Art 447	5
Art 445	5	Art 446	5	Art 497	1
Art 495	1	Art 496	1	G.E. 351	1
Journ. 220	3	Journ. 370	3	Journ. 371	3
	14		14		12

*Art 371 may be substituted for Art 369 or 370.

†Electives may be substituted for Chemistry (10 credits) if the student presents one year of high school chemistry for entrance.

Interior Design

FIRST YEAR

(Same as for General Curriculum)

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 280. Furniture Design 3		Art 281. Furniture Design 3		Art 262. Essentials of	
Art 283. Hist. of Furniture		Arch. 101. Appreciation... 2		Interior Design	2
and Interior Styles.... 2		Arch. 125	6	Art 282. Furniture Design 3	
Arch. 100. Appreciation... 2		Electives	6	Arch. 105. Appreciation... 2	
Arch. 124	6	P.E. Activity	1	Arch. 126	6
Electives	4	Air, Mil., or Nav. Sci.. 2 or 3		Electives	2
P.E. Activity	1			P.E. Activity	1
Air, Mil., or Nav. Sci.. 2 or 3			20 or 21	Air, Mil., or Nav. Sci.. 2 or 3	
	20 or 21				18 or 19

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 112. Hist. of Art		Art 311. Interior Design.. 5		Art 312. Interior Design.. 5	
Through the Renaissance 5		Art 326. Hist. of Painting		Econ., Pol. Sci., or Soc.. 5	
Art 310. Interior Design.. 5		Since the Renaissance.. 2		Electives	5
Lab. Sci.	5	Lab. Sci.	5		
	15	Electives	3		15
			15		

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 472. Adv. Interior		Art 473. Adv. Interior		Art 320. Hist. of Modern	
Design	5	Design	5	Sculpture	2
Art 495. Senior Seminar.. 1		Art 496. Senior Seminar.. 1		Art 474. Adv. Interior	
Electives	9	Home Economics 316.... 5		Design	5
	15	Electives	4	Art 497. Senior Seminar.. 1	
			15	Electives	7
					15

Painting

FIRST YEAR

(Same as for General Curriculum)

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art. 112. Hist. of Art... 5		Art 257. Painting..... 3		Art 258. Painting..... 3	
Art 256. Painting... 3		Art 266. Painting..... 3		Art 267. Painting..... 3	
Art 265. Painting..... 3		Art 272. Sculpture..... 3		Art 320. Hist. of	
Arch. 100. Appreciation... 2		Arch. 101. Appreciation... 2		Modern Sculpture	2
Electives	2	Electives	4	Laboratory Science..... 5	
P.E. Activity	1	P.E. Activity	1	Electives	2
Air, Mil., or Nav. Sci.. 2 or 3		Air, Mil., or Nav. Sci.. 2 or 3		P.E. Activity	1
	18 or 19		18 or 19	Air, Mil., or Nav. Sci.. 2 or 3	
					18 or 19

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 360. Life..... 3		Art 326. Hist. of Painting		Art 362. Life..... 3	
Art 375. Adv. Painting... 3		Since the Renaissance.. 2		Art 377. Adv. Painting... 3	
Lab. Sci.	5	Art 361. Life..... 3		Approved Design	6
Electives	4	Art 376. Adv. Painting... 3		Electives	3
	15	Soc., Econ., or Pol. Sci.. 5			
		Electives	2		15
			15		

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 307. Portrait Painting 3		Art 308. Portrait Painting 3		Art 309. Portrait Painting 3	
Art 463. Composition..... 3		Art 464. Composition..... 3		Art 465. Composition... 3	
Art 495. Senior Seminar.. 1		Art 496. Senior Seminar.. 1		Art 497. Senior Seminar.. 1	
Electives	8	Electives	8	Electives	8
	15		15		15

Sculpture

FIRST YEAR

(Same as for General Curriculum)

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 112. Hist. of Art		Art 257. Painting.....	3	Art 258. Painting.....	3
Through the Renaissance	5	Art 273. Sculpture.....	3	Art 274. Sculpture.....	3
Art 256. Painting.....	3	Arch. 101. Appreciation..	2	Art 320. Hist. of Modern	
Art 272. Sculpture.....	3	Lab. Sci.	5	Sculpture	2
Arch. 100. Appreciation...	2	Electives	2	Lab. Sci.	5
Electives	2	P.E. Activity	1	Electives	2
P.E. Activity	1	Air, Mil., or Nav. Sci. 2 or 3		P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3			18 or 19	Air, Mil., or Nav. Sci. 2 or 3	
	18 or 19				18 or 19

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 303. Ceramics.....	3	Art 304. Ceramics.....	3	Art 324. Sculpture.....	3
Art 322. Sculpture.....	3	Art 323. Sculpture.....	3	Art 334. Adv. Sculpture..	3
Art 332. Adv. Sculpture...	3	Art 326. Hist. of Painting		Art 362. Life.....	5
Art 360. Life.....	3	Since the Renaissance..	2	Econ., Pol. Sci., or Soc..	5
Electives	3	Art 333. Adv. Sculpture..	3	Electives	1
	15	Art 361. Life.....	3		15
		Elective	1		
			15		

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 436. Sculpture		Art 437. Sculpture		Art 438. Sculpture	
Composition	5	Composition	5	Composition	5
Art 495. Senior Seminar..	1	Art 496. Senior Seminar..	1	Art 497. Senior Seminar..	1
Electives	9	Electives	9	Electives	9
	15		15		15

Ceramic Art

DEGREE: Bachelor of Arts (at end of fourth year)

and

DEGREE: Bachelor of Arts in Ceramic Art (at end of fifth year)

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 105 Drawing	3	Art 106. Drawing	3	Art 107. Drawing	3
Art 109. Design.....	3	Art 110. Design.....	3	Art 111. Design.....	3
Engl. 101. Composition...	3	Engl. 102. Composition...	3	Engl. 103. Composition ..	3
*Chem. 101. General.....	5	Chem. 102. General.....	5	Chem. 113. General.....	5
P.E. 110 or 175. Health..	2	Electives	2	P.E. Activity	1
P.E. Activity	1	P.E. Activity	1	Air, Mil., or Nav. Sci. 2 or 3	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3			17 or 18
	19 or 20		19 or 20		

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 253. Adv. Design....	3	Art 254. Adv. Design....	3	Art 255. Adv. Design....	3
Art 256. Painting.....	3	Art 257. Painting.....	3	Art 258. Painting.....	3
Mod. Foreign Language..	5	Mod. Foreign Language..	5	Mod. Foreign Language..	5
Math. or Physics.....	3 or 5	Math. or Physics.....	3 or 5	Math. or Physics.....	3 or 5
P.E. Activity	1	P.E. Activity	1	P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3	
	17 to 20		17 to 20		17 to 20

*Not required if one year of high school chemistry is offered.

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 112. History of Art		Art 273. Sculpture.....	3	Art 274. Sculpture.....	3
Through the Renaissance	5	Art 304. Ceramic Art....	3	Art 301. Essentials of	
Art 272. Sculpture.....	3	Art 326. Hist. of Painting		Interior Design	2
Art 303. Ceramic Art....	3	Since the Renaissance..	2	Art 320. Hist. of Sculpture	2
Ceramic Engr. 312.....	3	Ceramic Engr. 315.....	3	Art 330. Ceramic Art....	3
	14	Econ., Pol. Sci., or Soc..	5	Mining 485.	3
			16	Electives	2
					15

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 357. Metal.....	3	Art 358. Jewelry.....	3	Art 362. Life.....	3
Art 360. Life.....	3	Art 361. Life.....	3	Art 455. Adv. Ceramic	
Art 453. Adv. Ceramic		Art 454. Adv. Ceramic		Art	3
Art	3	Art	3	Art 497. Senior Seminar..	1
Art 495. Senior Seminar..	1	Art 496. Senior Seminar..	1	Electives	8
Ceramic Engr. 317.....	3	Soc. Sci.	5		15
Electives	2		15		
	15				

FIFTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Art 463. Composition.....	3	Art 464. Composition.....	3	Art 465. Composition.....	3
Art 485. Adv. Ceramic		Art 486. Adv. Ceramic		Art 487. Adv. Ceramic	
Art	5	Art	5	Art	5
Electives	7	Electives	7	Electives	7
	15		15		15

BACTERIOLOGY

(See Microbiology, page 141)

BIOCHEMISTRY

Undergraduate concentration in biochemistry is accomplished through electives at an advanced level in the curricula described under Chemistry (p. 124).

BASIC MEDICAL SCIENCE

HAROLD M. HINES, *Adviser*, 121 Education Hall

DEGREE: Bachelor of Science in Basic Medical Science

This curriculum is intended to provide the bachelor's degree for students who enter medical school at the completion of their third year of preprofessional work and wish to apply their first year's credit gained at medical school to obtain the degree of bachelor of science in basic medical science from the University of Washington.

The requirements for this degree are that the student shall complete the University of Washington "Premedical Curriculum," and the first year of a medical school or dental school curriculum. The student must take at least the third year of his premedical course and the first year of his medical course in residence at the University of Washington, and shall present an over-all grade-point average of 2.5 or above, including the work at the medical school. A student who takes at least the second and third years of the premedical course at the University of Washington and then enters another medical school may also qualify for this degree. Applications for the degree should be directed to A. W. Martin, Executive Officer of the Zoology Department.

Credit in subjects taught in the first year's curriculum of any Class A medical school, as rated by the A. M. A., may be applied toward the degree. Since some upper-division courses in anatomy, physiology, microbiology, and chemistry are considered to duplicate similar courses in medical school, credit gained in these courses at the University of Washington will not be accepted toward the degree. Students should work closely with their advisers on this matter.

BOTANY

C. L. HITCHCOCK, *Executive Officer*, 342 Johnson Hall

DEGREE: Bachelor of Science

The elective major requires 40 credits, including courses 111, 112, 113, 371 or 472, Biology 451, and a minimum of 2 quarters of college chemistry. Organic chemistry is recommended for all majors, and required of those who contemplate graduate work.

Teaching Major or Minor in the College of Education

See Biology under College of Education (page 161) concerning teaching major. A minor requires 25 credits including courses 111 (or Biol. 101J-102J), 112, 113, and at least 2 credits in 201 or 202, or equivalent.

CHEMISTRY

PAUL C. CROSS, *Executive Officer*, 101 Bagley Hall

Two curricula are available which lead to a degree with a major in chemistry: (1) The prescribed curriculum permits an intensive study of chemistry and related sciences in preparation for graduate study or for a professional career; (2) The elective curriculum provides a basic introduction to chemical science and allows a wider choice of electives in fields outside the physical sciences.

Students interested in science with a possible major in chemistry are urged to consult a chemistry department adviser before registration. Transfer students must complete at least 9 credits in chemistry at this University to qualify for either of the following degrees.

Prescribed Curriculum

DEGREE: Bachelor of Science

The course requirements are: 9 credits in English Composition 101, 102, 103; 2 credits in P.E. 110 or 175; a minimum of 65 credits in chemistry, 15 in physics, 24 in mathematics; 18 in science electives; 24 in humanities and social studies; and 26 in free electives. All courses must be approved by the department.

For graduation under this professional curriculum the student must:

1. Demonstrate a reading knowledge of German.
2. Present a grade-point average of at least 2.5 in his chemistry courses with a "C" or better in each course.
3. Present a total grade-point average of 2.5 or higher.

A representative program by quarters for the first two years is as follows:

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
†Chem. 115	5	†Chem. 116	5	*Chem. 325	5
Physics 121	5	Physics 122	5	Physics 123	5
Math. 151	3	Math. 152	5	Math. 153	5
P.E. 110 or 175	2	P.E. Activity	1	P.E. Activity	1
P.E. Activity	1	Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3
Air, Mil., or Nav. Sci. 2 or 3	3				
	18 or 19		18 or 19		18 or 19

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 335	3	Chem. 336	3	Chem. 337	3
Chem. 345	2	Chem. 346	2	Chem. 357	3
Chem. 355	3	Chem. 356	4	Math. 253	3
Math. 251	5	Math. 252	3	Engl. 103	3
Engl. 101	3	Engl. 102	3	Elective	5
P.E. Activity	1	P.E. Activity	1	P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3
	19 or 20		18 or 19		20 or 21

With this background, the third year may include Chem. 358, 359, 426, and 415, 425, 445. Other upper-division courses may be elected so as to fulfill the above general requirements and to provide advanced work in fields of greatest value to the individual.

*Students entering without high school chemistry take Chem. 111, 112, 113 in place of 115, 116, 325 their first year. They should then elect 325 in the Spring Quarter of their second year.

Elective Curriculum**DEGREE: Bachelor of Arts**

The following courses or their equivalent represent the minimum requirements: Chem. 115, 116 (or 111, 112, 113); 221, 231, 232, 241, 242, 351, 352, 353; one year college physics; mathematics through one quarter of calculus; 10 credits in German or French. At least 30 credits of the above sciences should be completed among the first 90 credits. Intention to major in this curriculum 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.

Teaching Major or Minor in the College of Education

The requirements for a teaching major in chemistry are one year of college physics and at least 36 credits in chemistry, including the following courses (or department-approved substitutes): Chem. 115, 116 (or 111, 112, 113); 221, 231, 232, 241, 242, 351, 352. For a teaching minor, the minimum requirements are one year of high school or college physics and 25 credits in chemistry including the following courses (or department-approved substitutes): Chem. 115, 116 (or 111, 112, 113); 221, 230.

Grades of "C" or above must be obtained in all chemistry courses counted to meet the minimum credit requirements. The election of sufficient college mathematics to include some calculus is recommended.

Applicants for teaching certificates in chemistry who are transfers from other institutions must earn a minimum of 9 credits in chemistry at this University in order to secure a departmental recommendation.

CLASSICAL LANGUAGES AND LITERATURE**(Greek and Latin)**

J. B. McDIARMID, *Executive Officer*, 226 Denny Hall

DEGREE: Bachelor of Arts

For an undergraduate major 36 credits are required, at least one half of which must be in upper-division courses. In addition, Latin 103 or equivalent is strongly advised for a major in Greek, and Greek 103 for a major in Latin. Greek 101 to 103 and Latin 101 to 203 do not count for a major or minor in the department.

Major in Greek

For the major in Greek at least 18 credits must be chosen from courses numbered 300 and above. The remaining credits of the 36 must be chosen, with the advice of the department, from the following: upper-division courses in Greek, Latin, classical courses in English, Hist. 201-202, 401, Philosophy 420-421, 465.

Major in Latin

For the major in Latin at least 18 credits (including credits for Latin 309) must be chosen from courses numbered 300 and above. The remaining credits of the 36 must be chosen, with the advice of the department, from the following: upper-division courses in Latin, Greek, classical courses in English, History 201-202, 403, 404, 416J, Phil. 420-421, 465.

Major in Classics

The major of 36 credits must include (1) Greek 201, 202, 262 and at least 9 credits from Greek courses numbered 300 and above; (2) at least 18 credits in Latin from courses numbered 300 and above, subject to the approval of the departmental adviser.

Teaching Major or Minor in Latin in the College of Education

The teaching major is the same as the major in the College of Arts and Sciences. For the minor, 20 approved credits in courses numbered 300 or above, including Latin 309 are required.

DRAMA**GLENN HUGHES, Director, 410 Denny Hall****DEGREE: Bachelor of Arts**

In drama, the major for graduation in the College of Arts and Sciences and for a secondary certificate in the College of Education is the same.

A major requires 63 credits made up of the following courses: 101, 102, 146, 147, 148, 251, 252, 253, 403, 404, 405, 406, 414, 421 or 423, 422, 427, 428, 429, 451, 452, 453, 481 (or 482 or 483), and 497. A senior comprehensive examination is also required. An additional requirement is 25 credits in literature, including Engl. 264, 265, 370, and either 371 or 372.

A minor for the College of Education requires 33 credits made up of the following courses: 101, 102, 146, 147, 148, 251, 252; 6 credits from 403, 404, 405, 406, 414; 6 credits from 427, 428, 429, 451, 452, 453; and 497.

ECONOMICS**J. RICHARD HUBER, Acting Executive Officer, 331 Savery Hall****DEGREE: Bachelor of Arts**

The Department of Economics offers three elective curricula. These are (1) a general major in economics for students who desire a broad economics background with opportunity to develop interests in other social sciences or in related business fields; (2) a course of study providing training for general government service; (3) a teaching major or minor in the College of Education.

General Major

In addition to the general requirements of the College of Arts and Sciences, the departmental requirements are as follows:

1. Econ. 200 and 201, Accounting 150 and 255, 5 credits of statistics (B. Stat. 201, Soc. 223, Math. 113 or Psych. 301).
2. Econ. 301 and 302 plus 25 additional credits to be selected from a minimum of four fields (listed below) other than the field of economic theory.
3. One field of specialization from those listed below must be chosen in which 10 credits (of the 25 credits required) shall be taken. (Students specializing in International Trade shall also take Foreign Trade 310.)

Fields of Specialization

- I. Economic Theory—Econ. 301, 302, 304, 306, 403, 407, 499.
- II. Money, Banking, and Cycles—Econ. 320, 421, 422, 423, 499.
- III. Government Regulation, Public Utilities, and Transportation—Econ. 330, 332, 336, 433, 437, 499.
- IV. Labor Economics—Econ. 340, 345, 411, 442, 443, 446, 499.
- V. Public Finance and Taxation—Econ. 350, 451, 499.
- VI. Economic History—Econ. 361, 362, 363, 499.
- VII. International Trade—Econ. 370, 373, 471, 472, 499.
- VIII. Economic Statistics and Mathematical Economics—(no course at present).
- IX. National Economics—Econ. 390, 492, 493, 499.

CURRICULUM FOR ECONOMISTS IN GOVERNMENT SERVICE

(Intended to train students for professional ratings as economists or statisticians in government.)

JAMES K. HALL, Adviser, 318 Savery Hall

The Department of Economics, in cooperation with the College of Business Administration, the Department of Political Science, the Department of Sociology, and the Department of Psychology, has outlined a curriculum to meet the growing need for trained men and women in government service.

Basic courses are provided in the social sciences during the first three years of undergraduate work to equip selected students possessing a high order of scholarship with a sound philosophy of government and with a scientific attitude and method of approaching social and economic problems. Not later than the end of the third year the student will select a field of interest for specialization in the fourth and graduate years.

Students must maintain a grade standard of not less than 3.0 ("B").

At the beginning of the third year the student majoring in the curriculum in government service shall consult with his adviser in the selection of a program suited to his objectives. The adviser will in effect be the major professor in whose field the student will concentrate. At the end of the fourth year a bachelor of arts degree with a major in economics will be awarded. At the successful conclusion of the fifth year a certificate of completion of the course in government service will be granted.

The following course requirements, in addition to the graduation requirements of the College of Arts and Sciences, are indicated for each year of the curriculum.

FIRST AND SECOND YEARS

In meeting the general requirements of the College of Arts and Sciences, courses meeting Group I requirements should include Speech 120. In addition, courses meeting Group II requirements should include Soc. 110 or 310, Hist. 241, Pol. Sci. 100, Psych. 100.

Other requirements are Econ. 200 and 201, Accounting 150, 151 and 255, and Statistics 201.

THIRD AND FOURTH YEARS

Econ. 301, 302, 320, 330, 332, 340, 350, 370, 390; Pol. Sci. 460 (Constitutional Law); 471 (Administrative Management); 376 (State and Local Government and Administration); 472 (Administrative Law).

FIFTH YEAR

In the fifth year the program of the student will be planned with reference to the student's special objective and needs. If possible, the course work for the student in his fifth year will be so arranged as to provide a quarter of internship with some governmental agency.

The work done in the fifth year may be applied toward a master's degree and those who have met all the requirements for that degree by the end of the fifth year will receive it at that time.

Teaching Major or Minor in the College of Education

Students choosing economics as either their teaching major or minor should consult with the curriculum adviser of the department of economics with regard to a proper selection of courses. For a major the requirements are the same as those for general economics majors. For a minor 25 credits are required, including Econ. 200 and 201, and three upper-division courses from three different fields of specialization.

ENGLISH

Composition and Advanced Writing, English Language and Literature, and General Literature

ROBERT B. HEILMAN, *Executive Officer*, 115 Parrington Hall

DEGREE: Bachelor of Arts

Note: Engl. 101, 102, and 103 may not be counted for a major or minor. A major in English requires 50 credits.

For students concentrating in literature the minimum of 50 credits shall include courses 257 or 258; 351; 370; 368 or 344; 377 or 374; 361 or 362 or 363. The required 50 credits shall include an additional 10 credits earned in courses which continue two of the upper-division courses in the preceding list. The remaining credits may be secured in upper-division courses in literature, advanced writing, and foreign literature in translation.

For students concentrating in advanced writing, the minimum of 50 credits shall include courses 258; 264 or 370; 377 or 374; 448 or 449; 404 or 406 or 466; at least 6 credits from the sequences of 251, 252, 253; 261, 262, 263; 328, 329, 330; 277, 278, 279; and elective credits in advanced writing, English literature, or related fields. Fifteen of these elective credits shall be in advanced writing courses numbered above 300, and 10 of these 15 credits shall be in consecutive courses.

Professional certification for secondary school teaching requires, as a part of or in addition to the above major, Educ. 375H; Speech 240; Engl. 417 or 387; and 3 credits in advanced writing. A 2.2 grade-point average in upper-division English is required.

Two minors are offered students desiring a secondary certificate. The first minor requires 36 credits: viz., Speech 240; Engl. 417 or 387; at least 3 credits in advanced writing; and electives in literature (including Shakespeare and nineteenth-century English and American literature) to complete the number of required credits. The second minor requires 24 credits: viz., Speech 240; one course each in advanced writing and literature; and sufficient credits to complete the required number, preferably including one of these sequences: (1) 264, 265, 266; (2) 257, 258 and 387 or 417.

Requirements for a major in general literature are: (1) reading command of one foreign language, ancient or modern; (2) 20 credits in General Literature 300, 301, 302 and 450, or equivalents; and (3) a minimum of 30 credits in English and other courses selected with the adviser to make a coherent program.

Preparatory to his major, the student must earn 18 credits in lower-division courses in either English, Latin, Far Eastern, or Romance literature.

FAR EASTERN AND SLAVIC LANGUAGES AND LITERATURE

GEORGE E. TAYLOR, *Executive Officer*, 406 Thomson Hall

DEGREE: Bachelor of Arts

Majors of three types are offered:

1. A general major requires Far Eastern 110 or 310; an additional 45 credits in Far Eastern subjects (not including language courses, which are optional); and a strong concentration of elective credit in some one of the social sciences or humanities.

2. A major in a special Far Eastern field requires Far Eastern 110 or 310; 30 credits in either the Japanese, Korean, Chinese, or Russian language; 15 credits in other Far Eastern subjects; and a concentration of 20 or more credits in some one of the social sciences or humanities.

3. A linguistic major requires Far Eastern 110 or 310; 45 credits in Japanese, Chinese, or Russian; and 20 credits in courses dealing with the civilization and history of the people by whom the elected language is spoken and of the Far East in general. This major is offered primarily for students planning to enter professional language work or to continue the studies in Far Eastern languages or literature in the graduate school. Additional courses required as preparation for graduate work should be selected with the assistance of the department adviser.

Teaching Minor in College of Education

For a teaching minor in Far Eastern and Russian studies, the following courses must be presented: F.E. 110 or 310; 5 credits selected from F.E. 422J, 447, 457; one course from F.E. 240, 241, 242, 243, 443, 478; and 3 or 5 credits of approved electives so as to make a total of 18 credits.

A grade-point average of 2.2 in the Far Eastern courses is required for a teaching minor.

FISHERIES

R. VAN CLEVE, *Director*, Fisheries Center

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 115, subject to the approval of the school.

At least 42 credits must be completed in fisheries courses for the major under any option.

Prescribed Curriculum

DEGREE: Bachelor of Science in Fisheries

There is required for graduation from the School of Fisheries a grade-point average of 2.5 in fisheries courses and in all other courses.

FIRST YEAR†

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Engl. 101. Composition... 3		Engl. 102. Composition... 3		Engl. 103. Composition... 3	
Zool. 111. Animal Biology 5		Zool. 112. General Zool... 5		*Chem. 113. Qual. Anal... 5	
Chem. 111 or 115. General 5		Chem. 112 or 116. General 5		Fish. 110 1	
Fish. 108 1		Fish. 109 1		‡Electives 7	
P.E. 110 or 175. Health Ed. 2		Electives 2		P.E. Activity 1	
P.E. Activity 1		P.E. Activity 1		Air, Mil., or Nav. Sci. 2 or 3	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3			
	19 or 20		19 or 20		19 or 20

SECOND YEAR†—Options A and B

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
German or French 5		German or French 5		Zool. or Fish. (See	
Zool. or Fish. (See Options		Zool. or Fish. (See		Options A or B) 5	
A or B) 5		Options A or B) 5		Math. 113, Chem. 361, or	
Math. 104 or Chem. 231		Math. 104 or 105, or		Chem. 221 (See Options	
(Organic). (See		Chem. 232 5		A or B) 5	
Options A or B) 5		P.E. Activity 1		Electives 5	
P.E. Activity 1		Air, Mil., or Nav. Sci. 2 or 3		P.E. Activity 1	
Air, Mil., or Nav. Sci. 2 or 3				Air, Mil., or Nav. Sci. 2 or 3	
	19 or 20		18 or 19		18 or 19

SECOND YEAR†—Option C

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 326 5		Chem. 327 5		Physics 101 or 104 5	
Math. 152 5		Math. 153 5		Foreign Language 5	
G. E. 101 5		G.E. 102 5		Microbiol. 301 5	
P.E. Activity 1		P.E. Activity 1		P.E. Activity 1	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3	
	18 or 19		18 or 19		18 or 19

THIRD AND FOURTH YEARS

One of the following options should be chosen, for each of which the following further requirements are made. The School of Fisheries should be consulted for choice of electives and modification of requirements. A student should decide between Option A and B before the beginning of the junior year; selection of Option C should be made by the last quarter of the freshman year.

All options require 10 credits in the social sciences, not more than 102 credits in any two departments, and a minimum of 42 credits in fisheries among which shall be included Fish. 108, 109, 110, 401, 495.

Option A. *Commercial Fishery Management*. Fish. 405 or 406, 425, 426, 427, 456, and 457; Math. 104, 105, 251, 252 (or 307, 308, 309), 313 or 385; Zool. 456.

Option B. *Freshwater Fishery Management*. Fish. 405 or 406, 451, 452, 453; Chem. 361 or 465, 466, and 467; Microbiol. 301; Zool. 456, 473; Math. 104, 105, 313 or 385.

Option C. *Fisheries Technology*. Fish. 484, 485, 486; Microbiol. 431; Physics 102 and 103 or 105 and 106; Chem. 231, 232, 241, 242; Math. 313 or 385.

* No credit to students who have had 116.

† These requirements are listed in the order in which it is recommended that they be taken. They may be postponed and subjects required in the third and fourth years may be substituted, on approval by the School of Fisheries.

‡ Math. 151 should be taken by students in Option C. Exemption from Math. 151 may be obtained by passing an examination in trigonometry.

Recommended Electives: In all options any fisheries, zoological, or oceanographical course may be counted as an elective. The following additional electives are recommended: Econ. 200 (General Economics), B.L. 207 (Bus. Law), Prod. 301, B.A. 365, Chem. 221, 326, 327 (Quantitative Analysis); 232, 333 (Organic); 465, 466, 467 (Biological); Math 385 (Biometrics), 251, 252, 253 or 307, 308, 309 (Calculus); Microbiol. 301 (General), 431 (Food Spoilage); Physics 101, 102, 103, or 104, 105, 106 (General); Geol. 101 (Survey), or 206 (Physiography), or 207 (Historical); Bot. 111, 112, or 113 (Elementary); Geog. 107 (Economic), 111 (Weather and Climate); Speech 120, Phil. 120, Psych. 336 (Industrial), H.E. 300 (Nutrition).

FOOD TECHNOLOGY†

H. C. DOUGLAS, *Chairman*, H319 Health Sciences Building, 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

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 111 or 115. General	5	Chem. 112 or 116. General	5	*Chem. 113. Qual. Analysis	5
Engl. 101. Composition	3	Engl. 102. Composition	3	Physics 103. General	5
Physics 101. General	5	Physics 102. General	5	Math. 101 or 104	5
P.E. 110 or 175.		Elective	2	Engl. 103. Composition	3
Health Ed.	2	P.E. Activity	1	P.E. Activity	1
P.E. Activity	1	Air, Mil., or Nav. Sci.	2 or 3	Air, Mil., or Nav. Sci.	2 or 3
Air, Mil., or Nav. Sci.	2 or 3				
	18 or 19		18 or 19		21 or 22

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 231. Organic	3	Chem. 232. Organic	3	Chem. 221. Quantitative	
Chem. 241. Organic Lab.	2	Chem. 242. Organic Lab.	2	Analysis	5
Zool. 111. General or		Zool. 112. General or		Social Science Elective	5
Bot. 111. Elementary	5	Bot. 112. Elementary	5	Electives	5
Group Option		Group Option		P.E. Activity	1
(a) Math. 104 or 105	5	(a) Math. 105 or 106	5	Air, Mil., or Nav. Sci.	2 or 3
(b) H.E. 115	3	(b) H.E. 315	5		
P.E. Activity	1	Electives	2		18 or 19
Air, Mil., or Nav. Sci.	2 or 3	P.E. Activity	1		
	16 to 19	Air, Mil., or Nav. Sci.	2 or 3		
			20 or 21		

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 465. Biochem.	3	Chem. 351. Elem. Physical	4	Chem. 352. Elem. Physical	4
Micro. 300	6	Chem. 466. Biochem.	3	Chem. 360. Food Anal.	4
Group Option		Group Option		Bot. 461. Yeasts & Molds	5
(a) Electives	6	(a) Electives	9	Group Option	
(b) H.E. 307. Nutrition	5	(b) H.E. 407. Nutrition	3	(b) †H.E. 307. Nutrition	5
	14 or 15	Electives	6	(a) †H.E. 415. Food Prep.	3
			14 or 20		16 or 18

* No credit to students who have had 116.

† In College of Arts and Sciences.

‡ Offered alternate years.

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Microbiol. 430. Industrial.	5	Microbiol. 431. Industrial.	5	Microbiol. 499. Research.	5
*Optional	5	*Optional	5		
<i>Group Option</i>		<i>Group Option</i>		<i>Group Option</i>	
(a) Chem. Engr. 481		(a) Chem. Engr. 482.		(a) Electives	5
Industrial	5	Industrial	5	Chem. Engr. 483.	
(b) Elective	5	(b) Elective	5	Industrial	5
	15		15	(b) Electives	10
					15

GENERAL LITERATURE

See English, page 127

GENERAL STUDIES

W. G. LUTEX, *Director*, 213 Denny Hall

DEGREE: Bachelor of Arts or Bachelor of Science

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

The requirements for graduation in General Studies are:

1. The early selection, with the help of an adviser, of a special field or subject of interest as a major to focalize and give direction to the student's work, and the formulation of an approved schedule of courses.

2. Completion of at least 70 credits in the chosen field or subject. The bachelor of arts degree is awarded when the major is in Group I or II; the bachelor of science, when the major is in Group III.

3. A thesis giving evidence of the student's competence in his major field.

In addition to the flexible programs made out to supply the special needs of individual students, there are at present organized curricula for Advertising and Art, Anthropology of the Americas, Art and Ceramics, Home Relations, Latin-American Studies, Literature and Society, Music for Radio, Nursery Education, Personnel Work (for Social and Religious Groups), Public Relations, 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 offered under General Studies Division and is directed by an interdepartmental committee: Professor A. Vargas-Baron (Romance Languages), Chairman; and department representatives as follows: N. G. Esteves (Romance Languages); E. Gunther (Anthropology); N. S. Hayner (Sociology); W. S. Holt (History); H. H. Martin (Geography); H. L. Nostrand (Romance Languages); L. G. Mathy (Economics); M. von Brevern (Political Science); Director of General Studies Division, ex officio.

Students in this major must meet the requirements for graduation in General Studies Division, and include the following courses as a minimum: Anthropology 215 (South America) or Anthropology 217 (Ancient Mexico and Central America); Econ. 373 (Foreign Trade of Latin America); Geog. 405 (South America) or Geography 409 (Caribbean); Hist. 291-292 (Latin America and Caribbean); Pol. Sci. 323 (International Relations of Western Hemisphere); Soc. 456 (Latin-American Institutions); Spanish 301, 302, 303 (Advanced Composition and Conversation); Spanish 304, 305, 306 (Survey of Spanish Literature); Portuguese 300, or equivalent (Intensive Reading); plus 12 elective credits in Latin-American Literature, including

*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.

Spanish 315, 316, 317 (Latin-American Literature in English) or Portuguese 415, 416, 417 (Brazilian Literature and Culture in English).

Note: Students interested in this major should be sure to check prerequisites for the above courses in each respective department's course listings in the *Catalogue*.

GEOGRAPHY

HOWARD H. MARTIN, Executive Officer, 406 Smith Hall

DEGREE: Bachelor of Arts

Major in Geography

A major requires 50 credits including Geog. 100, 107, or 170; 102; 111; 202; 403, 404; 405 or 409; 406 or 407. Electives should be approved by the department.

Teaching Major or Minor in Geography in the College of Education

A major is the same as in the College of Arts and Sciences, except that courses 210 and 425 replace 102.

A first minor requires 26 credits including courses 100 or 107; 202, 210, 425, 470.

GEOLOGY

G. E. GOODSPEED, Executive Officer, 42 Johnson Hall

Students may offer either the elective curriculum or the prescribed curriculum. A grade-point average of at least 2.5 shall be required in the beginning sequence, 205, 206, 207, and 308, and for admission to any other advanced course in geology. A grade-point average of 2.5 in all courses shall be required of majors for graduation. Majors will be required each quarter to read two books of outstanding merit from a list prepared by the department.

Elective Curriculum

DEGREE: Bachelor of Science

Majors offering the elective curriculum must fulfill the group requirements of the College of Arts and Sciences and should conform closely with respect to background courses as listed under the prescribed curriculum. The following courses are required, unless the department grants permission to offer substitutes. In general the distribution should be as follows:

SECOND YEAR		THIRD YEAR		FOURTH YEAR	
	<i>Credits</i>		<i>Credits</i>		<i>Credits</i>
Geol. 205. Rocks & Minerals	5	Geol. 308. Structural.....	5	Geol. 300. Hist. of Geol..	3
Geol. 206. Elem. Physiog..	5	Geol. 323. Optical Miner...	5	Geol. 332 or 330. Invert.	
Geol. 207. Historical Geol.	5	Geol. 324. Petrog.-Petrol...	5	Paleon. or Gen. Paleon..	5
Geol. 221. Mineralogy....	5	Geol. 325. Petrog.-Petrol...	5	Geol. 361. Stratig.	5
P.E. Activity	3		20	Geol. 412 or 413. Physiog.	
Air, Mil., or Nav. Sci. 6 or 9				U. S.	5
					18
	29 or 32				

For those who are interested in stratigraphy or oil geology, the following additional courses are recommended:

THIRD YEAR		FOURTH YEAR	
	<i>Credits</i>		<i>Credits</i>
Geol. 330. General Paleon.	5	Geol. 344. Field Methods.....	5
Geol. 433. Mesozoic Geol.	5	Geol. 426. Sediment. Petrog.	3
Geol. 443. Advanced Structural.....	5		
	15		8

For those who are interested in ore deposits, the following additional courses are recommended:

THIRD YEAR		FOURTH YEAR	
	<i>Credits</i>		<i>Credits</i>
Geol. 344. Field Methods.....	5	Geol. 427. Ore Deposits	5
Mining 421. Elementary Mining.....	3	Geol. 429. Advanced Ore Deposits.....	3
Met. 301. Fire Assaying	3	Geol. 443. Advanced Structural.....	5
	11		13

Prescribed Curriculum

DEGREE: Bachelor of Science in Geology

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 111 or 115. General 5		Chem. 112 or 116. General 5		*Chem. 113. Qual. Analysis 5	
Math. 151. Freshman		Math. 152. Freshman		Math. 153. Freshman	
Engr. 5		Engr. 5		Engr. 5	
G.E. 101. Engr. Drawing. 3		G.E. 102. Engr. Drawing. 3		G.E. 103. Draft. Problems 3	
Engl. 101. Composition... 3		Engl. 102. Composition... 3		P.E. Activity 1	
P.E. Activity 1		P.E. Activity 1		Electives 2	
Air, Mil., or Nav. Sci..2 or 3		Air, Mil., or Nav. Sci..2 or 3		Air, Mil., or Nav. Sci..2 or 3	
19 or 20		19 or 20		18 or 19	

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Geol. 205. Rocks & Minerals 5		Geol. 206. Elem. Physiog.. 5		Geol. 207. Hist. Geology.. 5	
Physics 101. General.... 5		Physics 102. General.... 5		Geol. 221. Mineralogy.... 5	
Electives 3		Engl. 103. Composition... 3		Physics 103. General.... 5	
P.E. Activity 1		G.E. 121. Plane Surveying 3		P.E. Activity 1	
Air, Mil., or Nav. Sci..2 or 3		P.E. 175 (Men) Health Ed.2		Air, Mil., or Nav. Sci..2 or 3	
18 or 19		P.E. Activity 1		18 or 19	
		Air, Mil., or Nav. Sci..2 or 3			
		21 or 22			

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Geol. 308. Structural Geol. 5		Geol. 324. Petrography... 5		Geol. 325. Petrography.. 5	
Geol. 323. Optical Miner.. 5		Geol. 330. Paleontology... 5		Geol. 332. Invertebrate	
Group II Electives..... 5		Geol. 361. Stratigraphy... 3		Paleontology 5	
15		Group I Electives..... 3		Geol. 344. Field Methods.. 5	
		16		15	

Summer Field Course—Geology 400S—15 credits

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Geol. 300. Hist. of Geol... 3		Geol. 427. Ore Deposits... 5		Professional Electives ....10	
Group I Electives 5		Group I Electives..... 2		Foreign Language 5	
Group II Electives..... 3		Group II Electives..... 2		15	
Foreign Language 5		Foreign Language 5			
16		14			

Adherence to this program, including the Summer Field Course, enables a student to graduate at the end of the Winter Quarter of the fourth year. It is further suggested that Group I and Group II requirements be met during the summer school between the first and second (or the second and third) years, in order to allow time for additional professional electives which would apply toward graduate work.

Teaching Major or Minor in the College of Education

A major requires 36 credits, including courses 205, 206, 207, 412, 413.

A minor requires 20 credits, including courses 101, 205, 206, approved electives.

GERMANIC LANGUAGES AND LITERATURE

CURTIS C. D. VAIL, *Executive Officer*, 111 Denny Hall

DEGREE: Bachelor of Arts

For the major 39 credits are required, including courses in 207, 300, 301, 302, 303, 401, 402, and 403. Majors are not permitted to count scientific German, courses in English translation, or first-year German.

For the minor, 29 credits are required beyond first-year German and must include the courses required for the major.

Students preparing for library or other work not requiring knowledge of the spoken language may substitute literary courses in German (not courses offered in

* No credit to students who have had 116.

translation, however) in lieu of the departmental major requirements, German 207, 300, 301, 302, 303, 401, 402, and 403. These latter are demanded of prospective teachers.

Students who qualify may, if they desire, fulfill the requirements of the junior year through study abroad in a university of recognized standing.

Teaching Major or Minor in the College of Education

For these requirements, the student should consult the adviser in the College of Education or in the Department of Germanic Languages and Literature.

HISTORY

WILLIAM STULL HOLT, *Executive Officer*, 308 Smith Hall

DEGREE: Bachelor of Arts

Majors in history shall offer for the Bachelor of Arts degree 50 credits in history, of which at least 25 credits must be in upper-division courses. History 101 and 102 (Medieval and Modern European History), and a survey in American history, either History 241 or 341, 342 and 343, 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 101 and 102, 201-203, 241, and 464. 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 101 and 102, 241, and 464. 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 L. 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 40 credits in the humanities and social sciences is necessary for graduation in all curricula. This includes certain courses listed in the prescribed curricula.

Courses for Students in Other Departments

Recommended electives for nonmajors are: 110, 120 or 125, 130, 231, 240 or 343 or 347, 248, 300 or 307, 321, 322, 332, 350 or 354, 356.

For a *Home Economics Minor* at least 32 credits in home economics, including the following, are required: 110 or 115, 120 or 125, 130 or 134, 215, 234, 240 or 343 or 347, 300 or 307, 350 or 354, 356, 457.

For a *Textile and Clothing Minor*: 125, 134, 234, 334, 347, 350, 356, 434, and pre-requisites.

For each of these minors a grade-point average of 2.2 in home economics is required.

Suggested Home Economics courses for those preparing to teach in the field of human growth and relations: 110, 231, 300 or 307, 347, 350 or 354, 356, and 457.

Suggested Home Economics courses for those preparing to teach art: 125 and 347 (or 343), 130 or 134, 321, 322, 329, 332, 426.

Suggested Home Economics courses for those in nursery school education: 110, 130 or 134, 300 or 307, 350 or 354, 356, and 457.

Nonprofessional Curricula

DEGREE: Bachelor of Science

General Major. Those who wish a broad background in home economics without specialization will include the following with electives approved by the school.

FIRST YEAR

	Credits
Engl. 101, 102, 103. Composition.....	9
H.E. 101. Orientation	1
H.E. 115. Food	3
H.E. 125. Textiles	3
H.E. 134. Clothing	5
P.E. 110. Health Ed.	2
Chem. 101-102. General	10
Art 109. Design	3
Electives	9
P.E. Activity	3
	<hr/> 48

SECOND YEAR

	Credits
H.E. 215. Meal Planning.....	3
H.E. 234. Costume Design.....	3
H.E. 248. House Management.....	3
Soc. 110. Survey	5
Psych. 100. General	5
Econ. 200. Introduction.....	5
Zool. 208. Physiology	5
Electives	16
P.E. Activity	3
	<hr/> 48

THIRD YEAR

	Credits
H.E. 307. Nutrition.....	5
H.E. 347. Home Furn.....	5
H.E. 348. Home Management House.....	2
H.E. 354. Family Econ.....	5
H.E. 356. Family Relationships.....	3
N.S. 305. Child Development.....	3
Electives	22
	<hr/> 45

FOURTH YEAR

	Credits
H.E. 457 Child Care.....	3
Electives	42
	<hr/> 45
Suggested electives:	
Physics 190, Microbiol. 301, Journalism, Education, Arch. 105, Soc. 353, Nursery School.	

DEGREE: Bachelor of Arts

Textiles, Clothing, and Art Major

FIRST YEAR

	Credits
Engl. 101, 102, 103. Composition.....	9
H.E. 101. Orientation	1
H.E. 125. Textiles	3
H.E. 134. Clothing	5
Chem. 101-102. General	10
Art 105. Drawing	3
Art 109, 110. Design	6
P.E. 110. Health Educ.	2
Electives	6
P.E. Activity	3
	<hr/> 48

SECOND YEAR

	Credits
H.E. 234. Costume Design.....	3
Hist. 101, 102. Medieval Europe.....	10
Soc. 110. Survey	5
Psych. 100. General	5
Econ. 200. Introduction.....	5
Art 106. Drawing	3
Art 111. Design	3
Art 151. Figure Sketching.....	1
Electives	10
P.E. Activity	3
	<hr/> 48

THIRD YEAR

	Credits
H.E. 334, 434. Costume Design.....	6
H.E. 347. Home Furn.....	5
H.E. 354. Family Econ.....	5
H.E. 356. Family Relationships.....	3
Phil. 100. Introduction	5
Art 369, 370. Costume Design and Illustration	4
Electives	17
	<hr/> 45

FOURTH YEAR

	Credits
H.E. 425. Adv. Textiles.....	3
H.E. 433. Hist. of Costumes.....	5
6 credits from:	
H.E. 321 (2), 322 (2) Needlecraft,	
H.E. 329 (2) Hand Weaving,	
H.E. 426 (3) Hist. of Textiles	
<i>Option</i>	
10 further credits in art	
or	
10 credits in upper-division business administration	
Electives	21
	<hr/> 45

Suggested electives:

H.E. 110 or 115, 248, 300 or 307, 435, 436, 457 or N. Sch. 305, Arch. 105.

Professional Curricula

TEACHER TRAINING FOR VOCATIONAL EDUCATION

DEGREE: Bachelor of Science in Home Economics

In this curriculum a major and one minor are included in home economics and a second minor is selected in another department. For a Three-Year Secondary Certificate a teacher must have 225 credits with 28 in education and 15 in contemporary social problems including Washington State History. Students must maintain a 2.2 grade-point average.

FIRST YEAR

	Credits
Engl. 101, 102, 103. Composition.....	9
H.E. 101. Orientation.....	1
H.E. 115. Food.....	3
H.E. 125. Textiles.....	3
H.E. 134. Clothing.....	5
Art 109. Design.....	3
Chem. 101-102. General.....	10
P.E. 110. Health Ed.....	2
Nurs. Ed. 100. Home Nursing.....	3
Electives.....	6
P.E. Activity.....	3
	48

SECOND YEAR

	Credits
H.E. 215. Meal Planning.....	3
H.E. 234. Costume Design.....	3
H.E. 248. Home Management.....	3
Psych. 100. General.....	5
Econ. 200. Introduction.....	5
Soc. 110. Survey.....	5
Educ. 101. Orientation.....	2
Zool. 208. Physiology.....	5
Electives to include minor and humanities.....	14
P.E. Activity.....	3
	43

THIRD YEAR

	Credits
H.E. 307. Nutrition.....	5
H.E. 315. Adv. Food.....	5
H.E. 338. Clothing for Family.....	3
H.E. 347. Home Furn.....	5
H.E. 354. Family Economics.....	5
H.E. 356. Family Relationships.....	3
Educ. 209. Psych. Ed.....	3
Educ. 370. H. S. Intro.....	5
Educ. 375NA. Special Methods.....	3
Microbiol. 301. Bacteriology.....	5
Electives (minor and humanities).....	3
	45

FOURTH YEAR

	Credits
H.E. 348. Home Management House.....	3
H.E. 457. Child Nutrition.....	3
H.E. 495. Special Problems.....	3
Nurs. School 305. Child Development.....	3
Educ. 230. State Manual.....	2
Educ. 360. Prin. Ed.....	3
Educ. 371-372. Cadet Teaching.....	8
Educ. 390. Meas. Ed.....	2
Educ. 410. Ed. Soc.....	3
Hist. 464. History of Washington.....	5
Electives (minor and humanities).....	10
	45

FIFTH YEAR

	Credits
Electives.....	45
Suggested electives:	
H.E. 322, 407, 425, 434, 454, Arch. 105,	
Physics 190, Chem. 230, Soc. 353.	

This curriculum is planned to work toward the proposed plan of the State Department of Education for a qualifying certificate at the end of the fourth year.

INSTITUTION ADMINISTRATION

DEGREE: Bachelor of Science in Home Economics

FIRST YEAR

	Credits
Engl. 101, 102, 103. Composition.....	9
H.E. 101. Orientation.....	1
H.E. 115. Food.....	3
H.E. 127. Textiles.....	3
Chem. 101-102. General.....	10
Art 109. Design.....	3
P.E. 110. Health Ed.....	2
Psych. 100. General.....	5
Electives.....	9
P.E. Activity.....	3
	48

SECOND YEAR

	Credits
Chem. 230. Organic.....	5
Soc. 110. Survey.....	5
Econ. 200. Introduction.....	5
H.E. 130, 134, or 231. Cloth. Construction or Selection.....	5 or 2
H.E. 215. Meal Planning.....	3
H.E. 248. Home Management.....	3
Physics 190. Home.....	5
Zool. 208. Physiology.....	5
Electives.....	9-12
P.E. Activity.....	3
	48

THIRD YEAR

	Credits
H.E. 307, 407. Nutrition.....	8
H.E. 315. Adv. Food.....	5
H.E. 347. Home Furn.....	5
H.E. 348. Home Management House.....	2
H.E. 354. Family Economics.....	5
H.E. 356. Family Relationships.....	3
N.S. 305. Child Development.....	3
Microbiol. 301. Bacteriology.....	5
Electives	9
	<hr/> 45

FOURTH YEAR

	Credits
H.E. 372, 472, 473, 474.....	16
H.E. 408. Diet Therapy.....	3
H.E. 457. Child Nutrition.....	3
Educ. 375NB. Teach. Inst. Admin.....	5
Chem. 361. Biological.....	5
Electives	13
	<hr/> 45

For membership in the American Dietetic Association, the student must follow this curriculum with a year's training in an approved administrative or hospital dietitian course.

TEXTILES, CLOTHING, AND ART

DEGREE: Bachelor of Arts in Home Economics

FIRST YEAR

	Credits
Engl. 101, 102, 103. Composition.....	9
H.E. 101. Orientation.....	1
H.E. 125. Textiles.....	3
H.E. 134. Clothing.....	5
Chem. 101-102. General.....	10
Art 105. Drawing.....	3
Art 109, 110. Design.....	6
P.E. 110. Health Ed.....	2
Electives	6
P.E. Activity	3
	<hr/> 48

SECOND YEAR

	Credits
H.E. 234. Costume Design.....	3
Hist. 101, 102. Medieval Europe.....	10
Soc. 110. Survey.....	5
Psych. 100. General.....	5
Econ. 200. Introduction.....	5
Art 106. Drawing.....	3
Art 111. Design.....	3
Art 151. Figure Sketching.....	1
Electives	10
P.E. Activity	3
	<hr/> 48

THIRD YEAR

	Credits
H.E. 334, 434. Costume Design.....	6
H.E. 347. Home Furnishing.....	5
H.E. 354. Family Economics.....	5
H.E. 356. Family Relationships.....	3
Art 369, 370, 371. Costume Design and Illustration.....	6
Phil. 100. Introduction.....	5
Electives	15
	<hr/> 45

FOURTH YEAR

	Credits
H.E. 425. Adv. Textiles.....	3
H.E. 426. Historic Textiles.....	3
H.E. 433. Hist. of Costume.....	5
H.E. 435, 436. Adv. Costume Design.....	10
Electives:	
Art to complete 30 credits.....	8
Other	17
	<hr/> 45

Suggested electives:

H.E. 110 or 115, 248, 300 or 307, 321, 322, 329, 457 or N. Sch. 305, Arch. 105.

DESIGN FOR APPAREL MANUFACTURING

DEGREE: Bachelor of Arts

A curriculum which correlates work in the School of Home Economics, the School of Art and the College of Business Administration is offered to qualified students to equip them with the knowledge and skills essential to designing for apparel manufacturing. Practical experience secured by working in factories is required. Skill in typing is highly desirable.

Freshman and sophomore requirements same as for textile, clothing, and art major.

THIRD YEAR

	Credits
H.E. 334, 434. Costume Design.....	6
H.E. 347. Home Furn.....	5
H.E. 354. Family Economics and Finances.....	5
H.E. 356. Family Relationships.....	3
Art 369, 370. Costume Design and Illustration.....	4
Mktg. 301, 381. Marketing and Retailing.....	10
Art 329. Appreciation of Design.....	2
Electives (Soc. Sci. and Humanities).....	10
	<hr/> 45

FOURTH YEAR

	Credits
H.E. 425. Adv. Textiles.....	3
H.E. 426. Historic Textiles.....	3
H.E. 433. Hist. of Costume.....	5
H.E. 435, 436. Adv. Costume Design.....	10
B.A.	10-15
From Acct. 150, Fundamentals (3);	
B.A. 460, Human Relations in	
Industry (5); Pers. 310, Personnel	
Mgmt. (5); Mktg. 461, Retail	
Mgmt. Probs. (5); Mktg. 421,	
Mkt. Analysis (5)	
Prod. 380. Field Work in Prod.....	6
Elective	1
	<hr/> 38-43

Suggested electives:

H.E. 110 or 115, 248, 300 or 307, 457 or N. Sch. 305, Arch. 105.

COMBINATIONS FOR SPECIALIZED WORK

DEGREE: Bachelor of Science in Home Economics

For the field of work below, the required home economics courses with their science prerequisites and supporting subjects are: 101, 115, 215, 248, 307, 315, 347, 348, 354, 356, 407, and 457. Suggested electives are: H.E. 130 or 134, and Arch. 105.

Home Economics and Business. Students interested in this field will select 12 additional credits from the following: H.E. 316, 408, 415; Chem. 361, 465, 466; Speech 120; and journalism (6-11 credits).

Journalism and Home Economics. For a major in Home Economics and a minor in journalism, the courses listed above plus Journ. 200, 201, 220, 300, 303, 341, 498 or 382, 499 are required. For a minor in home economics with a major in journalism the required courses are H.E. 110 or 115, 300, 134 or 231, 343, 354, and one of the following courses: 356 or 457.

Nutritionist with Social or Public Health Agency. The requirements for this field are: H.E. 372, 408; Nursery School (2 credits); and at least 9 credits from the following courses in the Graduate School of Social Work: 300, 301, 302.

JOURNALISM

H. P. EVEREST, *Director*, 202 Lewis Hall

DEGREE: Bachelor of Arts

The School of Journalism offers professional training in one of three specialized sequences in a third-year curriculum devoted solely to work in the major field. First- and second-year requirements have been selected to provide a broad cultural foundation for the third-year professional work. In the fourth year the student is almost entirely free for choice of electives and advanced specialization.

FIRST- AND SECOND-YEAR REQUIREMENTS

Credits		Credits	
Engl. 101	3	Geog. 170. (Editorial and Public Relations Majors)	5
Engl. 102. (Special Journ. Section)	3	Hist. 102. (Editorial and Public Relations Majors)	5
P.E. 110 or 175	2	Pol. Sci. 353. (Editorial and Public Relations Majors)	3
Engl. 265	5	B.A. 101. (Advertising and Management Majors)	5
Psych. 100	5	Art 105. (Special Journ. Section) (Advertising and Management Majors)	3
Pol. Sci. 100	5	Marketing 301. (Advertising and Management Majors)	5
Econ. 200	5	Journ. 200. (Newsriting)	5
Hist. 241	5	Journ. 201. (Copyreading)	3
Speech 120 or 240	5	Journ. 220. (Fundamentals of Advertising)	3
Soc. 110	3	Electives	13
Elective Lab. Sci.	5		
Physics 100 (or equivalent)	5		
Sec. Training 10 (or typing speed of 45 words per minute)	0		

In addition, freshman and sophomore students must complete 6 credits in physical education activity courses, and men students must fulfill the military science requirements of the University.

Transfers. Students planning to transfer to the School of Journalism from other schools are urged to do so not later than the beginning of their last quarter as sophomores. This will enable them to satisfy premajor requirements and enroll as regular third-year majors the following fall. Those unable to do this will be asked to satisfy premajor requirements and take senior electives in the junior year and to take the third-year professional sequence as seniors. Rarely will they be permitted to enter the third-year sequence their first quarter in the University.

Third-Year Requirements

Third-year Journalism is divided into three sequences: Editorial, Advertising and Management, and Public Relations. Majors should decide as early as possible in the sophomore year which sequence they wish to elect.

Admission. Students must have completed 96 academic credits with an over-all grade-point average of at least 2.5. Minimum grades of "B" must be earned in each of the three sophomore journalism courses.

Students not having upper-division standing may be admitted, upon the 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, political science, and sociology, and (3) have had not less than one year's experience in newspaper work or other professional writing.

Graduate Students. 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.

Special Requirements. The third-year course starts at the beginning of the Autumn Quarter and is concluded at the end of the Spring Quarter. A minimum grade-point average of 3.0 must be maintained during this year. No grades or credits will be awarded to students doing satisfactory work until the end of the year. After each quarter, students doing unsatisfactory work will be given such grades and credits as they have earned. They must then select another major. Students who fail to meet the grade requirements of third-year journalism may not repeat the course, except with the special permission of the Director of the School of Journalism.

No elective courses may be taken during this year.

Third-Year Courses of Study

All Sequences. Journ. 300, Work on University Daily; 303, Public Relations; 304, Magazine Article Writing; 310, Photographic Lab.; 311, Typographic Lab.

Editorial Sequence. Journ. 306, Printing Processes; 320, Radio Newswriting; 326, Contemporary Affairs (6 hrs.); 327, Court Reporting; 328, Hist. of Journalism; 329, Law of the Press; 330, Reporting; 333, Social Implications of Journ.; Econ. 353, Public Finance and Taxation; Geog. 477, Urban Geography.

Advertising and Management Sequence. Journ. 340, Advertising Campaigns and Media; 341, Advertising Regulation; 342, Radio Advertising; 346, Advertising Production; 347, Business Office; 348, Advertising Layout; 349, Advertising Copy Writing; 350, Advertising Lab.; 351, Advertising Selling Techniques; 352, Advertising Selling Lab. (4 hrs.); 355, Adv. Advertising Copy Writing; 356, Adv. Advertising Layout; Publication Accounting.

Public Relations Sequence. Journ. 306, Printing Processes; 320, Radio Newswriting; 326, Contemporary Affairs; 330, Reporting; 360, Techniques of Public Relations; Econ. 353, Public Finance and Taxation; 7 credits in social science requirements. Required courses in the social sciences which must be completed in the junior and senior years are: Soc. 223, B. Stat. 201 or Psych. 301; Soc. 442 or Psych. 446; Soc. 443; B.A. 310; B.A. 460; and Econ. 340.

Fourth-Year Requirements

Editorial Sequence. Journ. 400, 401, Editorial Problems; 41 credits in electives.

Advertising and Management Sequence. Journ. 440, Publishing Problems; Mktg. 381, Retailing; 38 credits in electives.

Public Relations Sequence. Journ. 460, Problems in Public Relations; 19 credits in social science requirements; 10 credits in social science electives; 14 credits in electives.

Special Courses

College of Education Teaching Major. Journ. 200, 201, 220, 300, 303, 306, 310, 311, 328, 329, 333 and 375J all to be scheduled by arrangement with the Director of the School of Journalism. A 3.0 minimum grade average must be maintained in all journalism courses, otherwise credits may be applied only toward a teaching minor.

College of Education Teaching Minor. Journ. 200, 201, 220, 300, 306, 375J to be scheduled by arrangement with the Director of the School of Journalism.

Minor for Home Economics Major. Journ. 200, 201, 220, 300, 303, 306, 341 to be scheduled by arrangement with the Director of the School of Journalism.

General Minor. Journ. 200, 201, 220, and 9 credits to be designated by agreement with the Director of the School of Journalism.

A minimum grade-point average of 2.5 in specified journalism courses is required of all minors.

MATHEMATICS**R. M. WINGER, Executive Officer, 245 Physics Hall**

Prerequisites for any major or minor in the Department of Mathematics are: $\frac{1}{2}$ unit advanced algebra, $\frac{1}{2}$ unit solid geometry in high school or university. No grade lower than "C" in mathematics courses will be accepted for any major or minor.

Students may offer either the elective curriculum or one of the prescribed curricula.

Elective Curriculum**DEGREE: Bachelor of Arts**

For the degree of Bachelor of Arts with a major in mathematics, 48 credits in mathematics are required, including courses 104, 105, 106, 307, 308, 309 and 18 credits in upper-division electives.

Prescribed Curriculum**DEGREE: Bachelor of Science**

For the degree of Bachelor of Science with a major in mathematics, 60 credits in mathematics are required, including courses 104, 105, 106, 307, 308, 309, 414, 415 and 24 credits in upper-division electives which must include two complete sequences from the following three: 417-418-419; 491-492-493; 494-495-496. The additional requirements are: in physics, courses 101, 102, 103 or 104, 105, 106; in Groups I and II, 15 credits each. It is suggested that either French or German be elected.

DEGREE: Bachelor of Science with a major in Mathematical Statistics

The work in mathematical statistics has a threefold purpose:

- (a) The training of professional statisticians.
- (b) Instruction of students who wish to broaden their mathematical studies or who seek a mathematical background for their work in economics, sociology, genetics, psychology, education, etc.
- (c) To conduct research in statistics and provide competent consultation on statistical problems.

To coordinate the three parts of this program and to effect the work of part (c), there has been established within the department a Laboratory of Statistical Research, of which Z. W. Birnbaum is director.

For the degree of Bachelor of Science with a major in mathematical statistics courses 104, 105, 106, 113, 307, 308, 309, 480, 481, 482, 483, 484 are required. The additional requirements in other fields are the same as in the preceding curriculum except that the student's free electives shall include 10 approved credits in applications of statistical methods.

Teaching Major or Minor in the College of Education

For a teaching major 48 credits in mathematics are required, including 104, 105, 106, 307, 308, 309 and 18 credits in approved electives.

For a teaching minor 25 credits in mathematics are required, including 104, 105, 106 and 10 approved upper-division electives.

Math. 111 will not count toward a teaching major or minor.

MEDICAL TECHNOLOGY**LESTER D. ELLERBROOK, Supervisor, Health Sciences Building****DEGREE: Bachelor of Science in Medical Technology**

The course in medical technology is designed to train young men and women as technicians in the laboratories of hospitals and clinics and in research laboratories.

The course at the University of Washington will consist of three years of training in sciences, comprising chemistry, zoology, physics, physiology, anatomy, histology, and microbiology, followed by eighteen months of didactic and practical work under supervision in hospital laboratories. Upon completion of the course the degree of Bachelor of Science in Medical Technology is awarded.

Curriculum

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Engl. 101	3	Engl. 102	3	Engl. 103	3
Chem. 111 or 115.....	5	Chem. 112 or 116.....	5	Zoology 112. General.....	5
Inorganic	5	Inorganic	5	*Chem. 113. Qualitative..	5
Math. 101 or 104.....	5	Zoology 111. General.....	5	Anatomy 301	3
P.E. 110 or 175.....	2	†Electives	2	P.E. Activity	1
P.E. Activity	1	P.E. Activity	1	Air, Mil., or Nav. Sci..2 or 3	3
Air, Mil., or Nav. Sci..2 or 3	3	Air, Mil., or Nav. Sci..2 or 3	3		
	18 or 19		18 or 19		19 or 20

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 231. Organic.....	3	Chem. 232. Organic.....	3	Chem. 221. Quantitative..	5
Lab. 241	2	Lab. 242	2	Zool. 381. Microtechnic...	4
Physics 100. Survey.....	5	Zool. 208. Physiol.....	5	†Electives	6
†Electives	5	†Electives	5	P.E. Activity	1
P.E. Activity	1	P.E. Activity	1	Air, Mil., or Nav. Sci..2 or 3	3
Air, Mil., or Nav. Sci..2 or 3	3	Air, Mil., or Nav. Sci..2 or 3	3		
	18 or 19		18 or 19		18 or 19

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Microbiol. 251. General...	6	Microbiol. 252. Pathogen..	6	Microbiol. 253. Mycol. and	
Psych. 100. General.....	5	†Electives	3	Parasit.	6
‡Biochem. 461	6	‡Biochem. 462	6	Speech 120	5
	17		15	†Electives	4
					15

FINAL 18-MONTH PERIOD

Permission Required

Pathology 321.....	5	Introduction to Medical Technology—20 hrs. lab.	
Pathology 322—325... 6 each		Medical Technology—1 hr. lecture—1 hr. quiz—35 hrs. lab.	
Pathology 326.....	16	Medical Technology—1 hr. lecture—1 hr. quiz—35 hrs. lab.	

METEOROLOGY AND CLIMATOLOGY

PHIL E. CHURCH, *Executive Officer*, 208 Thomson Hall

DEGREE: Bachelor of Science

Majors in the department shall offer a minimum of 36 credits numbered 300 or above. In addition, mathematics through calculus plus one course of statistics and one year of college physics and Physics 250 or equivalent are required. A grade of "C" or better must be earned in each of the required courses.

All student programs must be approved by the department.

This department offers all courses necessary in meteorology and climatology to satisfy the requirements of the U.S. Civil Service Commission for a rating as professional meteorologist.

MICROBIOLOGY

C. A. EVANS, *Executive Officer*, G305 Health Sciences Building

DEGREE: Bachelor of Science

A minimum of 36 credits in approved courses in microbiology and satisfaction of the College of Arts and Science group requirements are necessary for graduation.

*No credit to students who have had 116.

†Electives must be limited to the Divisions of Humanities and the Social Sciences so as to satisfy group requirements in the College of Arts and Sciences.

‡Chemistry 465, 466, 467 may be substituted if Biochemistry 461-462 classes have been filled.

Ten credits in botany or zoology, Physics 101, 102, 103 (or 104, 105, 106), and Chem. 115, 116 (or 111, 112, 113), 221, 231 (Lab. 241), and 232 (Lab. 242) are required of all microbiology majors. These courses should ordinarily be completed during the first two years.

An over-all grade-point average of 2.5 in courses in biology and chemistry shall be required for admission to Microbiol. 300 and 251G.

An over-all grade-point average of 2.0 in courses in microbiology shall be required for graduation.

Transfer students entering the undergraduate curriculum shall be considered by a departmental committee, and any examinations deemed necessary shall be required before the student is eligible for sponsorship by the department.

Third and Fourth Years

Group options in third and fourth years: While specific courses are not prescribed, most students take work principally either in industrial or in medical microbiology.

Courses recommended for students in industrial microbiology: Microbiol. 420, 430, 431, 235G, 499; Biol. 451; Bot. 461, 472; Chem. 351, 352; 465; Math. 104, 105, 106, 385.

Courses recommended for students in medical microbiology: Microbiol. 420, 422, 430, or 431, 251G, 252G, 253G; Anatomy 301; Biol. 451; Bot. 461; Chem. 465; Pathology 321 (hospital lab. work). A limited number of students will be permitted to take pathology with the dental students. Histology is a prerequisite to this course. Permission of the executive officers of microbiology and pathology is required.

MUSIC

STANLEY CHAPPLE, *Director, Music Building*

The School of Music offers five curricula, one nonprofessional and four professional. The nonprofessional curriculum does not aim toward vocational preparation and thus provides a wider choice of electives. The professional curricula are intended for specialists in composition, instrumental or vocal performance, music education, and music history and literature.

Courses for Majors in Other Departments

Recommended electives for nonmajors are: 117, 118, 119, 121. Performance groups (100, 140, 160, 180, 340, 360, 380) are also open to nonmajors and may be taken either for credit or as activities. Credit for Music 100A (University Singers) is granted only upon completion of three consecutive quarters of work, and no new students are admitted to this course during the Spring Quarter. All ensemble and chamber music courses except Music 100 require an audition.

Admission Requirements

An individual piano examination is required of every entering music major. The student should be prepared to: (a) read at sight music of the difficulty of the average hymn, (b) recognize and identify keys and key signatures and play all major and harmonic minor scales, (c) play a simple piece by Bach, an easy sonatina, and an easy composition by a Romantic or contemporary composer.

If an entering student is deficient in piano but can demonstrate proficiency on other approved instruments or in voice he is classified as a conditional music major. Such a student will take Music 110AX (class piano) until his deficiency is removed. A student may enter Music 101 (First-Year Theory) by meeting requirements (a) and (b) of the piano examination noted above, but he will not be admitted to Music 201 (Second-Year Theory) until he has also fulfilled requirement (c).

General Requirements for Music Majors

Every music major shall choose a primary performance field (voice or instrument), and shall appear in public recital during his senior year either as soloist or as member of a small ensemble. As a rule, a student must complete three quarters of work in applied music before he receives a grade. This will be based on accomplishment and will be determined by examinations given during the final week of Spring Quarter. However, if a student's work falls below a "C" average, he will be given a grade of "D" or "E" at the end of the current quarter and will be expected to seek another major.

Every music major is required to participate in two musical organizations throughout his four years. Chorus, choir, orchestra, band, and chamber music groups are offered. The student's choice will depend upon his abilities and special interests; however, a vocalist must satisfy one-fourth of this requirement in instrumental ensembles, and an instrumentalist, one-fourth in vocal ensembles. No credit for participation in these organizations will be granted during the freshman and sophomore years. Thereafter a maximum of 12 credits may be earned.

A grade-point average of 2.5 in music courses, and an average of "C" in all other courses, shall be required for graduation.

The work of the first two years is essentially the same for all majors. Before a student may register for upper-division courses in music, he will be required to take a comprehensive examination in his first two year's work in theory and music literature.

FIRST YEAR

SECOND YEAR

	Credits
Music 101, 102, 103. First-Year Theory.....	12
Instrumental or Vocal Instruction.....	6-12
Ensembles.....	0
Engl. 101, 102, 103. Composition.....	9
P.E. 110 or 175. Health Ed.....	2
Group II or III Electives.....	10
P.E. Activity.....	3
Air, Mil., or Nav. Sci.....	6 or 9
	<hr/> 48-57

	Credits
*Music 110CX. Voice Class.....	6
†*Music 124, 125, 126. Orch. Instr. Lab... 3	
‡Music 131, 132, 133. Piano Sight Reading 3	
Music 201, 202, 203. Second-Year Theory... 12	
Music 207, 208, 209. Music Literature..... 6	
Instrumental or Vocal Instruction.....	6-12
Ensembles.....	0
Physics 150. Sound.....	5
Group II and III Electives.....	10
P.E. Activity.....	3
Air, Mil., or Nav. Sci.....	6 or 9
	<hr/> 60-69

Nonprofessional Curriculum

DEGREE: Bachelor of Arts

For the general major a minimum of 60 credits in music is required including 30 credits in first- and second-year theory and literature, 12 credits in vocal or instrumental instruction, and 18 credits in approved upper-division history and theory. In addition, 15 credits are required in allied arts and literature.

Professional Curricula

DEGREE: Bachelor of Arts in Music

I. MAJOR IN COMPOSITION

THIRD YEAR

FOURTH YEAR

	Credits
Music 224, 225, 226. Orchestral Instruments Lab.....	3
Music 301, 302. Contemporary Idioms.....	6
Music 304. Choral Literature.....	2
Music 311, 312. Modal Counterpoint.....	6
Music 384, 385, 386. Conducting.....	4
Music 391, 392, 393. Composer's Lab.....	9
Electives.....	12
Ensemble.....	6
	<hr/> 48

	Credits
Music 408, 409. Music History.....	6
Music 411, 412. Counterpoint.....	6
Music 461, 462. Orchestration.....	6
Music 484, 485, 486. Conducting.....	4
Music 491, 492, 493. Composer's Lab.....	6
Electives.....	11
Ensemble.....	6
	<hr/> 45

II. MAJOR IN INSTRUMENTAL OR VOCAL MUSIC

A student must show marked talent for performance before admission to upper-division work in the applied field. Of the 48 credits required in instrumental or vocal instruction, 40 credits must be in the major branch (e.g., piano), beginning with Music 150, and 6 credits in a minor instrument or in voice. If the major branch is organ, the 6 credits must be in voice (110CX or 130).

*Special requirement for music education majors.

†Special requirement for composition, music education, and string majors.

‡Special requirement for piano and organ majors.

A. PIANO

Entrance requirements for piano majors: (a) three two-part inventions by Bach, one memorized, or three compositions of equal difficulty from the pre-Haydn period; one complete sonata by Haydn, Mozart, or Beethoven; a short composition from both the Romantic and contemporary periods; (b) the sight reading of an easy accompaniment; (c) all major, harmonic and melodic scales four octaves hands together (M. 80, four notes to the beat); major and minor arpeggios, root positions and inversions.

THIRD YEAR

	Credits
Music 304. Choral Literature.....	2
Music 331, 332, 333. Keyboard Transposition and Improvisation.....	6
Music 334, 335, or 336. Accompanying.....	4
Music 350. Instrumental Instruction.....	12
Electives	15
Ensemble	6
	<hr/> 45

FOURTH YEAR

	Credits
Music 350. Instrumental Instruction.....	12
Music 380. Chamber Music.....	3
Music 434, 435, 436. Piano Teaching.....	6
Music Electives: Music History or Theory.....	6
Electives	15
Ensemble	3
	<hr/> 45

B. VIOLIN

THIRD YEAR

	Credits
Music 350. Instrumental Instruction.....	12
Music 360. Orchestra.....	3
Music 380. Chamber Music.....	3
Electives	27
	<hr/> 45

FOURTH YEAR

	Credits
Music 350. Instrumental Instruction.....	12
Music 360. Orchestra.....	3
Music 380. Chamber Music.....	3
Music Electives: Music Theory.....	5-6
Electives	22
	<hr/> 45-46

C. VOICE

(A) Language. The completion of one year of French, or its equivalent, is required at the end of the sophomore year and one year of German, or its equivalent, at the end of the junior year.

(B) Piano. An examination to demonstrate proficiency in the playing of simple accompaniments will be given at the end of the sophomore year.

THIRD YEAR

	Credits
Music 304. Choral Literature.....	2
Music 350. Vocal Instruction.....	12
Engl. 257. Poetry.....	5
Electives	20
Ensemble	6
	<hr/> 45

FOURTH YEAR

	Credits
Music 334. Accompanying.....	2
Music 350. Vocal Instruction.....	12
Music electives: Music History or Theory.....	6
Electives	20
Ensemble	6
	<hr/> 46

D. VIOLONCELLO: See Violin

E. ORGAN

THIRD YEAR

	Credits
Music 304. Choral Literature.....	2
Music 350. Instrumental Instruction.....	12
Music 384. Conducting.....	1
Music 411, 412. Counterpoint.....	6
Electives	18
Ensemble	6
	<hr/> 45

FOURTH YEAR

	Credits
Music 350. Instrumental Instruction.....	12
Music 357. Church Music.....	2
Music Electives: Music History or Theory.....	6
Electives	19
Ensemble	6
	<hr/> 45

III. MAJOR IN MUSIC EDUCATION

Preparatory to entering the professional teacher-training courses, an examination will be given in piano, voice and syllable reading at the end of the sophomore year.

(A) *Piano*. Students who have offered piano for instrumental entrance requirements shall complete 12 credits in Music 130A of the piano course before graduation. Students who have substituted corresponding proficiency on another instrument shall remove entrance requirements by the end of the freshman year.

(B) *Voice*. One year of study is required or the ability to demonstrate attainment equal to Music 110 CX (6 credits).

(C) *Academic Minor.* To qualify for the Three-Year Secondary Certificate, students will, during the senior year, choose a teaching minor in an academic subject.

(D) *Cadet Teaching.* All students majoring in music education will be required to meet the following performance standard before being approved for cadet teaching: 1. Play ten traditional community songs from memory; 2. improvise a suitable accompaniment to a melody in any given key; 3. play parts singly or in combination of a choral or instrumental composition suitable for use in the public schools; 4. transpose simple melodies; 5. perform in a musical manner a group of short compositions suitable for use in the elementary grade music program.

THIRD YEAR

	<i>Credits</i>
Music 224, 225, 226. Orchestral Instruments Lab.	3
Music 304. Choral Literature.	2
Music 324. Music Education.	4
Music 384, 385, 386. Conducting.	4
Ensemble.	6
Education 101, 209, 370.	10
Electives.	16
	<hr/> 45

FOURTH YEAR

	<i>Credits</i>
Music 244, 245. Orchestra Lab.	2
Music 326. Junior High School Music.	2
Music 484, 485, 486. Conducting.	4
Ensemble.	4
Education 375R. High School Music.	2
Education 390. Measurement in Education.	2
Electives.	29
	<hr/> 45

The bachelor's degree will be awarded upon the completion of the requirements of the fourth year (see note D above). A Three-Year Secondary Certificate (see College of Education, page 160), will be awarded upon the successful completion of the requirements as outlined below:

FIFTH YEAR

	<i>Credits</i>
Education 230, 360, 371, 372, 410.	16
Electives.	29
	<hr/> 45

Teaching Major or Minors in the College of Education

For the teaching major the departmental requirements for the five years are the same as III above.

Minor (for majors in music)

	<i>Credits</i>
Music 124, 125, 126. Orchestral Instruments Lab.	3
Music 224, 225, 226. Orchestral Instruments Lab.	3
Music 244, 245. Orchestra Lab.	0
Music 304. Choral Literature.	2
Music 384, 385, 386. Conducting.	4
Music 484, 485, 486. Conducting.	4
Education 375R. High School Music.	2

Vocal Minor (for nonmusic majors)

	<i>Credits</i>
Music 101, 102. First-Year Theory.	8
Music 130C. Vocal Instruction.	6
Music 304. Choral Literature.	2
Music 384, 385, 386. Conducting.	4
Music 495. Adv. Choral Conducting.	3
Ensemble, Choral, Upper Division.	3
Education 375R. High School Music.	2

Instrumental Minor (for nonmusic majors)

	<i>Credits</i>
Music 101, 102. Music Theory.	8
Music 124, 125, 126. Orchestral Instruments Lab.	3
Music 130. B, F, or G. Instrumental Instruction.	6
Music 224, 225, 226. Orchestral Instruments Lab.	3
Music 244, 245. Orchestra Lab.	0
Music 304. Choral Literature.	2
Music 356. Instrumental Music in the Public Schools.	2
Music 384, 385, 386. Conducting.	4
Ensemble.	3
Education 375R. High School Music.	2

IV. MAJOR IN MUSIC HISTORY AND LITERATURE

Prospective majors in music history and literature must show reasonable proficiency in some branch of instrumental or vocal performance before entering the work of the junior year.

THIRD YEAR

	<i>Credits</i>
Music 407, 408, 409. Music History.....	9
Music Theory Electives.....	9
French or German.....	15
Electives.....	13

FOURTH YEAR

	<i>Credits</i>
*Music History Electives.....	9
Music Theory Electives.....	6
Electives.....	30

PHILOSOPHY

EVERETT J. NELSON, *Executive Officer*, 264 Savery Hall

DEGREE: Bachelor of Arts

A major must offer (1) 45 credits in philosophy including Phil. 110 or 115, 120, 420-421, and 455-456-457; and (2) 10 credits in approved courses in each of the following fields of science: biological, physical, and social.

PHYSICAL AND HEALTH EDUCATION FOR MEN AND WOMEN

RUTH M. WILSON, *Executive Officer for Women*, 105 Hutchinson Hall

R. E. BELSHAW, *Executive Officer for Men*, 210 Edmundson Pavilion

DEGREE: Bachelor of Arts

The School of Physical and Health Education includes five main divisions: (1) physical education activity program, (2) health instruction, (3) intramural sports and recreation, (4) professional education in teacher training and recreational leadership, (5) prephysical therapy (for women).

An extensive program in intramural sports and recreational activities is conducted for both men and women. The program provides for organized competition, clubs, and the use of facilities for recreational purposes.

Professional education is offered in the fields of physical education, prephysical therapy, recreational leadership, and health education. Application for admission to professional curricula occurs after completion of 75 credits. The required foundation courses and professional courses are listed below. For additional requirements for the Three-Year Secondary Certificate, requisite for high school teaching in the State of Washington, see College of Education, page 160.

†Lower-Division Requirements for Major Curricula*Required foundation and related courses:*

MEN		WOMEN	
	<i>Credits</i>		<i>Credits</i>
Zool. 111. General Zool. or Biol. 101J.....	5	Zool. 111. General Zool. or Biol. 101J.....	5
Zool. 112. General Zool. or Biol. 102J.....	5	Zool. 112. General Zool. or Biol. 102J.....	5
Zool. 114. Evolution.....	2	Zool. 114. Evolution.....	2
Zool. 258. Physiology or Zool. 208.....	5 or 6	Zool. 258. Physiology.....	6
†Chem. 101, 102. General Chem.....	10	Chem. 101, 102. General Chem.....	10
(or one unit of high school chemistry)		(or one unit of high school chemistry)	
Anat. 301. Anatomy Lectures and Lab.....	5	Anat. 301. Anatomy Lectures and Lab.....	5
Engl. 101, 102, 103. Composition.....	9	P.E. 110. Health Educ.....	2
Soc. 110. Survey of Soc.....	5	Engl. 101, 102, 103. Composition.....	9
Psych. 100. General Psych.....	5	Soc. 110. Survey of Soc.....	5
Speech 120. Introduction to Public Speaking	5	Psych. 100. General Psych.....	5
P.E. 161, 162, 163, 264, 265, 266. P.E.		Speech 110. The Speaking Voice.....	5
Activities for Majors.....	6	P.E. 115, 126, 157. Archery, Canoeing, Golf.....	3
P.E. 181, 182, 183, 284, 285, 286. P.E.		P.E. 176, 177, 178. P.E. Activities for Freshman Majors.....	6
Backgrounds.....	6	P.E. 281, 282, 283, 284. P.E.	
Air, Mil., or Nav. Sci.....	12 or 18	Backgrounds.....	4
Total credits required.....	81 or 87	Total credits required.....	72

*For those intending to continue work toward a graduate degree, Music 477, 478, and 479 are recommended.

†For lower-division requirement for teaching major in health education see Group E, page 149.

‡Not required of men in Curriculum B.

MAJOR REQUIREMENTS

Group A. Major in Physical Education

(For the nonprofessional student)

Required professional courses:

MEN	Credits
190. Problems in Physical and Health Educ. and Recreation	2
291. Personal and General Hygiene.....	3
292B. First Aid and Safety.....	3
293. Physiology of Muscular Exercise.....	3
294. Community Recreation	2
309. School Dance Program	2
324. Playground Program	3
345. Principles of P.E.....	3
363. Methods and Materials in Teaching Sports	2
450B. School P.E. Program.....	3
465. The School Health Educ. Program..	3
493. Problems in Athletics.....	3
<i>Six credits selected from the following:</i>	
370. Football Coaching	2
371. Basketball Coaching	2
372. Track Coaching	2
373. Baseball Coaching	2
Total credits required.....	38

WOMEN	Credits
190. Problems in Physical and Health Educ. and Recreation	2
292. First Aid and Safety.....	3
293. Physiology of Muscular Exercise.....	3
*301. Methods and Materials in Gymnastics, Stunts and Tumbling...	3
311. Rhythmic Activities for Small Children	2
312. Elementary School Athletic Program.	3
318. Analysis of Rhythm.....	3
328. Organization and Administration of Camp Programs	3
345. Principles of P.E.....	3
*356. Methods and Materials in Teaching Modern Dance	2
*362. Methods and Materials in Teaching Folk, Tap, and Clog Dancing.....	2
*363. Methods and Materials in Teaching Sports	3
*364. Methods in Teaching Swimming...	3
465. The School Health Educ. Program..	3
H.E. 300. Nutrition	2
Total credits required.....	37-38

Group B. Major in Recreational Leadership

(For the professional student in the field of recreation)

Required foundation and related courses:

MEN	Credits
Biology 101J-102J. General.....	10
Psych. 100. General.....	5
Engl. 101, 102, 103. Composition.....	9
Soc. 110. Survey of Soc.....	5
Speech 120. Introduction to Public Speaking	5
Art 300. Elementary Crafts for Schools...	2
Librarianship 452. Story Telling.....	3
181, 182, 183, 284, 285, 286.....	6
25 approved credits from Soc., Psych., or Humanities	25
<i>15 hours of electives from the following:</i>	
P.E. 293; Drama 307, 308, 309, 434, 435, 436, 437; Forestry 301, 356; Music 117, 118, 119; Physics 154; Geol. 101; Astronomy 201.	
P.E. 161, 162, 163, 264, 265, 266. P.E. Activities for Majors.....	6
Total credits required.....	91

WOMEN	Credits
<i>For required foundation and related courses see lower-division requirements for major curricula.</i>	
Art 300. Elementary Crafts for Schools...	2
Drama 437. Creative Dramatics.....	3
Librarianship 452. Story Telling.....	3
<i>5 approved credits from the following:</i>	
Drama, Forestry, Music, Dance Production	
13 approved credits from Sociology	
Total credits required.....	26

*Must select 4 of 5.

Required professional courses:

MEN		WOMEN	
	<i>Credits</i>		<i>Credits</i>
290. Officiating. Men	2	190. Problems in Physical and Health	
291. Personal and General Hygiene.....	3	Educ. and Recreation.....	2
292B. First Aid and Safety.....	3	292. First Aid and Safety.....	3
294. Introduction to Community Recreation	2	293. Physiology of Muscular Exercise...	3
309. The School Dance Program.....	2	301. Methods and Materials in	
324. Playground Program	3	Gymnastics, Stunts and Tumbling...	3
328B. Organization and Administration of		311. Rhythmic Activities for Small	
Camp Programs	3	Children	2
345. Principles of P.E.....	3	312. Elementary School Athletic Program.	3
358. Methods of Teaching Apparatus,		318. Analysis of Rhythm.....	3
Tumbling, and Stunts.....	2	324. Playground Program	3
363. Methods and Materials in Teaching		328. Organization and Administration of	
Sports	2	Camp Programs	3
364. Methods in Teaching Swimming.....	2	345. Principles of P.E.....	3
426B. Observation and Practice Teaching..	2	356. Methods and Materials in Teaching	
450B. The School P.E. Program.....	3	Modern Dance	2
493. Problems in Athletics.....	3	362. Methods and Materials in Teaching	
		Folk, Tap, and Clog Dancing.....	2
Total credits required.....	35	363. Methods and Materials in Teaching	
		Sports	3
		364. Methods and Materials in Teaching	
		Swimming	3
		426. Observation and Practice Teaching...	4
		465. The School Health Educ. Program...	3
		466. Coaching (Registration for 3 quarters)	0
		Total credits required.....	45

Group C. Major in Prephysical Therapy

(For Women)

Required foundation and related courses:

	<i>Credits</i>		<i>Credits</i>
Physics 170. Physics for Nurses.....	5	Psych. 306. Child Psychology.....	5
Psych. 101. Psych. of Adjustment.....	5	Total credits required.....	15

Required professional courses:

	<i>Credits</i>		<i>Credits</i>
190. Problems in Physical and Health		322. Kinesiology	3
Educ. and Recreation	2	345. Principles of P.E.....	3
292. First Aid and Safety.....	3	362. Methods and Materials in Teaching	
293. Physiology of Muscular Exercise....	3	Folk, Tap, and Clog Dancing.....	2
301. Methods and Materials in		363. Methods and Materials in Teaching	
Gymnastics, Stunts and Tumbling....	3	Sports	3
311. Rhythmic Activities for Small		364. Methods in Teaching Swimming.....	3
Children	2	465. The School Health Educ. Program...	3
312. Elementary School Athletic Program.	3	466. Coaching (Registration for 3 quarters)	0
318. Analysis of Rhythm.....	3	Total credits required.....	36

Professional Teacher Training

(For the professional student in health and physical education)

Group D. Teaching Major in Physical Education

Required professional courses:

MEN	Credits
190. Problems in Physical and Health Educ. and Recreation.....	2
291. Personal and General Hygiene.....	3
292B. First Aid and Safety.....	3
293. Physiology of Muscular Exercise.....	3
294. Community Recreation.....	2
309. The School Dance Program.....	2
322. Kinesiology.....	3
324. Playground Program.....	3
345. Principles of P.E.....	3
358. Methods in Teaching Apparatus, Tumbling, and Stunts.....	2
361. Methods in Teaching Boxing and Wrestling.....	2
363. Methods and Materials in Teaching Sports.....	2
364. Methods in Teaching Swimming.....	2
435B. Adapted Activities.....	3
447. Tests and Measurements.....	3
450B. Section B. School P.E. Program.....	3
465. The School Health Education Program.....	3
493. Problems in Athletics.....	3
Six credits from the following:	6
370, 371, 372, 373. Athletic Coaching.....	—
Total credits required.....	53

WOMEN	Credits
190. Problems in Physical and Health Education and Recreation.....	2
292. First Aid and Safety.....	3
293. Physiology of Muscular Exercise.....	3
301. Methods and Materials in Gymnastics, Stunts and Tumbling....	3
311. Rhythmic Activities for Small Children.....	2
312. Elementary School Athletic Program.....	3
318. Analysis of Rhythm.....	3
322. Kinesiology.....	3
328. Organization and Administration of Camp Programs.....	3
345. Principles of P.E.....	3
356. Methods and Materials in Teaching Modern Dance.....	2
362. Methods and Materials in Teaching Folk, Tap, and Clog Dancing.....	2
363. Methods and Materials in Teaching Sports.....	3
364. Methods in Teaching Swimming.....	3
447. Tests and Measurements.....	3
450. The School P.E. Program.....	2
466. Coaching.....	0
Three credits in physical education electives.....	3
If not accompanied by health education minor, add:	—
453. Methods and Materials in Health Teaching.....	3
465. The School Health Education Program.....	3
Home Economics 300. Nutrition.....	3
Total credits required.....	46 or 54

Group E. Teaching Major in Health Education

MEN AND WOMEN

Lower-division requirements:

	Credits
Engl. 101, 102, 103. Composition.....	9
P.E. 110 or 291. Health Educ. or Personal and General Hygiene.....	2-3
Chem. 115, 116 or 111, 112. General Chem.....	10
Pol. Sci. 100. Survey of Pol. Sci.....	5
Soc. 110. Survey of Soc.....	5
Physics 100. Survey of Physics or High School Physics.....	5

	Credits
Speech 100. Basic Speech Improvement.....	5
Psych. 100. General.....	5
Psych. 101. Psych. of Adjustment.....	5
Zool. 114. Evolution.....	2
*Zool. 258. Physiology.....	6
*Anatomy 301. For P.E. majors and other nonmedical students.....	3
Total credits required.....	64-65

Required professional courses:

H.E. 300. Nutrition.....	2
Microbiol. 235G.....	5
P.E. 190. Problems in Physical and Health Educ. and Recreation.....	2
P.E. 292. First Aid and Safety.....	3
P.E. 345. Principles of Phys. Educ.....	3
P.E. 453. Methods and Materials in Health Teaching.....	3
P.E. 465. School Health Educ. Program.....	3
Psychiatry 467. Mental Hygiene.....	2

Public Health 402. Introd. Epidemiology.....	3
Public Health 412. Introd. to Public Health.....	8
Public Health 461. School and Community Health Programs.....	5
Speech (course to be determined by Speech Department in accordance with needs of individual).....	5
Related Electives.....	15
Total credits required.....	54

*Physiology 217JG-218JG and Anatomy 217JG-218JG may be substituted for Zool. 258 and Anatomy 301.

Related Electives:

	<i>Credits</i>		<i>Credits</i>
Educ. 475A. Auditory and Visual Aids in Teaching.....	3	Psychiatry 468. Principles of Psychiatric Counseling.....	2
Journ. 200. Preliminary News Writing.....	5	Psych. 135. Applied Psych.....	3
Journ. 304. Magazine Article Writing.....	3	Public Health 451. Industrial Hygiene.....	3
P.E. 293. Physiology of Muscular Exercise.....	3	Public Health 470. Biostatistics.....	2
P.E. 322. Kinesiology.....	3	Radio 200. Introduction.....	5
P.E. 429. Methods of Teaching First Aid and Safety.....	2	Soc. 270. Survey of Contemporary Social Problems.....	5
P.E. 435. Adapted Activities.....	3	Soc. 352. The Family.....	5
Pol. Sci. 376. State and Local Government and Administration.....	5	Soc. 353. Social Factors in Marriage.....	3
		Soc. 364. Rural Community.....	5

Group F. Teaching Minor in Physical Education*Required foundation and related courses:*

MEN	<i>Credits</i>	WOMEN	<i>Credits</i>
Zool. 118 or 208 or 258.....	5 or 6	Zool. 258. Physiology, or Zool. 118, Elementary Human Physiology.....	6 or 5
P.E. 161, 162, 163, 264, 265, 266.....	6	P.E. 176, 177, 178.....	6
P.E. 181, 182, 183, 284, 285, 286.....	6		
Total credits required.....	17 or 18	Total credits required.....	12 or 11

Required professional courses:

MEN	<i>Credits</i>	WOMEN	<i>Credits</i>
292B. First Aid and Safety.....	3	292. First Aid and Safety.....	3
309. The School Dance Program.....	2	309. The School Dance Program.....	2
345. Principles of P.E.....	3	312. Elementary School Athletic Program.....	3
358. Methods in Teaching Apparatus, Tumbling, and Stunts.....	2	345. Principles of P.E.....	3
361. Methods in Teaching Boxing and Wrestling.....	2	363. Methods and Materials in Teaching Sports.....	3
363. Methods and Materials in Teaching Sports.....	2	450. The School P.E. Program.....	2
450B. The School P.E. Program.....	3	453. Methods and Materials in Health Teaching.....	3
493. Athletic Programs.....	3	465. The School Health Educ. Program.....	3
Four credits from the following:		Three credits from physical education electives.....	3
370, 371, 372, 373. Athletic Coaching.....	4	Total credits required.....	25
Total credits required.....	24		

Group G. Teaching Minor in Health Education*Required foundation and related courses:***MEN AND WOMEN**

Zool. 258. Physiology, or Zool. 118....6 or 5

Required professional courses:

MEN	<i>Credits</i>	WOMEN	<i>Credits</i>
Home Economics 300. Nutrition.....	2	Home Economics 300. Nutrition.....	2
291. Personal and General Hygiene.....	3	316. First Aid and Safety.....	3
292B. First Aid and Safety.....	3	*345. Principles of P.E.....	3
345. Principles of P.E.....	3	453. Methods and Materials in Health Teaching.....	3
453. Methods and Materials in Health Teaching.....	3	465. The School Health Educ. Program.....	3
465. The School Health Educ. Program.....	3	Public Health 301. Causes and Control of Communicable Diseases.....	3
Public Health 301. Causes and Control of Communicable Diseases.....	3	Public Health 412. Public Health Organ. and Services.....	3
Public Health 412. Public Health Organ. and Services.....	3	Soc. or Graduate School of Social Work (approved electives).....	3
Public Health, Soc., or Psych.....	3		
Total credits required.....	26	Total credits required.....	23

*If taken with a major other than physical education.

PHYSICS

CLINTON L. UTTERBACK, *Executive Officer*, 205 Physics Hall

Elective Curriculum

DEGREE: Bachelor of Science

The major must offer 41 credits including courses 121, 122, 123 (or 101, 102, 103) 221, 222, 225, 226, 360, 361.

Prescribed Curriculum

DEGREE: Bachelor of Science in Physics

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Engl. 101. Composition... 3		Engl. 102. Composition... 3		Engl. 103. Composition... 3	
Math. 104. Trigonometry... 5		Math. 105. College Algebra 5		Math. 106. Analytic	
Physics 121. General... 5		Physics 122. General... 5		Geometry..... 5	
Electives..... 2		P.E. 110 or 175..... 2		Physics 123. General... 5	
P.E. Activity..... 1		P.E. Activity..... 1		Electives..... 2	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3		P.E. Activity..... 1	
	18 or 19		18 or 19	Air, Mil., or Nav. Sci. 2 or 3	
					18 or 19

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem 111 or 115. General. 5		Chem. 112 or 116. General 5		*Chem. 113. Qualitative	
Math. 307. Calculus..... 5		Math. 308. Calculus..... 5		Analysis..... 5	
Physics 221. Introd.		Physics 222. Introd.		Math. 309. Calculus..... 5	
to Modern Physics..... 3		to Modern Physics..... 3		Physics 250. Heat..... 3	
Physics 225. Electricity... 3		Physics 226. Electricity... 3		P.E. Activity..... 1	
P.E. Activity..... 1		P.E. Activity..... 1		Air, Mil., or Nav. Sci. 2 or 3	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3			16 or 17
	19 or 20		19 or 20		

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 221. Quantitative... 5		Math. 415. Diff. Equations 3		Math. 416. Diff. Equations 2	
Math. 414. Diff. Equations 3		Physics 360. Optics..... 3		Physics 354. High	
†Electives..... 5		Mech. Engr. 203. Shop... 1		Frequency..... 4	
*Electives..... 5		†Electives..... 8		Physics 361. Nuclear... 3	
	16		15	Physics 240..... 3	
				†Electives..... 3	
					15

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 355. Physical..... 3		Chem. 356. Physical..... 4		Chem. 357. Physical..... 3	
Physics 380. History of		Physics 492. Theoretical		Physics 496. Experimental	
Physics..... 2		Mechanics..... 4		Atomic..... 3	
Physics 491. Theoretical		Physics 495. Experimental		Electives..... 2	
Mechanics..... 4		Atomic..... 3		†Electives..... 7	
†Electives..... 6		†Electives..... 4			15
	15		15		

Teaching Major or Minor in the College of Education

The requirements for a major are the same as those for the elective major; for a minor 33 credits, including the courses required for a major, must be offered.

A teaching major or minor in physics must be supported by 15 credits of college mathematics.

For recommendation for the secondary certificate a major or a minor is required with an average grade better than "C."

*No credit to students who have had 116.

†Electives should include French or German.

POLITICAL SCIENCE**CHARLES E. MARTIN, Executive Officer, 206A Smith Hall****DEGREE: Bachelor of Arts**

Four elective curricula are offered. They consist of (1) a general major in political science designed for the student who desires a flexible liberal arts program; (2) a preprofessional program in international relations for those who desire to begin a 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: 100, and one of the intermediate courses (210, 220, 221, 260, and 270).

Upper-division courses: 411 or 418, 336 or 427, 445, 460, 470; 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 Pol. Sci. 100; either 210, 260, or 270; Econ. 200; Geog. 100; and Soc. 110. 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 Pol. Sci.: 411 or 418, 445, 460, and 470.
2. International Relations: 321, 322, 336, 427; at least three of 323, 324, 429, 430, and 432; and Law 441.
3. Supporting Fields: Courses selected with the consultation of the adviser from among Geog. 403, 404, 405; Econ. 370, 471; Foreign Trade 310, 460; Soc. 430; and Hist. 431, 432, and 459.

Public Administration

First and Second Years. In addition to the general requirements of the College of Arts and Sciences, students should elect Pol. Sci. 100 and 260; Econ. 200; Acctg. 150, 151; Bus. Stat. 201, or Math. 113; Psych. 100 and History 241. Remaining courses should be selected in consultation with the adviser.

Third and Fourth Years. During these years the student should select:

1. Basic Pol. Sci.: Pol. Sci. 412, 427, 445, 460, and 370 or 451.
2. Public Administration: Pol. Sci. 375, 376, 470, 471, 472, and 473.
3. Economics: Econ. 302, 350, and 451.
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 100, 210, 321, 351, 360, and 376.

Minor: 20 credits in Political Science including courses 100, 360, 376.

**PRE-EDUCATION, PRELAW, PRELIBRARIANSHIP, PREMEDICINE,
PRE DENTISTRY, PRENURSING, AND PRE-SOCIAL WORK**

(See Preprofessional Training, page 195)

PSYCHOLOGY

ROGER BROWN LOUCKS, *Executive Officer*, 335 Savery Hall

DEGREE: Bachelor of Science

A major requires a minimum of 36 credit hours in psychology including 100, 101, 300, 301, 400 or 427, 401, and 6 hours of psychology electives to be selected by the student. A grade-point average of 2.5 or better in psychology subjects taken at this University must be maintained for graduation with a B.S. degree in psychology. Candidates for advanced degrees in psychology (M.S., Ph.D.) must present a 3.0 or better all-University grade-point average for work in their senior year to be eligible for admission to the Graduate School.

Requirements for Three-Year Secondary Certificate in the College of Education

Teaching Major in Psychology: A major requires a minimum of 36 credit hours in psychology including 100, 101, 300, 301, 400 or 427, 401, and 6 hours of psychology electives to be selected by the student.

Teaching Minor in Psychology: A minor requires a minimum of 18 credit hours in psychology including 100 and 101 and 8 hours of psychology electives to be selected by the student and approved by the department.

Graduate Study in Psychology

Admission to graduate study toward advanced degrees in psychology requires formal approval by the Department of Psychology in addition to admission to the Graduate School.

PUBLIC HEALTH AND PREVENTIVE MEDICINE

L. E. POWERS, *Executive Officer*, E303 Health Sciences Building

DEGREE: Bachelor of Science

Majors in Public Health shall complete, in addition to the College of Arts and Sciences group requirements, a minimum of 36 hours in recommended public health courses including P.H. 485 to be eligible for the Bachelor of Science degree. Group options of three types are offered: 1. Sanitary Science, 2. Public Health Statistics, 3. Public Health Education.

Forty-five hours in subject material from Group III courses of the College of Arts and Sciences including 9 credits in mathematics should ordinarily be completed during the first two years.

Upon completion of the first 90 hours 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 continue to sponsor the student in further work in his curriculum.

While specific courses are not prescribed in the third and fourth years, students must choose principally those departmental and supporting courses related directly or indirectly to the group option elected as recommended by the departmental adviser. An over-all grade-point average of 2.5 in the professional courses shall be required for graduation.

RADIO EDUCATION

EDWIN H. ADAMS, *Executive Officer*, Radio Hall

This department coordinates the courses pertaining to radio broadcasting offered in various departments and schools, but does not offer a major or minor and does not grant degrees. A general pattern of training in radio, covering the several areas of specialization and leading to the degree of Bachelor of Arts, is available through the Department of General Studies (see page 131).

Those wishing to specialize in radio drama, radio education, radio engineering, radio journalism, radio music, or radio speech should consult the department concerned (Drama, Education, Electrical Engineering, Journalism, Music, Speech).

ROMANCE LANGUAGES AND LITERATURE

(French, Italian, Portuguese, and Spanish)

HOWARD L. NOSTRAND, *Executive Officer*, 202 Denny Hall

DEGREE: Bachelor of Arts

Majors are offered in French, Spanish, and Italian. Majors and minors for the Three-Year Secondary Certificate are offered in French and Spanish; these majors are the same as for the B.A. (For Latin-American Studies see General Studies.) The requirement in each case is (a) proficiency in the language, and (b) knowledge of its literature and cultural background as outlined in a syllabus obtainable from the department. This requirement may normally be met in a French major with 45* credits, namely courses 201, 202, 203; 301, 302, 303; 304, 305, 306; 307 or 308†; 341, 358, 359; plus 12 elective credits‡ and some directed reading. A Spanish major may be met with 45* credits, namely courses 201, 202, 203; 301, 302, 303; 304, 305, 306; 358, 359; plus 14 elective credits‡ and some directed reading.

A teaching minor in French or Spanish requires a minimum of 24 credits in courses above French or Spanish 203. Spanish 210, 211, and 212 must be included in the 24 credits required for a teaching minor, and Spanish 327, 328, and 329 for a teaching major.

SCANDINAVIAN LANGUAGES AND LITERATURE

(Danish, Norwegian, and Swedish)

SVERRE ARESTAD, *Executive Officer*, 210 Denny Hall

DEGREE: Bachelor of Arts

For a major the student shall offer 36 credits, 15 of which are upper-division, including the following courses: *for Danish*, 100, 101, 102, 104, 105, 106, 220, 221, 222, 300, 301, 302, 490; *for Norwegian*, 100, 101, 102, 104, 105, 106, 220, 221, 222, 300, 301, 302, 490; *for Swedish*, 100, 101, 102, 104, 105, 106, 220, 221, 222, 226, 227, 228, 300, 301, 302, 490.

Other courses may be substituted on the approval of the department.

SOCIOLOGY

GEORGE A. LUNDBERG, *Executive Officer*, 108A Smith Hall

Degrees and Requirements for Graduation

Students should read the departmental leaflet and consult with staff advisers before selecting courses.

DEGREE: Bachelor of Arts

The degree of Bachelor of Arts with a major in sociology will be conferred on students who complete a minimum of 36 credits in approved courses in sociology and fulfill the group requirements of the college. The required sociology courses for this degree are: 110 or 310, 223, 230 or 430, 240, and 352. A minimum over-all grade-point average of 2.0 must be maintained.

Teaching Major or Minor in the College of Education

The major is the same as in the College of Arts and Sciences.

The minor requires 27 credits including courses 110 or 310, together with 352 or 430, and 17 credits of approved sociology electives.

*Beyond course 103 or two high school years. A third high school year replaces courses 201, 202, 203; a fourth high school year if devoted to advanced composition and conversation replaces courses 301, 302, 303.

†In order to be recommended to teach, a student must either earn a grade of "B" in 307 or 308 or take the other of these courses in addition.

‡Any literature courses numbered above 400 and not including more than 3 credits of 334, 335, 336.

SPEECH

HORACE G. RAHSKOPF, *Executive Officer*, 209 Parrington Hall

DEGREE: Bachelor of Arts

The major requires a minimum of 50 credits in approved courses in speech, including Speech 100, 110, 120, 400, 498, and one of the workshop courses in public performance or clinical practice, i.e., 239, 249, 369, 474, or 484. In addition, the student will elect certain of his courses in humanities, social science, and natural sciences with approval of the department.

Teaching Major or Minor in the College of Education

In addition to general University requirements and those of the College of Education, the candidate for a Three-Year Secondary Certificate must complete the following requirements:

Major:

(1) Lower-division courses: Speech 100, 110, 120, 230, 240, 261, 352. (Total lower-division credits 30)

(2) Upper-division courses: Speech 400, 470, 480, 498, and Educ. 375X (two of the credits for Educ. 375X are included in the College of Education requirements) plus a minimum of 11 credits of *approved* electives. In choosing these electives the student must take at least one course from the workshop courses in public performance or clinical practice, i.e., 239, 249, 369, 474, 484. (Total upper-division credits 29)

(3) *Approved* courses in related fields: Literature and drama, 12 to 15 credits; social science 10 credits, science 10 credits. (The social science and science credits also apply on College of Arts and Science requirements.)

(4) The grade-point average in speech courses is the same as that required for professional courses in education (see College of Education).

First Minor: A total of 30 credits in speech, including Speech 100, 110, 120, 240, 352, and Educ. 375X, and *approved* upper-division electives. The grade-point average in speech courses is the same as that required for professional courses in Education (see College of Education).

Second Minor: A total of 20 credits in speech, including Speech 100, 110, 120, 352, and an *approved* upper-division elective.

ZOOLOGY

ARTHUR W. MARTIN, *Executive Officer*, 142 Johnson Hall

A student entering the department will be assigned an adviser with whom he will plan his course of study. Upper-division and graduate students may select their own advisers from among the members of the teaching staff. A student must express his intention to major in the department by the end of his junior year.

Biol. 101J and 102J, Zool. 114, 208, and 258 are courses given to meet the needs of students in other departments and will not be counted toward departmental majors or minors. Other courses listed under Biology and Fisheries and Fisheries 401, 402, and 403 receive zoology credit upon request.

Elective Curriculum

DEGREE: Bachelor of Arts

This degree is awarded those students who show evidence of a broad liberal arts education. Minimum requirements for the degree include those of the College of Arts and Sciences and 36 credits in approved courses in zoology. These must include Zool. 111 and 112, Zool. 453-454 or Zool. 456, Biol. 351 or 451 and Zool. 400 (or other acceptable lab. course in physiology). In addition a year of college chemistry, a year of college-grade foreign language, and 15 credits in social sciences will be required for the degree.

Prescribed Curriculum**DEGREE: Bachelor of Science**

This degree is awarded to those students who present a concentration of credits in a correlated program of science courses. The student must meet the group requirements of the college. In addition he must fulfill the following requirements: present a minimum of 45 credits in zoology courses including Zool. 111 and 112, 400, 433, 434, 453, 454, 456 and Biol. 451, present Bot. 112, a year of college physics, Chem. 115, 116, 231, 232, 241, and 242, and a year of college French or German. A year of college mathematics and a reading knowledge of a second modern foreign language are highly recommended. He must present an over-all average of 2.5 and a 3.0 average in all courses in zoology.

The above curriculum includes the courses it is felt a zoology major should have if he is to enter upon graduate work without deficiencies. Satisfactory performance in the elective curriculum or in a related science department may also lead to a graduate program in zoology.

Teaching Minor in the College of Education

A minor requires 25 credits, including Zool. 111 and 112, 258 or 400, and 10 hours from the 5-hour upper-division lab. courses in zoology. Educ. 375Z will also be required. For a major, see biology major in College of Education (page 161).

COLLEGE OF BUSINESS ADMINISTRATION

AUSTIN GRIMSHAW, *Dean*, 210 Commerce Hall

For detailed information concerning University fees, expenses, and admission requirements, see pages 86-98. In addition to the all-University entrance requirements, the College of Business Administration requires one *unit* each of U.S. history and civics, elementary algebra, plane geometry or advanced algebra. (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.)

Inquiries in regard to the College of Business Administration should be addressed to the Dean. All correspondence regarding admission should be sent to the Registrar of the University.

Fellowships, Scholarships, Prizes. See page 112.

Requirements for Graduation

Graduates of the College of Business Administration receive the degree of Bachelor of Arts in Business Administration. The following summarizes the requirements for this degree:

1. The student must satisfy the entrance requirements of the University and the College of Business Administration.

2. The student must earn 186 credits in subjects required by the University and required or approved by the faculty of the college; 72 credits must be earned in courses in business administration, and 72 credits must be earned in courses which are not business administration (economic principles and economic history may be counted in either the business or nonbusiness groups); and 6 credits must be earned in physical education activities plus P.E. 175 or P.E. 110. In addition, men must meet the general University requirements of military, naval, or air science. A minimum of 60 credits in upper-division courses, exclusive of those earned in Army and Navy ROTC subjects, shall be required for graduation.

3. No more than 18 quarter credits in advanced Army and Navy subjects may be applied toward graduation, except in the case of students in the Supply Corps.

4. 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.

5. Continuation in the College of Business Administration will depend upon the student's demonstration of general fitness for work in that college, including the maintenance of satisfactory academic performance. Scholarship regulations of the college are:

(a) Any student (except freshmen) whose current grade-point average is below 2.0 in any quarter shall be on probation the following quarter, regardless of his cumulative average. (Except that probation for any student with a cumulative average of 2.5 or higher shall be left to administrative discretion.)

(b) Freshmen shall not be placed on probation until after the second quarter. In the case of second- and third-quarter freshmen, a 1.8 current average shall apply rather than 2.0 as above.

(c) Any student placed on probation who fails to obtain a current grade average of at least 1.66 in the subsequent quarter shall be dismissed from the college.

(d) Any student on probation whose current grade average falls below 2.0 in each of three consecutive quarters shall be dismissed from the college. (In the case of second- and third-quarter freshmen, a grade average of 1.8 shall be applied rather than 2.0.)

(e) Any student on probation whose current grade average in any subsequent quarter is 2.0 or above shall be taken off probation, so far as this college is concerned, regardless of cumulative average.

(f) Any senior entering his last quarter shall be put on probation if his cumulative grade average is below 2.0.

(g) Nothing in the above shall prevent immediate dismissal of any student following any quarter in which his work is of such unsatisfactory caliber that continuation in the college is unjustified.

Students who are admitted upon petition with high school deficiency must register for such courses during their first quarter of residence and carry the work continuously until all deficiencies are removed.

The student will, before the beginning of his junior year, choose a special field of major interest and will consult the major professor in this field in planning his program.

Prior to the time of registration the student's program must be approved by the curriculum counselor for the College of Business Administration, who will enforce all requirements together with the course prerequisites as stated in this bulletin.

Lower-Division Requirements

	<i>Credits</i>
B.A. 101 Introduction to Business.....	5
Acctg. 150 Fundamentals of Accounting....	3
Acctg. 151 Fundamentals of Accounting....	3
Acctg. 255 Basic Accounting Analysis*.....	5
B. Law 201 Business Law.....	5
Fin. 201 Banking and Business.....	5
B. Stat. 201 Statistical Analysis.....	5
Econ. 160 American Economic History.....	5
Econ. 200 Introduction to Economics.....	5
Econ. 201 Principles of Economics.....	5
Engl. 101 Composition.....	3
Engl. 102 Composition.....	3
Engl. 103 Composition.....	3
Geog. 107 Economic Geography.....	5
P.E. 110 or 175 Health Education.....	2
10 credits in one of these three fields:.....	10
(1) Mathematics (May not include Math. 113)	
(2) Laboratory Science (10 credits of one science or 5 credits in each of two from: Botany, Chemistry, Geology, Physics, or Zoology)	
(3) Foreign language (10 credits of one language)	
Approved Electives†	20
Physical Education Activity.....	6
	<hr/> 96

Upper-Division Requirements

	<i>Credits</i>
B.A. 439 Business Fluctuations.....	5
B.A. 460 Human Relations in Industry and Business	5
Fin. 301 Corporation Finance.....	5
Mktg. 301 Principles of Marketing.....	5
Prod. 301 Principles of Production.....	5
Major Requirements and Approved Electives†	65
	<hr/> 90
Total.....	186

* Accounting majors should take Acctg. 250 in place of Acctg. 255.

Accounting majors should also take Acctg. 310 in the sophomore year.

† Approved electives must include 20 credits in the following: (It is recommended that 10 credits, but no more than 10 credits, be taken in each of two fields.)

Psychology
Political Science
Sociology
Philosophy
Anthropology

Requirements in Major Fields

1. Accounting: Professional (preparation for C.P.A.)—Acctg. 310, 320, 330, 340, 360, 370, 380, 390, 393, 420, 470, and B. Law 202 and 420.

- Comptrollership—Acctg. 310, 320, 330, 340, 360, 370, 390, 450, plus 6 credits elected in upper-division accounting courses excluding Acctg. 305.
2. Banking and Finance: Banking—Fin. 420, 425, 428, 444; plus 13 credits elected from Fin. 334, 367, 432, 446; Econ. 350.
Investments—Fin. 420, 425, 444, 446; plus 13 credits elected from Fin. 334, 367, 428, 432, Econ. 350.
 3. Foreign Trade: Econ. 370, F.T. 310, Fin. 367; a minimum of 8 credits approved by adviser from F.T. 450, 460, 495, 496; a minimum of 5 credits from Political Science 321, 322, 323, 324, 329, 332, 430; and a minimum of 5 credits from Geog. 403, 404, 405. (Each major in foreign trade must, not later than the first quarter of his junior year, in consultation with his major professor, build a complete scholastic program for the last two years of his University work. One copy of his program shall be kept by the college registration office and one by the student.)
 4. General Business: 30 credits in upper-division courses in business approved by the adviser, no more than 10 of which may be in any one major field.
 5. Insurance: Ins. 301, 302, 303, plus 16 or more credits approved by the adviser from one of the following groups:
Life—Ins. 359, 473, Fin. 444, Acctg. 320, Econ. 345, Law 400 and 430.
Property-Casualty—Ins. 453, 475, 477, Trans. 452, Acctg. 310, Econ. 345, Law 400.
 6. Marketing: Wholesaling (including Sales Management and Industrial Marketing)—Mktg. 371, 381, 391, 401, 421, 451, and one of the following: Mktg. 495-496, Fin. 334, Prod. 355. (Marketing majors should take Mktg. 301 in the third quarter of the sophomore year. Each major must, not later than the first quarter of his junior year, in consultation with his major professor, build a complete scholastic program for the last two years of his University work. One copy of this program shall be kept by the college registration office and one by the student.)
Retailing—Mktg. 371, 381, 391, 421, 431, 461, and two of the following: Mktg. 441, 481, 495-496, Fin. 334, H.Ec. 125.
Advertising—Mktg. 371, 381, 391, 401, 421, 471, and two of the following: Mktg. 441, 495-496, Journ. 303, 342, 370.
Marketing Research—Mktg. 371, 381, 391, 421, 495-496, B. Stat. 340; and one of the following: Mktg. 401, 451; B. Stat. 341, 342; Soc. 442.
 7. Office Management: Acctg. 305, 310, 341, 499, B.A. 310, Fin. 334, Pers. 310.
 8. Personnel: Pers. 310, 345, 346, 450; Psych. 335; Soc. 466; Econ. 340; M.E. 201, 202, 203, 417. The adviser may accept substitutes for M.E. 201, 202, 203. (Personnel majors should take B. A. 460 not later than the second quarter of the junior year.)
 9. Production: Acctg. 310, 330; Pers. 310; Prod. 351, 355, 460; M.E. 201, 202, 203, 417.
 10. Real Estate: R.E. 301, 410, 495, 496; Ins. 302; Arch. 105; plus 7 or more credits from Fin. 444, Mktg. 351, Arch. 100, 101.
 11. Secretarial Training: Sec. 310, 311, 320; B.A. 310; Acctg. 305; Engl. 387.
 12. Statistics: B.Stat. 340, 341, 342, 443; Acctg. 310, 341; M.E. 415, 417; Math. 105.
 13. Transportation: B. Law 202; Trans. 301 and at least 25 credits from the following: Trans. 311, 313, 315, 317, 440, 450, 452, 495, 496.
 14. Commercial Teaching:
 - (a) Satisfaction of all the general requirements of the College of Business Administration.
 - (b) Sec. 10, 111, and 112, and Sec. 120-121, 122 or Sec. 130-131, 132. This requirement may be satisfied by passing an examination; in case of exemption by examination, University credit is not given.
 - (c) The major requirements shall include upper-division courses in business appropriate to the candidate's teaching field, to be selected by the student and his adviser, and total no less than 20 credits.
 - (d) The approved electives should include Education 101, 309, 370.

Completion of the above requirements for the degree of Bachelor of Arts in Business Administration with a major in Commercial Teaching does not satisfy all requirements for the Three-Year Secondary Certificate. For these additional requirements, see page 161 under the College of Education.
 15. Law and Business: 138 credits including all general requirements of the College of Business Administration with the exception of B. Law 201, plus 42 credits in the Law School. See also page 195.

SCHOOL OF DENTISTRY

ERNEST M. JONES, *Dean*, Health Sciences Building

The School of Dentistry began instruction to its first classes on October 1, 1946. Since January 1, 1949, the school has occupied its new quarters in the Division of Health Sciences Building where clinical and didactic instruction is being given in all phases of dentistry.

Organization and development of the School of Dentistry has been so designed as to meet the approval of the Council on Dental Education of the American Dental Association. The objective of the school is to prepare a selected group of dental students for the practice of dentistry through the use of the best educational technics employed in the field. Actual admission to the practice of dentistry in the State of Washington, or any other state, is conditional upon the candidate meeting the requirements of the state board of dental examiners, and passing through the state dental examinations.

Applications

All applications and pertinent material should be sent to the Committee on Admissions of the School of Dentistry. Each applicant must submit the following material before April 1, before any action can be taken by the Committee on Admissions: (1) formal application for admission on the form furnished by the University of Washington School of Dentistry; (2) official transcripts of previous college record (sent directly from the Registrar's Office of the institution where preprofessional training was taken to the Committee on Admissions of the School of Dentistry of the University of Washington); (3) two unmounted recent photographs (2 x 3 inches); (4) letters of recommendation, one preferably from a science instructor and others from business or professional individuals.

Admission

The Committee on Admissions will consider as candidates for entrance to the School of Dentistry: (1) individuals who hold a Bachelor of Arts or Science degree from a fully accredited college or university and whose scholastic average has been 2.0 or better; (2) those who have completed two years of preidental training (90 academic quarter credits) with a scholastic average of 2.0 or better. All applicants must have completed the required course in physical education, and the following basic preidental courses: Engl. 101, 102, 103 (Composition, 9 credits); Chem. 111, 112, 113 (for students without high school chemistry) or 115, 116 (for those having completed a year of high school chemistry); Chem. 231, 232, 241, 242 (Organic)—(total of 25 chemistry credits); Physics 101, 102, 103 or 104, 105, 106 (15 credits); Zool. 111, 112 (General); Zool. 453-454 (Comparative Anatomy) or Zool. 456 (General Vertebrate Embryology).

Students are advised to choose electives from fields of special interest for the purpose of broadening and enriching their background in human relationships and understanding. While the following subjects are suggested, students should study the offerings in their respective schools for other possible electives: laboratory drawing, sculpture, survey of American literature, introduction to modern literature, music appreciation, essentials of speaking, anthropology, economics, philosophy, psychology, or sociology.

Requirements for Graduation

A candidate for the degree of Doctor of Dental Surgery must be 21 years of age and must have given evidence of good moral character. He must have attended four quarters as a regularly matriculated student. He must have completed the required work, having a satisfactory grade average (minimum 2.0) throughout the entire dental course, and have fulfilled all special requirements. He must have discharged all indebtedness to the institution.

A degree of Bachelor of Science in the College of Arts and Sciences is granted with the fourth year of work being done in the School of Dentistry.

For advanced degrees, see Graduate School section, page 203.

COLLEGE OF EDUCATION

FRANCIS F. POWERS, *Dean*, 230 Education Hall

The College of Education is a professional college for teachers. The specialized offerings include curricula leading toward: public school certification on the elementary and secondary levels, various types of public school credentials, the Bachelor of Arts degree, the Bachelor of Science degree, and the Bachelor of Arts in Elementary Education.

The advisory personnel are available to assist students with the various types of programs from 8:00 a.m. to 5:00 p.m. daily, Monday through Friday, and from 8:00 a.m. to 12:00 noon on Saturday. In order to protect the student with reference to technical requirements, registration in all education courses for all purposes must be approved through the education advisory office.

Entrance Requirements

For information concerning University requirements for admission see pages 86-92. Students are admitted to the College of Education as freshmen. A cumulative grade-point average of 2.2 must be maintained throughout the professional training. A high school foreign language deficiency may be met by taking 15 credits in a foreign language and/or in English composition or literature.

A freshman may enter the University as a pre-education major in the College of Arts and Sciences if he is undecided as to the prescribed course he wishes to follow, or if he does not meet the entrance requirements for the College of Education.

General Requirements

1. English 101, 102, and 103, or equivalent, are required of all students. These courses do not apply toward the Group I requirements or toward a major or minor.

2. Physical Education 110, or equivalent, must be taken by all women students; Physical Education 175, or equivalent, must be taken by all men students.

3. Six credits in Physical Education activities (or exemption) are required for graduation. Six quarters of Air, Military, or Naval Science are required of all male students.

4. Sixty upper-division credits are required of all students for graduation.

5. During the first two years a student should complete his group requirements. At least 30 credits are required in one group, 20 credits in a second group, and 10 credits in the remaining group. For a list of departments in the College of Arts and Sciences and in the College of Education by groups, see page 115.

6. *Major Subject.* A Bachelor of Arts degree or a Bachelor of Science degree will be issued according to the requirements of the departments. Each student must have a major field (36 credit minimum) selected from the following: art education, biology, botany, chemistry, civics, commercial subjects, drama, economics, English, elementary education, French, geography, geology, German, health education, history, home economics, industrial education, journalism, Latin, mathematics, music, physical education for men, physical education for women, physics, political science, psychology, sociology, Spanish, speech, zoology.

The College of Education advisory staff will help the student choose teaching combinations which are in demand.

7. *Foreign Language Deficiency.* Students graduating from the College of Education may take foreign language or substitute 15 credits in General Literature and English for an entrance deficiency in foreign language. The substituted credits must be in addition to the regular graduation requirements of English 101, 102, and 103.

8. A minimum of 9 credits in education at the University of Washington is required for graduation from the College of Education. A cumulative grade-point average of at least 2.2 must be maintained for all professional courses in education which are required for the teaching certificate.

9. Academic quarter credits totaling 180 are required for the bachelor's degree.

10. An application for the bachelor's degree should be on file not later than the beginning of the senior year.

Fellowships, Scholarships, Prizes. See page 112.

Advanced Degrees

The Department of Education in collaboration with the Graduate School offers four advanced degrees: master of education, master of arts, doctor of education, and doctor of philosophy. See Graduate School section for further details.

Students without teaching experience are accepted in the fifth year as candidates for advanced degrees only if they have been graduated with merit (grade-point average of 3.5).

Requirements for Three-Year Secondary Certificate

The University Three-Year Secondary Certificate is valid for three calendar years from date of issue, and may be issued only to persons who are citizens of the United States. Applicants for this certificate must fulfill the following requirements:

1. Show evidence of such general scholarship and personal and moral qualities as give promise of success.
2. Earn 225 quarter credits in approved courses, including a degree from a properly accredited institution. Thirty-three of the 45 quarter credits required for the fifth year must be earned in residence, and the entire fifth year must be approved in advance by the College of Education.
3. Take a course in the history of the State of Washington (History 464) and earn additional credits in courses dealing with contemporary social problems to make a total of 15. These courses must be approved by the College of Education.
4. Earn a minimum of 31 credits in education including the following courses (not more than 2 credits for Education 375 may be counted toward this requirement):

	<i>Credits</i>
101 Orientation in Education.....	2
209 Educational Psychology	3
370 General Methods	5
390 Measurement in Education.....	3
375 Special Methods	2
230 Washington State Manual	2
371-72 Cadet Teaching	8
360 Principles of Education.....	3
410 Educational Sociology, or approved substitute.....	3
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The professional courses in education for the secondary teaching certificate must be distributed throughout the junior, senior, and fifth years as an effort to crowd these courses results in numerous conflicts.

5. Earn the following grades:

- (a) An all-University grade-point average of 2.2 or better.
- (b) "C" average or better in all education courses; with "C" or better in Education 371-72, 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 36 credits; and (b) two teaching minors, minimum of 15 credits each. The major and minors must be in subjects regularly included in the curriculum of at least two accredited public high schools in the State of Washington. The list of acceptable teaching majors and/or minors follows: art education, biology, botany, chemistry, civics, commercial subjects, drama, economics, English, Far Eastern, French, geography, geology, German, health education, history, home economics, industrial education, journalism, Latin, librarianship, mathematics, music, physical education for men, physical education for women, physics, political science, psychology, sociology, Spanish, speech, and zoology. (For departmental requirements for teaching majors and minors, see the schools and departments listed alphabetically under the College of Arts and Sciences.)

Biology. Since a true conception of Biology cannot be obtained without a proper balance between Botany and Zoology, these two departments do not offer a teaching major

separately, but rather a major in Biology which is the equivalent in credits of a major and a minor. Therefore, students taking a teaching major in Biology are considered to have completed a major and one minor and need take only one additional minor. It is highly recommended that the additional minor be in chemistry.

Biology majors must offer a minimum of 60 credits including one or more of the following introductory courses: Biol. 101J-102J, Bot. 111 and Zool. 111, the number being dependent upon excellence of scholarship and the advice of the two departments. Other required courses are: Biol. 451; Bot. 112 and 113, 371 or 472; Zool. 112, 258 or 400; 5 credits chosen from Zool. 433-434, 444, Biol. 473; 5 credits chosen from Zool. 463, 464, 465; Microbiol. 301. The remaining 10 credits will be approved electives which will usually be selected from Bot. 201 and 202 or 331; Zool. 401, 433-34, 456, Biol. 473.

The Departments of Botany and Zoology each have appointed an adviser to guide the student in the selection of courses for the major. All majors should have their programs approved by these advisers.

Business Education. Students may prepare for teaching positions in business departments in secondary schools by following the program given below.

The following Business Administration courses will be required for a major:

(a) *Foundation courses:* Sec. 10*, 111*, 112*, 120*, 121*; Bus. Law 201; Accounting 150, 151; Education 375E and 375F.

(b) Plus one of the following areas of specialization:

(1) *Secretarial Administration:* B.A. 310; Accounting 305, Sec. 122, 310, 311, 320.

(2) *Accounting:* Marketing 301; Accounting 310, 320, 330, 360, plus 5 credits to be selected by the student and his adviser.

(3) *Distributive Education:* Marketing 301, 381, 391, 401; B.A. 310; Accounting 305.

(4) *General Business:* Sec. 115, B.A. 310, Accounting 305, plus 5 credits from each of the following fields: Accounting, Secretarial Administration, and Marketing.

First minor: Sec. 10*, 111*, 112*, 115*, 120*, 121*; Bus. Law 201; Accounting 150, 151, plus Educ. 375E and 375F.

Second minor: Sec. 10*, 111*, 112*, 115*, 120*, 121*; Bus. Law 201; Accounting 150, plus either Educ. 375E or 375F.

Civics. For a major a student must offer 40 credits including Pol. Sci. 100, 360, 376; Econ. 160; Soc. 110; plus 13 elective credits in Political Science and 5 credits in Economics or Sociology.

For a minor a student must offer 25 credits, including Pol. Sci. 100, 360; Econ. 160 or Soc. 110; plus 13 elective credits in Political Science.

Industrial Education. Students who wish to complete a major in Industrial Education must offer at least 36 credits in approved shop and professional courses. Students who wish to complete a minor in Industrial Education must offer at least 24 hours in approved shop and professional courses. The selection of courses for a program of study should be made as early as possible. All majors and minors in Industrial Education must have their programs approved by an adviser.

7. Sign an oath of allegiance, and declare citizenship.

8. Pass a health examination within six months prior to the time the certificate is granted.

9. File and 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.

*Students who have earned credits elsewhere comparable to Business Administration which have been approved by the College of Business Administration, may substitute other approved courses in Business Administration to complete the total number of required credits in either the major or the minor.

Requirements for the Three-Year Elementary Teaching Certificate

The University Three-Year Elementary Teaching Certificate is valid for three calendar years from date of issue, and may be issued only to persons who are citizens of the United States. 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. Academic work to total 180 quarter credits.
3. Courses to meet requirements for B.A. in elementary education (high school deficiencies, group requirements, etc.)
4. Major in elementary education—to be taken in the following sequence:

	<i>Credits</i>
Educ. 101 Educ. Orientation	2
Educ. 209 Educational Psych. (Prerequisite, Psych. 100)	3
Educ. 230 Washington State Manual	2
Educ. 370E Elementary School Methods	5
Educ. 374 Fundamentals of Reading Instruction	5
Educ. 376 Art in the Elementary School	5
Educ. 377A, B, C Music for Elementary Teachers	6
Educ. 378A, B P.E. for the Elementary School	6
Educ. 390 Measurement in Education	3
Educ. 371-72E Cadet Teaching in the Elementary Grades	8
Educ. 360 Principles of Educ.	3
Educ. 402 Child Study and Development	3
Educ. 447 Principles of Guidance	3

or

Educ. 408 Mental Hygiene for Teachers and Administrators	3
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All courses except Educ. 101 offer upper-division credit.

5. Field of Emphasis—25 quarter credits chosen from one of the following: arts and crafts conservation, foreign languages, health and physical education, health education, home economics, industrial education, language arts, librarianship, mathematics, music, nursery school education, remedial education, science, social science, speech arts, and drama.
6. General Education Courses:
Science or mathematics (10 credits), Drama 437, Educ. 389 (Industrial Education), Engl. 466, Geog. 100, 300, or 202, Hist. 241 and *464. Home Economics 300, Home Economics 356 or Soc. 352, Journ. 326, Librarianship 451 and 452, *Psych. 100, *Public Health 461, Soc. 110, Speech 100.
7. Maintain a cumulative grade-point average of 2.2. A "C" average or better is required in education and in each field of emphasis.
8. A minimum of 35 quarter credits in residence in the senior year is required.
9. A maximum of 10 credits by extension or correspondence is allowed during the senior year.

Requirements for Teacher-Librarians

For curricula in the School of Librarianship, see page 188.

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.

*No substitutions permitted.

Special Certificates and Credentials

For information on special types of certificates and credentials, see the state bulletin on "Certification of Teachers and Administrators" which may be obtained from the State Office of Public Instruction at Olympia, Washington.

Renewal of Three-Year Teaching Certificates

Renewal of the University Three-Year Teaching Certificates must be made through the State Office of Public Instruction at Olympia some time before the expiration date of the original certificate, since a *lapsed certificate may be reinstated only upon completion of additional course work.*

Transfer Students

Requirements for graduation

Upon receipt of transcripts from institutions previously attended, the University of Washington Admissions' office will evaluate the student's record and designate deficiencies. From this evaluation the adviser and the student plan the program for the degree and for a teaching certificate.

In addition to the regular academic requirements the student must complete 9 credits of education at the University.

Certification requirements for graduate transfer students

Transfer students who have been graduated from an approved four-year 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 or Elementary Certificate is issued. Claims for exemption from specific requirements are passed upon by the Registrar and the Dean of the College of Education. After three quarters at the University of Washington, the student's grade point is based on grades received at this institution and must meet the 2.2 requirement to qualify for the secondary or elementary teaching certificate.

To meet the residence requirements for the Three-Year Secondary Certificate, it is necessary for a transfer student to earn 9 credits in education courses, 10 credits in the academic major, and 5 credits in each academic minor at the University of Washington.

To meet the residence requirements for the Three-Year Elementary Certificate, it is necessary for a transfer student to earn 9 credits in education courses and 5 credits in the Field of Emphasis at the University of Washington.

Students who are out-of-state graduates may certify through the State Department of Public Instruction at Olympia if they have been graduated from an approved teacher-training institution. The required course work may be taken at the University.

Copies of official University of Washington transcripts to be sent to Olympia may be applied for in room 109 Administration Building. Students who are offering work from other institutions in support of certification requirements should make application directly to the schools involved.

Bureau of Teacher Service and Placement

A Bureau of Teacher Service and Placement is maintained to assist qualified students and graduates in obtaining educational placement. Students who wish to use this service should have recommendations collected before leaving this University while their work and personal qualities are clear in the minds of their instructors. These records will then be available for use when needed. Students should register with the Bureau, 113 Education Hall, during their final year.

Requirements for Administrators' Credentials in Accredited Districts

All persons interested in administrative positions should note carefully the basic state requirements given below. Further details concerning administrators' credentials may be secured from the State Office of Public Instruction at Olympia.

Principals of elementary schools with six or more teachers must qualify for elementary principals' credentials; junior high school principals must qualify for junior high school principals' credentials; and high school principals devoting at least two

hours per day to intraschedule administrative duties must qualify for high school principals' credentials.

Principals of union high schools and superintendents of districts with one or more elementary schools and an accredited high school must qualify for superintendents' credentials.

A teaching certificate on the proper level is a prerequisite to an administrator's credential. This certificate must be kept in force to keep the credential valid.

Elementary Principal's Credential

- a. Two or more years of successful experience as principal of an elementary school of six or more teachers prior to September 1, 1936, *or*
- b. At least two years of successful teaching experience in the elementary school or the junior high school, plus 12 quarter credits of professional courses relating to elementary administration and supervision taken subsequent to at least one year of teaching experience. Not less than 6 of the required number of quarter credits must be from List A below and must cover at least 2 of the enumerated fields. The remaining credits may be from either list. Other courses within the field of elementary education may also be offered subject to evaluation. All courses presented toward satisfying the requirements for an elementary principal's credential must have been completed within ten years prior to date of application.

LIST A: Elementary Curriculum; Elementary Administration and Supervision; Elementary School Methods; Guidance.

LIST B: Tests and Measurements; Kindergarten; Health and Physical Education; Remedial Education.

An elementary certificate is a prerequisite to an elementary principal's credential.

Junior High School Principal's Credential

- a. Two or more years of successful experience as principal of a junior high school prior to September 1, 1936, *or*
- b. Completion of not less than four years of professional preparation and at least two years of successful teaching experience in the common schools, plus 12 quarter credits of professional courses relating to junior high school administration and supervision taken subsequent to at least one year of teaching experience. Not less than 6 of the required number of quarter credits must be from List A indicated below and must cover at least two of the enumerated fields. The remaining courses may be from either list. Other courses within the field of junior high school education may be offered subject to evaluation. All courses presented toward satisfying the requirements for a junior high school principal's credential must have been completed within ten years prior to date of application.

LIST A: Junior High School Administration and Supervision *or* High School Administration and Supervision; Junior High School Curriculum; Junior High School Methods; Guidance.

LIST B: Adolescence; Extracurricular Activities; Tests and Measurements; Health and Physical Education.

An elementary or secondary certificate is a prerequisite to a junior high school principal's credential.

Senior High School Principal's Credential

- a. Two or more years of successful experience as a high school principal prior to September 1, 1934, *or*
- b. At least two years of successful teaching experience on the secondary level, plus 12 quarter credits of professional courses relating to secondary organization, supervision, and administration taken subsequent to at least one year of teaching experience. Not less than 6 of the required number of quarter credits must be from List A (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 principals' credentials. It is also necessary to submit proof of having served in an elementary school of six or more teachers; and in the case of the high school experience, proof of having devoted at least two hours per day to administrative duties. Only a candidate who gained his experience prior to September 1, 1934, may qualify under Part b and not be in possession of both the elementary and senior high school principals' credentials.)
- c. At least two years of successful experience as principal of an elementary school of six or more teachers, plus 12 quarter credits of professional courses relating to organization, administration, and supervision in secondary schools taken subsequent to at least one year of teaching experience. These educational requirements are in addition to the minimum required for initial certification on the secondary level.
- d. A junior high school principal whose training has been on the secondary level may apply for a superintendent's credential on the basis of two years of successful experience as principal of a regularly organized junior high school, plus 24 quarter credits of professional courses relating to organization, administration, and supervision of elementary education taken subsequent to one year of teaching experience; a junior high school principal whose training has been on the elementary level, may apply for a superintendent's credential on the basis of two years of successful experience as principal of a regularly organized junior high school, plus 12 quarter credits relating to organization, administration, and supervision in secondary schools taken subsequent to one year of teaching experience; this provision does not rescind any regulations or requirements already in effect.
- e. At least two years of successful experience as a high school principal, head of a high school department, or supervisor, plus 24 quarter credits of professional courses relating to organization, administration, and supervision of elementary education taken subsequent to at least one year of teaching experience. While serving as a high school administrator, at least two hours per day must have been devoted to administrative duties. These educational requirements are in addition to the minimum required for certification on the secondary level. Not less than 6 of the required number of quarter credits must be from List A and must cover at least three of the enumerated fields, one of which must be school finance. The remaining credits may be from either list. Other courses within the prescribed field may be offered subject to evaluation.

Elementary Courses in Lieu of Experience:

- LIST A: Elementary Curriculum, Elementary School Administration and Supervision, Elementary School Methods, School Finance, Guidance.
 LIST B: Tests and Measurements, Kindergarten, Health and Physical Education, Remedial Education.

Secondary Courses in Lieu of Experience:

- LIST A: High School Administration and Supervision, High School Curriculum, Guidance, School Finance.
 LIST B: Educational Research, Extracurricular Activities, Health and Physical Education, Tests and Measurements.

It should be carefully noted that training may be substituted in lieu of administrative experience on one level or the other but not on both. In other words, a candidate for a superintendent's credential must have had at least two years of successful experience as a teacher, plus two years of successful experience as an elementary, junior, or senior high school principal, or as a supervisor or head of a department in a senior high school and as such have devoted at least two hours per day to administrative duties.

Courses that are not acceptable as graduate credit for the M.A. or Ph.D. degree at the University of Washington or the State College of Washington or at other institutions authorized to grant such degrees and accredited by the State Board of Education shall not be accepted for a superintendent's credential, except that when the teaching certificate has been earned in a secondary teacher-training institution one-half of the 24 academic credits in elementary education in lieu of elementary administrative experience required for the superintendent's credential may be secured on the undergraduate level at an elementary teacher-training institution maintaining a laboratory school. Courses completed more than ten years prior to applications are not acceptable. A course in School Finance is required for a superintendent's credential.

The superintendent's credential shall be valid for a principalship in any field of service for which the holder of the credential is properly qualified with a teacher's certificate.

A secondary teaching certificate is a prerequisite to a superintendent's credential, and must be kept in force during the time a person is using a superintendent's credential.

COLLEGE OF ENGINEERING

HAROLD E. WESSMAN, *Dean*, 206 Guggenheim Hall

Curricula and Degrees

The College of Engineering offers four-year curricula leading to the bachelor of science degree in aeronautical, chemical, civil, electrical, mechanical, mining, metallurgical, or ceramic engineering. All of these curricula are accredited by the Engineers' Council for Professional Development, which is the principal accrediting agency recognized by the engineering profession in the United States.

In addition to the four-year curricula, the college offers a course of study in industrial engineering for which a second bachelor's degree is awarded at the end of five years. The first four of these comprise the standard four-year curriculum of any one of the major branches of engineering in which the college grants a bachelor's degree, while the fifth year is made up of courses in industrial management and related subjects.

With minor exceptions, all curricula in the College of Engineering have a common freshman year administered by the General Engineering Department. Beyond the first year, the curriculum in each branch consists largely of prescribed technical subjects and studies in the humanistic-social area, the latter representing approximately 20 per cent of the total required credits. (Electives must be approved by the department adviser at the time the student registers for the courses. Air, Army, or Navy ROTC students may not use more than 9 quarter credits in advanced Air, Army, and Navy subjects to satisfy unrestricted elective credits appearing in any engineering curriculum.)

Teaching Certificate

Engineering students who plan to prepare for high school teaching should consult with the College of Education as soon as possible.

Advanced Degrees

Graduate study leading to the master's degree is available in each major curriculum. In addition, work leading to the Ph.D. degree in "Chemistry and Chemical Engineering" is offered by these two departments. Advanced study beyond the master's degree is available in several other departments by special arrangement. Graduate courses in engineering are listed in Section II under the respective departmental curricula. Course descriptions will be found in Section III of the *Catalogue*. Requirements for advanced degrees are discussed in the Graduate School section, page 200.

Professional Degrees

Requirements for professional degrees are given on page 209.

Fellowships, Scholarships, Prizes

Information concerning the fellowships, scholarships, prizes, and awards available at the University is given on page 112. Requests for information regarding those open to engineering students should be addressed to the University Scholarship Committee, 333 Student Union Building, University of Washington, Seattle 5. See page 83 for information in regard to Engineering Experiment Station Graduate Fellowships.

Admission Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 86-98. In addition to the all-University entrance requirements, the College of Engineering requires on unit* each of elementary algebra, plane geometry, physics†, and chemistry, and one-half unit each of advanced algebra and solid geometry. Trigonometry, although not required, is a recommended high school elective.

Students who plan to register in chemical engineering and who desire a foreign language in high school, are urged to take a year or more of German, as German will be of greatest usefulness to them.

It is strongly recommended that high school students make every possible effort to complete the foregoing list of required subjects before entering the engineering college. Under certain circumstances, however, and with the approval of the dean of the college, deficiencies in specific college requirements may be removed after entrance to the University. If a student who applies for admission to the College of Engineering has deficiencies in required subjects totaling more than one unit, he will normally be directed to register in the College of Arts and Sciences until the deficiencies are removed, at which time he will be permitted to transfer to engineering.

Admission to the College of Engineering is on a selective basis. Each applicant will be considered on the strength of his previous record, with special attention given to proficiency in English, mathematics, chemistry, and physics.

Students who become irregular in their college program because of the need for removing high school deficiencies, or for other reasons, may attend during the summer sessions to become regular again.

Preparation in Algebra

It is essential that students in engineering possess a good working knowledge of *algebra at the beginning of their course*. A test in high school algebra by class work and by examination will be given shortly after the beginning of the first quarter. Students failing in the test are not permitted to continue with regular freshman engineering mathematics, but are required to take a review of preparatory algebra (Mathematics I, College of Arts and Sciences) during the first quarter.

Humanistic-Social Studies

Under this heading is included an integrated succession of courses designed to develop facility in comprehensive reading in analysis of thought, and in oral and written expression. To ensure establishment and maintenance of these skills, the courses begin in the freshman year and—in as many as possible of the engineering curricula—continue in unbroken sequence through the three years following. Stress is laid on expository writing, particularly engineering reports, and on public speaking.

The subject matter covered, basically humanistic, is intended to acquaint the engineering student with the broad outline of human knowledge, setting before him the advance of civilization and introducing him to a few of its great thinkers, artists, and men of action. With this foundation, by the time he graduates, a student should be able to seek out and to attain for himself the additional knowledge, fuller appreciation, and sense of moral responsibility that distinguish the cultured citizen of today, whatever his vocation.

Scholarship Requirements

The all-University scholarship rule requires that any freshman student whose grade-point average for any quarter is less than 1.8 and any other undergraduate student whose grade-point average for any quarter is less than 2.0 shall be placed on the low scholarship list and referred to the dean for appropriate action.

In addition to the all-University scholarship requirements the scholarship rules of the College of Engineering provide:

*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.

Description of Courses

For descriptions of courses offered by the College of Engineering, see Section III.

THE ENGINEERING EXPERIMENT STATION

With some exceptions, all engineering research is carried on under the direction of the Board of the Engineering Experiment Station which administers a budget for research and the publication of significant results.

More than fifty research projects are currently in operation in the various departments represented by the station. The majority of these projects are financed by the University, and investigations are carried on by graduate research fellows under the supervision of the teaching faculty. The research fellow devotes one-half of his time to an assigned project in his major field of interest and may use his investigation as the subject matter for a graduate thesis.

Under this plan a generous number of grants-in-aid are available. A qualified graduate student receiving one of these awards may obtain a master's degree in five quarters. Also available are a number of opportunities for more intensive work in connection with certain sponsored research. The facilities of the engineering laboratories which are described in the following section are all available for research problems.

Requests for further information should be sent to Professor F. B. Farquharson, Director, Engineering Experiment Station, University of Washington, Seattle 5, Washington.

ENGINEERING LABORATORIES

Aeronautical Engineering. A small supersonic laboratory and five different wind tunnels are available for class instruction and research in the field of aerodynamics. Largest of the wind tunnels, the F. K. Kirsten Aeronautical Laboratory has been used for aerodynamic research and industrial testing since it was completed in 1937. It is a wind tunnel suitable for testing model airplanes with eight to ten foot span. It has a test section measuring 8 ft. by 12 ft., and its maximum air speed is 250 mph. The field of aeronautical structures is served by special equipment for studying the behavior of aircraft structures under load. Universal testing machines ranging in load capacity from 60,000 to 2,400,000 pounds are available in the Civil Engineering Structural Research Laboratory.

The department maintains a well-equipped machine and model shop, staffed by full-time employees, which is used by undergraduate and graduate students working on special problems.

Chemical Engineering. The Department of Chemical Engineering is housed in Daniel Bagley Hall where, in addition to well-equipped laboratories for instruction in chemistry, a number of laboratories with extensive special equipment are provided for students in chemical engineering courses. The two-story chemical engineering unit operations laboratory contains equipment for study of fluid flow, heat transfer, evaporation, absorption, distillation, centrifuging, drying, filtration, and crystallization. In a separate room is grinding and sieving equipment. An industrial chemistry laboratory has pilot-plant-size equipment for study of chemical processing. Unusually complete equipment is available for study of paper pulping processes on a pilot-plant basis, and for laboratory investigations of electrochemistry. Machine, instrument, and glass-blowing shops staffed by full-time employees are maintained. A wide variety of special equipment for research is used by seniors and graduate students for thesis investigations. A branch library in Bagley Hall houses a special collection of reference books and periodicals in chemistry and chemical engineering.

Civil Engineering. The University has the only large wind tunnel in the country for the aerodynamic testing of bridges. The recently completed More Hall houses the

modern structural, concrete, mineral aggregates, soil mechanics, bituminous, and sanitary engineering laboratories. The Structural Laboratory houses a 2,400,000-pound testing machine with 120 inches between screws, a number of smaller machines ranging in capacity from 60,000 to 300,000 pounds, and complete electronic apparatus for stress and strain measurement. The Concrete Laboratory contains exceptionally complete facilities for making, curing, and testing concrete specimens. The Aggregates Laboratory houses apparatus for testing the hardness, soundness, and wearing qualities of rock, and for unusually complete control of grading. The Soil Mechanics Laboratory is of top rank in this field, and is equipped for all generally recognized tests encountered in foundation and earthwork engineering. The Bituminous Laboratory contains apparatus for the usual tests required of asphaltic roadbuilding materials, and is exceptionally well-equipped for research in the design of stable bituminous surfacings. A complete Sanitary Engineering Laboratory for the chemical, bacteriological and microscopic analysis of water, sewage, and industrial wastes is available for both undergraduate and graduate study and professional research. The Hydraulics Laboratory, located on the shore of Lake Union, is equipped with the latest facilities for investigations and laboratory studies of many problems in experimental hydraulics and water-power. It is supplemented by a half-acre outdoor laboratory for construction and study of models of river channels.

Electrical Engineering. The Electrical Engineering Laboratories are all located in Electrical Engineering Hall, a modern, four-story building completed in 1948. The main laboratories are classified as follows: electrical machinery, communications, transients, impulse generator (high-voltage), power transmission line, illumination, industrial control, and electrical measurement. In addition, a number of smaller laboratories are available for research and special uses.

The large machinery laboratory is exceptionally well-equipped for the study and testing of direct and alternating current motors and generators, transformers, induction regulators, and other auxiliary equipment. Experiments involving the operation of electrical machines are also run in the adjacent industrial controls laboratory where power rectifiers, electronic apparatus, relays, and other necessary devices are available. The communications laboratory is equipped with the latest facilities for the study of vacuum tube circuits and equipment; wire transmission, including line characteristics, filters and other terminal apparatus; and ultra-high frequency theory and practice. The electrical measurements laboratory, used by all groups of students, is equipped for measuring a wide variety of electrical and magnetic quantities in addition to the basic measurement of voltage, current, and power.

The other laboratories are used for senior elective courses and graduate instruction. Included among the special laboratories are ten rooms, which accommodate from two to six students each, used for work on special problems and graduate research. One of these laboratories, located in a penthouse on the roof, is specially designed to house radio transmitting and receiving equipment, having antenna towers on the roof nearby. Also, one such room is assigned to the department's amateur radio club.

Mechanical Engineering. Mechanical Engineering laboratory facilities may be grouped into three main classifications. One group serves the courses in production methods and includes the conventional equipment of a foundry, forge and weld shop, and machine shop, together with special machines, such as the power-roll-over-and-rap and electronic profiler. Available also is appropriate testing and gaging apparatus, including physical testing equipment for foundry and core sands; electronic interferometer, and air precision gaging devices.

A second laboratory is equipped to exemplify practices and to provide for research projects in the heat-power field. It contains all of the common types of heat-power and refrigeration machines, steam engines and turbines, gas, gasoline and Diesel engines, with the necessary auxiliary equipment, such as dynamometers, condensers, and heat-exchangers for the study of heat balances. A gas turbine unit is arranged with complete instrumentation for a wide range of tests with provision for alternate combustion chambers and for water injection. A non-operating turbo-jet unit is available for study. Auxiliary equipment for flame propagation investigations in jet combustion chambers is available. Equipment for standard tests on centrifugal fans is also part of this laboratory. An adjunct laboratory is equipped for the testing of lubrication oils and fuels, including "knock" testing of gasoline.

A third laboratory provides facilities for the study of engineering materials. It has three universal testing machines, an impact machine, a fatigue machine, plastic molding equipment, very complete hardness testing equipment, metalloscope for metallographic investigations, apparatus for strength determination by photoelastic and electronic strain gage methods, and industrial X-ray and Zygo inspection equipment. Apparatus for the study of vibrations, including a torsigraph, is a part of this laboratory, as are devices for the study of engineering materials at high and low temperatures.

Mining Engineering. Laboratory facilities, located in Roberts Hall, include full-scale commercial equipment supplemented with laboratory testing machines of the latest design. Models and maps illustrate the large features of mine practice while power rock drills, placer drills, air compressors, electrical equipment, mine timber, etc., are available for the study of smaller details. Concentrating machinery for ore and coal occupies three floors in the laboratory, and analytical and microscope laboratories are available for the study of mineral products. Equipment is available to set up alternative flow sheets for a 50 lb. per hour concentration plant. A Franz iso-dynamic separator, a 36 in. heavy media plant, large Pissac and Baum coal jigs, Humphreys spiral separators for ore and coal, Dutch state cyclone and an electric static separator are among the mineral dressing equipment available.

Metallurgical Engineering. The upper floor of Roberts Hall houses the metallurgical laboratory. It contains facilities for making analyses, many types of furnaces for melting or treating ores and metals, equipment for polishing and examining metal specimens, including metallographic cameras, a number of student and research microscopes, a fuels analytical laboratory, a photographic darkroom, and equipment for testing the physical properties of metals such as hardness and tensile strength. A defraction X-ray laboratory equipped with a General Electric RXD machine is available for advanced work. Spectroscopy is studied in the Physics Department.

Ceramic Engineering. The ceramic laboratories occupy the central portion of Roberts Hall on three floors, and the kiln building nearby. Here are available a full range of testing and firing kilns for industrial wares and other products. Prominent among them are a special high temperature furnace for large ware and a large pottery kiln. All are oil or gas fired and are equipped with recording pyrometers. The mechanical equipment consists of grinding mills, mullers and grinding pans, physical testing equipment, microscopes with polishing and grinding wheels, a photographic darkroom, interferometer, thermalanalysis furnace, glazing hoods and spray equipment, pebble mills, and other grinding and crushing machinery, potters' wheels, molds and the small items required to make a laboratory complete for study in every phase of the ceramic industry. A defraction X-ray laboratory is available for advanced work on ceramic materials.

CURRICULA OF THE DEPARTMENTS OF ENGINEERING

FRESHMAN

(The same for all curricula.)

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
*Chem. 105. General.....	3	*Chem. 106. General.....	3	*Chem. 107. General.....	3
†Math. 151. Engr. Trig.....	3	Math. 152. Higher Algebra 3		Math. 153. Analytic Geom.	
G.E. 101. Engr. Drawing.....	3	G.E. 102. Engr. Drawing.....	3	and Calculus.....	5
G.E. 111. Engr. Problems 3		G.E. 112. Engr. Problems 3		G.E. 103. Drafting Probs. 3	
†P.E. 175. Hygiene.....	2	Air, Mil., or Nav. Sci. 2 or 3		†G.E. 121. Surveying.....	3
Air, Mil., or Nav. Sci. 2 or 3		P.E. Activity.....	1	†H.S.S. 140. Engr. Report	
P.E. Activity.....	1			Writing.....	1
				Air, Mil., or Nav. Sci. 2 or 3	
				P.E. Activity.....	1
	17 or 18		17 or 18		18 or 19

*Students without high school chemistry substitute Chem. 111 and 112 (5 cr. each) for Chem. 105 and 106.

†Students expecting to take chemical or ceramic engineering substitute Chem. 115, 116, and 135 (5 cr. each) for Chem. 105, 106, and 107.

†Chemical engineering students omit G.E. 121 and take P.E. 175 in the spring quarter.

†Students who have had high school trigonometry and also pass a qualifying examination may omit Math. 151 and take Math. 152.

†Mineral engineering students take H.S.S. 140 in the second quarter and H.S.S. 261 in the third quarter of the freshman year.

Aeronautical Engineering

DEGREES: Bachelor of Science in Aeronautical Engineering

(at end of fourth year) and

Master of Science in Aeronautical Engineering or Master of Science in Engineering
(at end of fifth year)

FRESHMAN

(The same for all engineering curricula)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Phy. 217. Physics for Engineers	4	Physics 218. Physics for Engineers	4	Phys. 219. Physics for Engineers	4
Math. 251. Engr. Calc. & Analytic Geom.	5	Math. 252. Engr. Calc.	3	Math. 253. Engr. Calc.	3
M.E. 201. Metal Castings	1	A.E. 200. Intro. to Aeronautics	2	C.E. 292. Mechanics	3
M.E. 220. Heat Engineering	3	C.E. 291. Mechanics	3	E.E. 300. Direct Currents	5
M.E. 260. Mechanism	3	M.E. 202. Welding	1	M.E. 203. Metal Machining	1
H.-S.S. 261. Techn. of Comm. I	1	Econ. 211. General Econ.	3	H.-S.S. 263. Tech. of Comm. III	1
Air, Mil., or Nav. Sci. 2 or 3	3	H.-S.S. 262. Tech. of Comm. II	1	P.E. Activity	1
P.E. Activity	1	P.E. Activity	1	Air, Mil., or Nav. Sci. 2 or 3	3
	20 or 21	Air, Mil., or Nav. Sci. 2 or 3	3		20 or 21

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
C.E. 293. Mechanics	3	A.E. 300. Aerodynamics	3	A.E. 301. Aerodynamics	3
C.E. 342. Hydraulics	5	M.E. 320. Thermodynamics	5	A.E. 302. Aerodynamics	3
E.E. 301. Alt. Currents	5	M.E. 340. Mater. of Engr.	3	A.E. 360. Aircr. Engines	3
H.-S.S. 331. Humanities I	3	M.E. 361. Machine Design	3	M.E. 341. Aircr. Materials	2
	16	H.-S.S. 332. Humanities II	3	M.E. 362. Machine Design	3
			17	H.-S.S. 491. Non-Tech. Read. I	1
					15

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
A.E. 303. Aerodynamics	3	A.E. 321. Aerodynamic Lab.	1	A.E. 311. Airplane Des. Loads	2
A.E. 320. Aerodynamic Lab.	1	A.E. 331. Aircr. Struc. Analysis	4	A.E. 340. Aircr. Struc. Des.	4
A.E. 330. Aircr. Struc. Analysis	4	A.E. 391. Seminar	0	A.E. 350. Aircr. Struc. Test	1
A.E. 390. Seminar	0	A.E. 410. Aerodynamic Design	4	A.E. 392. Seminar	1
Psych. 336. Industrial Psych.	3	B.A. 365. Industrial Relations	3	B.A. 207. Business Law	3
*Electives	4	*Electives	3	*Electives	4
	15		15		15

GRADUATE†

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
†Major Subjects	6	†Major Subjects	6	†Major Subjects	6
Analysis in Aeronautics	3	Analysis in Aeronautics	3	Related Subjects	6
Related Subjects	3	Related Subjects	3	Thesis	3
Thesis	3	Thesis	3		15
	15		15		

*Students planning graduate work must elect Math. 414.

†Requirements for advanced degrees will be found in the Graduate School section of the Catalogue. Selection of courses must in all cases be approved in advance by executive officer of the department.

‡A total of at least 18 credits must be selected from one of the options.

AERODYNAMICS OPTION

A.E. 505. Aerodynamics of Incompr. Fluids.....	3
A.E. 506. Aerodynamics of Incompr. Fluids.....	3
A.E. 508. Aerodynamics of Compr. Fluids.....	3
A.E. 509. Aerodynamics of Compr. Fluids.....	3
A.E. 512. Internal Aerodynamics.....	3
A.E. 513. Heat Transfer in Aeronautics.....	3
A.E. 516. Stability and Control.....	3
A.E. 550. Dynamics of the Airplane.....	3
A.E. 556. Aero-Elasticity..	3

STRUCTURES OPTION

A.E. 530, 531, 532. Theory of Elastic Structures...	9
A.E. 533. Theory of Plasticity.....	3
A.E. 540. Aircr. Struc. Prob.....	3
A.E. 541. Struc. Stab. Prob. in Aircraft.....	3
A.E. 542. Aircr. Struc. Design.....	3
A.E. 545. Exper. Stress Analysis.....	3
A.E. 550. Dynamics of the Airplane.....	3
A.E. 553. Aircraft Vibrations.....	3
C.E. 572. Theory of Elasticity.....	3

DYNAMICS OPTION

A.E. 530. Fund. Elas. Aircraft Struc.....	3
A.E. 545. Exper. Stress Analysis.....	3
A.E. 550. Dynamics of the Airplane.....	3
A.E. 551. Dynamics of the Airplane.....	3
A.E. 553. Aircraft Vibrations.....	3
A.E. 556. Aero-Elasticity.	3
A.E. 557. Nonlinear Probs. in Airpl. Dyn....	3
A.E. 560. Theory of Rocket Flight.....	3
A.E. 561. Servomech. and Autom. Control in Aeronautics.....	3

Chemical Engineering

DEGREES: Bachelor of Science in Chemical Engineering

(at end of fourth year) and

Master of Science in Chemical Engineering or Master of Science in Engineering
(at end of fifth year)**FRESHMAN**

(The same for all engineering curricula)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. Engr. 271.		Chem. Engr. 272.		Chem. Engr. 273.	
Industrial Chem. Calc. 3		Industrial Chem. Calc. 3		Industrial Chem. Calc. 3	
Chem. 355. Physical Chem. 3		Chem. 356. Physical Chem. 4		Chem. 357. Physical Chem. 3	
Physics 217. Engr. Physics 4		Physics 218. Engr. Physics 4		Physics 219. Engr. Physics 4	
Math. 251. Anal.		M.E. 202. Welding..... 1		C.E. 292. Mechanics..... 3	
Geom. & Calc..... 5		H.-S.S. 262. Comm.		M.E. 220. Heat Engineering..... 3	
H.-S.S. 261. Comm.		Tech. II..... 1		H.-S.S. 263. Comm.	
Tech. I..... 1		Electives..... 3		Tech. III..... 1	
P.E. Activity..... 1		P.E. Activity..... 1		P.E. Activity..... 1	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3	
19 or 20		19 or 20		20 or 21	

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. 335. Organic Chem. 3		Chem. 336. Organic Chem. 3		Chem. 337. Organic Chem. 3	
Chem. 345. Organic Chem. Lab..... 2		Chem. 346. Organic Chem. Lab..... 2		Chem Engr. 470. Unit Operations..... 3	
Chem. 358. Phys. Chem. Lab..... 3		Chem. 359. Phys. Chem. Lab..... 3		M.E. 203. Metal Machining..... 1	
E.E. 300. Direct Currents. 5		E.E. 301. Alt. Currents... 5		M.E. 361. Machine Design 3	
H.-S.S. 331.		Econ. 211. General Econ. 3		H.-S.S. 332.	
Humanities I..... 3		—		Humanities II..... 3	
16		16		*Electives..... 3	
				16	

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. Engr. 471.		Chem. Engr. 472.		Chem. Engr. 473. Unit Operations..... 4	
Unit Operations..... 4		Unit Operations..... 4		Chem. Engr. 483. Organic Chem. Industries..... 4	
Chem. Engr. 481. Chem. of Engr. Materials..... 4		Chem. Engr. 482. Inorg. Chem. Industries..... 2		Chem. Engr. 498. Thesis.. 2	
Chem. Engr. 498. Thesis.. 1		Chem. Engr. 498. Thesis.. 3		B.A. 207. Business Law.. 3	
Psych. 336. Industrial Psych..... 3		H.-S.S. 365. Industrial Rel. 3		H.-S.S. 493. Reading III.. 1	
H.-S.S. 491. Reading I... 1		H.-S.S. 492. Reading II.. 1		—	
*Electives..... 2		14		14	
15					

*All electives must be approved in advance by the department.

GRADUATE*

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Chem. Engr. & Allied Work	12	Chem. Engr. & Allied Work	12	Chem. Engr. & Allied Work	12
Chem. Engr. 600. Nonthesis Research	3	Chem. Engr. 600. Nonthesis Research	3	Chem. Engr. 600. Nonthesis Research	3
	<u>15</u>		<u>15</u>		<u>15</u>

Civil Engineering

DEGREES: Bachelor of Science in Civil Engineering
(at end of fourth year) and

Master of Science in Civil Engineering or Master of Science in Engineering
(at end of fifth year)

FRESHMAN

(The same for all engineering curricula)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Phys. 217. Engr. Phys.	4	Phys. 218. Engr. Phys.	4	Phys. 219. Engr. Phys.	4
Math. 251. Analytic Geom. and Calculus	5	Math. 252. Engr. Calc.	3	M.E. 260. Mechanism, or M.E. 220. Heat Engr.	3
C.E. 291. Mechanics	3	C.E. 292. Mechanics	3	C.E. 293. Mechanics	3
Econ. 211. Gen. Econ.	3	Geol. 310. Engr. Geol.	5	E.E. 300. Dir. Currents	5
H.-S.S. 261. Comm. Techniques I	1	H.-S.S. 262. Comm. Techniques II	1	H.-S.S. 263. Comm. Techniques III	1
P.E.	1	P.E.	1	P.E.	1
Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3
	<u>19 or 20</u>		<u>19 or 20</u>		<u>19 or 20</u>

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
C.E. 312. Route Surv.	3	C.E. 343. Hyd. Engr.	5	C.E. 314. Intermed. Surv. 3	3
C.E. 342. Hydraulics	5	C.E. 372. Struct. Anal.	3	C.E. 321. Roads & Pvmts. 3	3
C.E. 371. Struct. Anal.	3	C.E. 363. Timb.-Steel Lab. 3	3	C.E. 350. San. Science.	3
E.E. 301. Alt. Currents	5	C.E. 313. Location and Earthwork	3	C.E. 362. Cem.-Conc. Lab. 3	3
	<u>16</u>	H.-S.S. 491. Reading I.	1	C.E. 373. Struct. Anal.	3
			<u>15</u>	H.-S.S. 492. Reading II.	1
					<u>16</u>

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
C.E. 375. Struct. Design.	3	C.E. 376. Struct. Design.	3	C.E. 377. Struct. Design.	3
Tech. Elec.	3	Tech. Elec.	6	Tech. Elec.	5
C.E. 466. Soil Mechanics. 3	3	B.A. 365. Industrial Relations	3	B.Law 207. Bus. Law.	3
Psych. 336. Industrial	3	H.-S.S. 332. Human. II.	3	H.-S.S. 333. Human. III.	3
H.-S.S. 331. Human. I.	3				<u>14</u>
	<u>15</u>		<u>15</u>		

GRADUATE*

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
C.E. and Allied Work	9	C.E. and Allied Work	9	C.E. and Allied Work	9
Thesis	3	Thesis	3	Thesis	3
Electives†	3	Electives†	3	Electives†	3
	<u>15</u>		<u>15</u>		<u>15</u>

*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

	<i>Credits</i>		<i>Credits</i>
C.E. 315. Geod. Surv'g. & Photogrammetry	3	C.E. 509. Engineering Relations	2
C.E. 403. Regional Planning	3	C.E. 520. Seminar	2
C.E. 422. Railway Engineering	3	C.E. 523. Port Development	4
C.E. 423. River and Harbor Engineering	3	C.E. 547. Adv. Hydraulic Power	4
C.E. 424. Highway Design	3	C.E. 560. Photoelasticity	3
C.E. 426. Airfield Design	3	C.E. 567. Adv. Soil Mechanics	4
C.E. 428. Transportation Administration	3	C.E. 569. Applied Soil Mechanics	3
C.E. 445. Hydraulic Machinery	3	C.E. 571. Adv. Strength of Materials	3
C.E. 447. Hydraulic Power	3	C.E. 572. Theory of Elasticity	3
C.E. 448. Reclamation	3	C.E. 573. Elastic Stability	3
C.E. 455. Water Supply Problems	3	C.E. 581. Advanced Structures I	3
C.E. 458. Sewage Disposal	3	C.E. 582. Advanced Structures II	3
C.E. 459. Sanitary Design	3	C.E. 583. Advanced Structures III	3
C.E. 467. Earthwork Engineering	3	C.E. 595. Adv. Professional Design, H, M, S, W, or T,* max. credit in any one field	15
C.E. 468. Engineering Properties of Soils	3	C.E. 600. Nonthesis Research. Credit to be arranged.	
C.E. 485. Applied Structural Analysis	3		
C.E. 491. Special Senior and Graduate Courses in Professional Design, H, M, S, W, or T* (each)	3-5	Thesis. Max. total	9

Electrical Engineering

DEGREES: Bachelor of Science in Electrical Engineering
(at end of fourth year) andMaster of Science in Electrical Engineering or Master of Science in Engineering
(at end of fifth year)

FRESHMAN

(The same for all engineering curricula)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Physics 217. Engineering	4	Physics 219. Engineering	4	E.E. 225. D-C Mach.	6
Math. 251. Analytic Geom. and Calculus	5	Math. 252. Engr. Calculus	3	Math. 253. Engr. Calculus	3
E.E. 220. D-C Circuits	5	C.E. 291. Mechanics	3	C.E. 292. Mechanics	3
M.E. 201. Metal Castings	1	M.E. 220. Heat Engr.	3	M.E. 221. Mech. Engr. Lab.†	3
H.-S.S. 261. Comm. Tech- niques I	1	E.E. 221. D-C Meas.	2	H.-S.S. 263. Comm. Tech- niques III	1
P.E. Activity	1	H.-S.S. 262. Comm. Tech- niques II	1	P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3	P.E. Activity	1	Air, Mil., or Nav. Sci. 2 or 3	3
	19 or 20	Air, Mil., or Nav. Sci. 2 or 3	3		19 or 20

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
E.E. 320. A-C Circuits	5	E.E. 340. A-C Mach.†	4	E.E. 420. Vac. Tubes and Electronics	6
M.E. 202. Welding	1	E.E. 341. A-C Mach. Lab.†	4	E.E. 450. Adv. A-C Mach.†	6
M.E. 260. Mechanism	3	M.E. 203. Metal Machin- ing	1	H.-S.S. 333. Humanities III	3
M.E. 340. Eng. Materials	3	M.E. 361. Machine Design	3		15
H.-S.S. 331. Humanities I	3	H.-S.S. 332. Humanities II	3		
	15		15		

All electives must be approved by the head of the department.

*Hydraulics (H), Materials (M), Structural (S), Sanitary (W), and Transportation (T).

†Students with a cumulative grade point of 3.0 or better and who plan to study for an M.S. degree may substitute Math. 414 and 415 for M.E. 221 and 362.

‡Communication majors should substitute E.E. 360, 361, and 470 for E.E. 340, 341, and 450.

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
E.E. 460. Vac. Tube Circuits*	6	E.E. 425. Transients	4	E.E. Group	3
Econ. 211. Economics	3	E.E. 429. Field Theory	3	B.Law. 207. Business Law	3
M.E. 362. Mach. Design†	3	Phys. 355. Modern Physics	3	B.A. 365. Indus. Relations	3
Psych. 336. Industrial	3	C.E. 445. Hydraulics	5	Electives	5
H.-S.S. 491. Reading I	1	H.-S.S. 492. Reading II	1	H.-S.S. 493. Reading III	1
	16		16		15

GRADUATE‡

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
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

UNDERGRADUATE TECHNICAL ELECTIVES

E.E. group requirements must be satisfied by selection from the following courses:

<i>POWER</i>	<i>Credits</i>	<i>COMMUNICATION</i>	<i>Credits</i>
E.E. 430, 431. Individual Projects (each)	2-5	E.E. 430, 431. Individual Projects (each)	2-5
E.E. 445. Elec. Measurements	3	E.E. 470. Communication Networks	6
E.E. 446. Elec. Machine Design	3	E.E. 473. High-frequency Circuits and Tubes	5
E.E. 451. Illumination	3	E.E. 479. Radio Design	2
E.E. 453. Electric Power Systems	3		
E.E. 457. Industrial Control	3		

COURSES FOR GRADUATES ONLY

	<i>Credits</i>		<i>Credits</i>
E.E. 510. Advanced Circuit Theory I	3	E.E. 560. Wave Phenomena	4
E.E. 511. Network Analysis	3	E.E. 562. Adv. Vacuum Tubes	4
E.E. 512. Advanced Circuit Theory II	3	E.E. 564. High-frequency Techniques	5
E.E. 514. Power System Analysis	5	E.E. 566. Microwave Measurements	2
E.E. 515. Meas. and Circuit Comp.	3	E.E. 567. Microwave Vacuum Tubes	5
E.E. 520, 521, 522. Seminar	0-0-2	E.E. 570. Radiation and Prop'n.	4
E.E. 541. Advanced Transients	5	E.E. 579. Wave Propagation	6
E.E. 543. Symmetrical Components	3	E.E. 580. Electroacoustics	5
E.E. 545. Power Transmission	5	E.E. 582. Servomech. in Elec. Engr.	4
E.E. 547. Adv. Power Systems	5	E.E. 600. Nonthesis Research	2-5
		Graduate Thesis	

Industrial Engineering

DEGREE: Bachelor of Science in Industrial Engineering

Requirement for Admission: A Bachelor of Science degree in any one of the branches of engineering in which the College of Engineering offers a four-year curriculum.

The degree will be granted following the successful completion of 45 credits in the courses listed below:

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Acctg. 151. Accounting	3	M.E. 410. Prod. Mgmt.	3	M.E. 411. Prod. Cost Anal.	3
Fin. 201. Bkg. and Bus.	5	Acctg. 310. Accounting	5	Acctg. 330. Accounting	5
Electives	7	Fin. 301. Corp. Fin.	5	Electives	6
		Electives	3		

Students who plan to take this degree should take Acctg. 150, Principles of Accounting, as an elective subject for the first bachelor's degree. Those who fail to do so will need to take Acctg. 150 in addition to the courses listed above, during their fifth year. This will require the completion of Acctg. 330 by extension or in residence during the fourth quarter.

Prod. 301 may be substituted for M.E. 410, and Prod. 351 for M.E. 411 in case of conflicts or other schedule difficulties.

Mechanical Engineering

DEGREES: Bachelor of Science in Mechanical Engineering
(at end of fourth year) and

Master of Science in Mechanical Engineering or Master of Science in Engineering
(at end of fifth year)

*Power majors may substitute E.E. 440 and 2 hours of E.E. Group for E.E. 460.

†Students with a cumulative grade point of 3.0 or better and who plan to study for an M.S. degree may substitute Math. 414 and 415 for M.E. 221 and 362.

‡Requirements for advanced degrees will be found in the Graduate School section. Candidates for an M.S. degree must have Math. 414 (or its equivalent) in their undergraduate work.

FRESHMAN

(The same for all engineering curricula)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Phys. 217. Engr. Physics.. 4		Phys. 218. Engr. Physics.. 4		Phys. 219. Engr. Physics.. 4	
Math. 251. Analytic Geom. and Calculus 5		Math. 252. Engr. Calculus 3		C.E. 292. Mechanics..... 3	
M.E. 201. Metal Castings. 1		C.E. 291. Mechanics..... 3		M.E. 203. Metal Machin- ing 1	
M.E. 220. Heat Engineering 3		M.E. 202. Welding..... 1		M.E. 221. Mech. Engr. Lab. 3	
M.E. 260. Mechanism..... 3		Econ. 211. Gen. Econ. 3		B Law 207. Business Law. 3	
H.-S.S. 261. Comm. Tech- niques I 1		H.-S.S. 262. Comm. Tech- niques II 1		H.-S.S. 263. Comm. Tech niques III 1	
P.E. Activity 1		P.E. Activity 1		P.E. Activity 1	
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3	
20 or 21		18 or 19		18 or 19	

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
M.E. 305. Tooling for Production 1		M.E. 306. Prod. Techniques 1		M.E. 307. Prod. Planning. 1	
M.E. 320. Thermodynamics 5		M.E. 322. Exper. Engr. 3		M.E. 323. Exper. Engr. 3	
M.E. 340. Engr. Materials 3		M.E. 361. Machine Design 3		M.E. 362. Machine Design 3	
C.E. 293. Mechanics..... 3		M.E. 365. Dynamics of Engines 2		M.E. 366. Dynamics of Engines 2	
H.-S.S. 331. Human. I... 15		E.E. 300. Direct Currents 5		E.E. 301. Alt. Currents... 5	
		H.-S.S. 332. Human. II... 3		H.-S.S. 333. Human. III. 3	
		17		17	

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
M.E. 481. Int. Comb. Engines 3		M.E. 463. Machine Design 2		H.-S.S. 493. Reading III. 1	
C.E. 342. Hydraulics..... 5		M.E. 482. Int. Comb. Eng. Lab. 3		Electives* 14	
Psych. 336. Industrial... 3		B.A. 365. Industrial Relations 3		15	
H.-S.S. 491. Reading I... 1		H.-S.S. 492. Reading II... 1			
Electives* 3		Electives* 6			
15		15			

GRADUATE†

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
M.E. and Allied Work.... 12		M.E. and Allied Work.... 12		M.E. and Allied Work.... 12	
Thesis 3		Thesis 3		Thesis 3	
15		15		15	

SENIOR AND GRADUATE TECHNICAL ELECTIVE COURSES

All electives must be approved in advance by the department.

<i>Credits</i>	<i>Credits</i>
M.E. 341. Aircraft Materials..... 2	M.E. 483. Internal Combustion Engine Design 3
M.E. 410. Production Management..... 3	M.E. 490. Naval Architecture..... 3
M.E. 411. Production Cost Analysis..... 3	M.E. 491. Naval Architecture..... 3
M.E. 415. Quality Control..... 3	M.E. 492. Naval Architecture..... 3
M.E. 417. Methods Analysis..... 3	M.E. 541. Advanced Engineering Materials 3
M.E. 424. Power Plants..... 5	M.E. 543. Exper. Mechan. of Matls. 3
M.E. 425. Air Conditioning..... 3	M.E. 544. Engr. Instrumentation..... 3
M.E. 428. Refrigeration..... 3	M.E. 584. Advanced Internal Combustion Engines 2
M.E. 433. Marine Engineering..... 3	M.E. 600. Nonthesis Research..... 2.5
M.E. 464. Machine Design..... 2	
M.E. 468. Vibrations of Machinery..... 3	

*Not less than 15 elective credits shall be technical.

†Requirements for advanced degrees will be found in the Graduate School section.

MINERAL ENGINEERING

DRURY A. PIFER, *Director*, 328 Roberts Hall

DEGREES: Bachelor of Science in Mining, Metallurgical, or Ceramic Engineering
(at end of fourth year) and
Master of Science in Mining, Coal Mining, Metallurgical, or Ceramic Engineering.
Master of Science in Metallurgy or Ceramics, or Master of Science in Engineering
(at end of fifth year)

Prospector's Course

The Prospector's Course is open without examination to all men past high school age. The course is repeated each quarter except in summer. 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 each course. For full information address the Director of the School.

Mining Engineering

FRESHMAN

(The same for all engineering curricula)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 221. Elements....	3	Mining 222. Methods....	3	Chem. 221. Quant. Anal....	5
Geol. 205. Rocks and Minerals.....	5	Physics 218. Engr. Physics	3	C.E. 314. Intermed. Survey	3
Physics 217. Engr. Physics	4	Math. 252. Engr. Calculus	3	Geol. 221. Mineralogy....	5
Math. 251. Anal. Geom. & Calculus.....	5	Econ. 211. General.....	3	Physics 219. Engr. Phys....	4
P.E. Activity.....	1	H.-S.S. 265. Comm. Tech-niques II.....	3	P.E. Activity.....	1
Air, Mil., or Nav. Sci. 2 or 3	3	P.E. Activity.....	1	Air, Mil., or Nav. Sci. 2 or 3	3
	20 or 21	Air, Mil., or Nav. Sci. 2 or 3	3		19 or 20

Practice in mining, geology, metallurgy, or milling in summer vacation.

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 461. Minrl. Prep....	3	Mining 462. Minrl. Con-centration.....	4	Mining 430. Surveying....	2
C.E. 291. Mechanics.....	3	C.E. 292. Mechanics.....	3	Met. 301. Fire Assay....	3
Geol. 323. Optical Mineral	5	Geol. 324. Petrology.....	5	Min. 306. Mine Excursion	1
H.-S.S. 331. Humanities	1	E.E. 300. Dir. Currents....	5	E.E. 301. Alt. Currents....	5
*Electives.....	3			H.-S.S. 332. Humanities	3
	17		17	II.....	3
				*Electives.....	3
					17

Mining, geology, or milling practice in summer vacation.

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Mining 480. Valuation....	2	Mining 223. Rescue Training.....	1	Mining 307. Mine Excursion.....	1
Mining 498. Thesis.....	2	Mining 481. Economics....	3	Mining 432. Mine Engr....	4
Met. 441. Engr. Physical..	4	Mining 485. Nonmetallic Industry.....	3	Mining 482. Min. Ind. Mgt.....	3
H.-S.S. 333. Humanities	3	Mining 498. Thesis.....	5	Mining 498. Thesis.....	1
III.....	3	Geol. 427. Ore Deposits..	5	H.-S.S. 491. Reading I....	1
Electives*.....	5	Electives*.....	3	Electives*.....	6
	16		17		16

*Electives must be approved in advance by the head of the department.

Metallurgical Engineering**FRESHMAN**

(The same for all engineering curricula)

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Math. 251. Analytic Geom. and Calculus	5	Math. 252. Calculus	3	Math. 253. Calculus	3
Physics 217. Engr. Physics	4	Physics 218. Engr. Physics	4	Physics 219. Engr. Physics	4
C.E. 291. Mechanics	3	Met. 203. Elements	3	Physics 229. Pyrometry	2
Chem.E. 271. Ind. Chem. Calc.	2	C.E. 292. Mechanics	3	Chem. 221. Quant. Analysis	5
M.E. 201. Metal Casting	1	Chem.E. 272. Ind. Chem. Calc.	2	M.E. 203. Metal Machining	1
H.-S.S. 261. Comm. Techniques I	1	H.-S.S. 262. Comm. Techniques II	1	H.-S.S. 263. Comm. Techniques III	1
P.E. Activity	1	P.E. Activity	1	P.E. Activity	1
Air, Mil., or Nav. Sci.	2 or 3	Air, Mil., or Nav. Sci.	2 or 3	Air, Mil., or Nav. Sci.	2 or 3
	19 or 20		19 or 20		19 or 20

Metallurgical, milling, or industrial plant practice in summer vacation.

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Met. 361. Physical Met.	3	Met. 362. Physical Met.	3	Met. 306. Excursion	1
Mining 461. Mineral Prep.	3	Met. 471. Fuels Tech.	3	Met. 321. Nonferrous Met.	3
Physics 250. Thermodynamics and Heat	3	Met. 472. Fuels Tech. Lab.	1	Met. 363. Physical Met.	3
Chem. 351. Physical	3	Mining 462. Mineral Concentration	4	M.E. 202. Welding	1
E.E. 300. Dir. Currents	5	Chem. 352. Physical	3	E.E. 301. Alt. Currents	5
	17	H.-S.S. 302. Tech. Writing	3	Electives	3
			17		16

Metallurgical or milling practice in summer vacation.

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Met. 322. Met. Calculations	3	Met. 323. Adv. Nonferrous	3	Met. 307. Excursion	1
Met. 455. Iron and Steel	3	Met. 481. Economics	3	Met. 498. Thesis	1
Met. 498. Thesis	2	Met. 498. Thesis	2	H.-S.S. 333. Humanities III	3
H.-S.S. 331. Humanities I	3	H.-S.S. 332. Humanities II	3	Electives*	10
Electives*	5	Electives*	3		15
	16		14		

Ceramic Engineering**FRESHMAN**

The freshman year curriculum is the same as for all other curricula in the College of Engineering except that Chem. 115-116 and 221 (5-5, 5) are required.

SOPHOMORE

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Math. 251. Engr. Calc.	5	Math. 252. Calculus	3	Math. 253. Calculus	3
Chem. 355. Physical	3	Chem. 356. Physical	3	Chem. 357. Physical	3
Physics 217. Engr. Phys.	4	Physics 218. Engr. Phys.	4	Physics 219. Engr. Phys.	4
H.-S.S. 261. Comm. Tech. I	1	H.-S.S. 262. Comm. Tech. II	1	H.-S.S. 263. Comm. Tech. III	1
Art 303. Ceramic Art	3	M.E. 202. Welding	1	M.E. 203. Metal Machining	1
P.E. Activity	1	Cer.E. 201. Introduction	2	Cer.E. 203. Cer. Processes	3
Air, Mil., or Nav. Sci.	2 or 3	Cer.E. 202. Materials	2	P.E. Activity	1
	19 or 20	P.E. Activity	1	Air, Mil., or Nav. Sci.	2 or 3
		Air, Mil., or Nav. Sci.	2 or 3		18 or 19
			19 or 20		

Ceramics industrial practice in summer vacation.

*Electives must be approved in advance by the head of the department. Electives should be selected in the process and plant metallurgy group or in the physical metallurgy group.

JUNIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
C.E. 291. Mechanics.....	3	Cer.E. 302. Forming.....	2	Cer.E. 303. Coatings.....	2
Cer.E. 311. Physical Cer..	3	Cer.E. 312. Physical Cer..	3	Cer.E. 304. Drying	
Chem.E. 271. Industrial... 2		Chem.E. 272. Industrial... 2		and Firing.....	3
Physics 250. Heat.....	3	H.-S.S. 332. Humanities		Cer.E. N306. Excursion...	0
H.-S.S. 331. Humanities I	3	II.....	3	H.-S.S. 333. Humanities	
Electives.....	3	C.E. 292. Mechanics.....	3	III.....	3
	17	Electives.....	3	Physics 229. Pyrometry...	2
			16	Electives.....	6
					16

Ceramics industrial practice in summer vacation.

SENIOR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Cer.E. 411. Physical Cer..	2	Cer.E. 402. Kiln Design...	2	Cer.E. N307. Excursion...	0
Cer.E. 470. Refractories...	3	Cer.E. 498. Thesis.....	2	Cer.E. 403. Plant Design.	2
Cer.E. 498. Thesis.....	2	B.A. 365. Industr.		Cer.E. 498. Thesis.....	1
H.-S.S. 491. Nontech.		Relations.....	3	Psych. 336. Industrial...	3
Reading.....	1	Electives*.....	8	Electives*.....	9
Electives.....	6		15		15
	14				

DEPARTMENT OF AIR SCIENCE AND TACTICS

(AIR ROTC)

The Department of Air Science and Tactics was authorized and officially organized on September 1, 1949 to operate on coequal status with the Department of Military Science and Tactics and the Department of Naval Science.

The new Department of Air Science and Tactics offers curricula pertinent to the role of the Air Force in the National Defense Department.

Within quota limitations (approximately two Army ROTC students to one Air ROTC student), male freshmen may elect to enroll in the Air ROTC course for the two years of basic military training required by the University.

The freshman enrolled in the First Year Basic Course Air ROTC will undertake a course of study designed to give him a general knowledge of military procedures and doctrines (i.e., Air Force organization and military problems of the United States). This course of study requires classroom attendance of two hours per week. The student will also be introduced to the basic principles of leadership through the practice of drill one hour per week. The various aspects of the course in Leadership, Drill, and Exercise of Command will extend throughout the two years of Basic Air ROTC and for those accepted, the two years of Advanced Air ROTC.

In the sophomore year or Second Year Basic Course Air ROTC, the emphasis is shifted to courses more intimately associated with the United States Air Force. The Air ROTC student studies Aerodynamics, Propulsion, Weather, Navigation, and Applied Air Power. The student also receives introduction into a field of specialization such as Administration or Aircraft Maintenance Engineering.

Each Fall Quarter a limited number of outstanding Basic Air ROTC students who have completed their Basic Courses are enrolled in the Advanced Course. This course is designed to produce professionally qualified officers for Regular or Reserve Commissions in the United States Air Force. All students accepted must:

1. Have successfully completed the two-year Basic Air ROTC Course (membership in a reserve unit cannot be substituted for any portion of the Basic Course).
2. Execute a written agreement with the government to complete the Advanced Course, contingent upon remaining in University, and to attend the Advanced Course Summer Camp at the time specified.
3. Not have reached twenty-seven years of age at the time of initial enrollment in the Advanced Course.
4. Have successfully completed such general survey and screening tests as may be prescribed.
5. Be selected by the Professor of Air Science and Tactics and the President of the University.

*Electives must be approved in advance by the head of the department.

The Advanced Course is unique in one respect. Each Air ROTC student is paid a monetary allowance, presently amounting to approximately \$27 per month during the two academic years of advanced Air ROTC.

A Summer Camp of six weeks' duration is provided for Advanced Course students who have completed the Basic Course and the first year of the Advanced Course. While attending Summer Camp each student is paid at the rate of \$80 per month and is furnished travel to and from camp, subsistence, housing, uniforms, and medical attention at government expense.

The granting of a commission as Second Lieutenant, United States Air Force Reserve, upon graduation from the Advanced Course and the University of Washington, does not obligate the individual to take a period of active duty, although he may do so if he so desires.

All Air ROTC students, both Basic and Advanced, are furnished complete uniforms of the type presently worn by officers of the United States Air Force. Normally students are required to appear in uniform once each week on drill days. Wearing of the uniform to regular Air ROTC classes is optional. Each student is also required to make a \$25 uniform deposit to the University prior to registration. This deposit is returned to the student upon return of the uniform to the University.

The Department of the Air Force furnishes all necessary textbooks for classroom use and outside preparation.

Participation in the Air ROTC program may permit deferment from the draft under the Selective Service Act of 1948. The University of Washington Air ROTC Detachment is granted yearly deferment quotas.

Further questions concerning deferments or other Air ROTC matters should be addressed to the Professor of Air Science and Tactics.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

(ARMY ROTC)

Military training has been given at the University of Washington since 1875 with the exception of a brief period early in the present century.

The present Reserve Officers Training Corps functions under the provisions of the national Defense Act of June 4, 1920, and directives of the Department of the Army based on that act.

The postwar Reserve Officers Training Corps program of instruction is divided into two phases: Basic Training and Advanced Training. The Basic Course consists of formal instruction for three hours per week for two academic years of thirty-two weeks each. Participation in this course is required on the part of all qualified male students. See page 114. Qualifications are in accordance with University requirements and Department of the Army directives. Students who have had previous Military Training or Service will receive credit toward advanced standing in the ROTC.

The Advanced Course consists of formal instruction for five hours per week for two academic years of thirty-two weeks each, plus a summer camp of six weeks' duration which is attended between the first and second years of the Advanced Course.

Enrollees in the Advanced Course are chosen from among the highest qualified students who have successfully completed the Basic Course or have equivalent previous military training or service.

The regulation ROTC uniform is issued for use of the elementary students at the University of Washington. Each student makes a \$25 uniform deposit to the University. From this deposit the University collects the cost of articles lost by the student, or of damage to them due to other than fair wear and tear while in his possession. In case the student after registration withdraws from military science, his deposit, less the cost of any article lost or damaged, is returned to him upon presentation of a properly authenticated slip to the University cashier.

Unless otherwise directed the uniform is worn at all military formations.

Uniforms are returned to the Department of Military Science and Tactics at the end of each academic year by those students who have not terminated residence earlier.

For the Advanced Course students, the Department of the Army will provide a special officer-type uniform.

Textbooks and equipment are provided for all classes.

Advanced Course students are paid a monetary allowance at a daily rate equal to the value of the commuted ration. Emoluments are in addition to benefits received through the G.I. Bill of Rights.

DEPARTMENT OF NAVAL SCIENCE

(NAVY ROTC)

Regular Students

At the beginning of the Autumn Quarter each year a limited number of freshmen are appointed Midshipmen, USNR, and enrolled as regular NROTC students. Those students enrolled are selected on the basis of a nationwide competitive examination held during the preceding winter. The following general qualifications are listed:

1. Be eligible for admission to an NROTC college.
2. Be a male citizen of the United States between the ages of seventeen and twenty-one upon entrance.
3. Meet physical requirements comparable with those for entry to the U.S. Naval Academy.
4. Be unmarried and agree to remain unmarried until commissioned.
5. With consent of parent, agree to complete the four-year course unless released by reason of academic or physical failure, and to serve on active duty for two years as a commissioned officer in the U.S. Navy or U.S. Marine Corps.
6. Agree to take, during summer vacations, three practice cruises of about eight weeks each.
7. Students with previous college attendance are eligible if they meet the above qualifications and agree to remain in college for four additional years.

Men in the regular NROTC program receive books, tuition, incidental fees, and uniforms at government expense plus \$600 a year retainer pay.

Contract Students

A limited number of contract students are selected each year by the Professor of Naval Science. Contract students must:

- (a) Meet requirements 1, 2, 3, 4, and 7 above.
- (b) Agree to make one summer cruise of about three weeks' duration between junior and senior years.
- (c) Agree in writing to accept a commission if offered, and to serve, subject to call of the Secretary of the Navy, for a period of two years. This agreement entitles them to deferment from induction under the Selective Service Act of 1948.

Contract students have the status of civilians entering into a mutual contract with the Navy, and are in training for commissions in the Naval Reserve or Marine Corps Reserve. They pay their own college expenses except that they receive a subsistence allowance (currently 90 cents per day) during their junior and senior years, including the intervening summer. Uniforms and Navy books are also furnished.

General

While at the University, regular students may take any course leading to a baccalaureate degree except the following: premedicine, medicine, pharmacy, premedical, dentistry, preveterinary, veterinary medicine, pretheological, theology, music, and art. Contract students may take any course leading to a baccalaureate degree. Both regular and contract students must include thirty-six quarter hours of Naval Science subjects during the four-year course.

Students desiring to be commissioned in the Supply Corps of the Navy or Naval Reserve take Supply subjects during their senior year. Those desiring commissions in the Marine Corps or Marine Corps Reserve take Marine subjects during the last five quarters.

In addition to the Naval Science curriculum, all NROTC students must complete mathematics through plane trigonometry and one year of college physics by the end of their sophomore year.

Inquiries regarding entry as a regular student should be made during the months of September or October of the year previous to entry from the Office of Naval Officer Procurement, Federal Office Building, Seattle, or from the Professor of Naval Science, University of Washington.

The Professor of Naval Science accepts applications for contract enrollment beginning on or about May 15 of the year a student desires to enter. Enrollments are made only at the beginning of Autumn Quarter each year.

THE FAR EASTERN AND RUSSIAN INSTITUTE

GEORGE E. TAYLOR, *Director*, 406 Thomson Hall

The Far Eastern and Russian Institute has been established to integrate the graduate and undergraduate instruction and research in Far Eastern and Russian studies, to provide adequate library facilities, and to cooperate with other institutes in America and abroad. The undergraduate degrees will be taken in the Far Eastern or a related department. Graduate degrees will be sponsored by the institute in co-operation with the colleges and departments concerned. Faculty members working in Far Eastern or Russian studies, although they may belong to departments other than the department of Far Eastern and Slavic Languages and Literature, will be members of the institute. Work is offered on China, Japan, the U.S.S.R., Korea, Mongolia, the Philippine Islands, Indonesia, and the countries of Southeast Asia. For full information, address an inquiry to the director of the institute.

COLLEGE OF FORESTRY

GORDON D. MARCKWORTH, *Dean*, 206 Anderson Hall

DEGREE: Bachelor of Science in Forestry

The College of Forestry is fully accredited by the Society of American Foresters and offers four-year curricula leading to the degree of Bachelor of Science in Forestry with specialization in forest management, logging engineering, and forest products. The curriculum for the first two years is the same for all fields of specialization, with special curricula for each in the junior and senior years.

Advanced Degrees. At least a year of graduate study, leading to the degree of Master of Forestry or Master of Science in Forestry, is available in each major curriculum. Under certain conditions, students may be accepted as candidates for the degree of doctor of philosophy. Requirements for advanced degrees are discussed in the Graduate School section, page 211.

Admission Requirements

For detailed information concerning University fees, expenses, and admission requirements, see pages 86-98. 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. (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.)

Qualifying examinations are required in elementary composition. Applicants who fail in this examination must register in English 50 without credit.

In satisfying entrance requirements with college courses, a minimum of 10 credits is counted as the equivalent of the entrance unit.

As the forestry curriculum is one of specialized training, students entering from junior colleges or similar institutions, cannot complete the requirements for graduation in less than three years. Forestry courses, other than an introductory course, will be accepted only from accredited forestry schools. Exceptions may be made only upon approval of the faculty.

Scholarship Requirements

The general University scholarship rule requires that a student be placed on low scholarship and reported to the dean of his college if his cumulative grade-point average falls below 1.8 in the freshman year or below 2.0 thereafter. Students continuing on low scholarship will be dropped from the College of Forestry.

Students transferring from other institutions must have a cumulative grade-point average of 2.5 to be eligible for entrance.

Fellowships, Scholarships, Prizes. See page 112.

Requirements for Graduation

For the degree of Bachelor of Science in Forestry, the student must complete the requirements outlined in the major curriculum selected and must meet the all-University requirements for graduation. (See page 102.) Electives must be approved by the student's faculty adviser.

Army, Navy, and Air Force students may use not more than 9 quarter credits in advanced Army, Navy, or Air Force subjects to satisfy unrestricted elective credits in the College of Forestry.

Lower-Division Curriculum

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 101. For. Develop....	3	For. 130. Elem. For. Fire Control	3	For. 103. For. Problems..	3
Bot. 114. (Foresters)....	3	Bot. 115. (Foresters)....	3	For. 106. Dendrology....	3
Math. 154	3	English 101	3	G.E. 107	3
Physics 104 or 121.....	5	Math. 155	3	Math. 156	3
P.E. 175	2	Physics 105 or 122.....	5	Physics 106 or 123.....	5
P.E. Activity	1	P.E. Activity	1	P.E. Activity	1
Air, Mil., or Nav. Sci..2 or 3		Air, Mil., or Nav. Sci..2 or 3		Air, Mil., or Nav. Sci..2 or 3	
	19 or 20		20 or 21		20 or 21

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 107. Dendrology....	3	For. 260. Mensuration....	5	For. 220. Silviculture....	2
For. 205. Gen. Lbr.....	3	Bot. 116. (Foresters)....	3	For. 261. Mensuration....	6
Chem. 111 or 115.....	5	Chem. 112 or 116.....	5	C.E. 256. Surveying.....	8
Econ. 211	3	Geology 215	3	P.E. Activity	1
English 102	3	P.E. Activity	1	Air, Mil., or Nav. Sci..2 or 3	
P.E. Activity	1	Air, Mil., or Nav. Sci..2 or 3			
Air, Mil., or Nav. Sci..2 or 3			19 or 20		19 or 20
	20 or 21				

Upper-Division Curriculum

Beginning with the third year, the student will, with the approval of his faculty adviser, elect to follow one of the specialties in forestry. (See prerequisites under description of courses.)

Forest Management Curriculum

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 306. Wood Tech....	4	For. 322. Silv. Methods... 3		For. 423. Apl. Silv.....	4
For. 310. For. Soils.....	3	For. 373. For. Utilization. 5		For. 430. Adv. Fire	
For. 321. Silvics.....	3	For. 440. Construction....	4	Control	3
For. 403. Timber Physics. 3		Electives	3	Bot. 361. For. Path.....	5
English 153	3		15	C.E. 315. Photogrammetry 3	
	16				15

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 408. Econ. & Fin....	5	For. 335. Insect Control... 3		For. 466. Mgt. Surveys... 5	
For. 441. Log. Eng.....	5	For. 409. For. Policy.....	3	For. 467. Mgt. Inventories 5	
Acctg. 150. Accounting... 3		For. 460. For. Mgt.....	5	For. 468. Mgt. Studies... 4	
Electives	2	Electives	3	For. 469. Mgt. Reports... 2	
	15		14		16

Logging Engineering Curriculum

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 306. Wood Tech....	4	For. 322. Silv. Meth.....	3	For. 335. Insect Control... 3	
For. 321. Silvics.....	3	For. 373. For. Utilization. 5		For. 430. Adv. Fire	
For. 404. Timber Phys....	5	For. 440. Construction....	4	Control	3
C.E. 312. Route Surv....	3	C.E. 313. Location & Earth 3		Bot. 361. For. Path.....	5
	15		15	C.E. 315. Photogrammetry 3	
					14

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 401. For. Ind. Safety	2	For. 442. Log. Eng.	5	For. 446. Log. Plans	3
For. 408. Econ. & Fin.	5	For. 460. For. Mgt.	5	For. 447. Top. & Timb. Sur.	5
For. 441. Log. Eng.	5	Bus. Law 207. Bus. Law.	3	For. 448. Rd. Loc. Sur.	5
Acctg. 150. Accounting ...	3	Electives	3	For. 449. Cost Anal. & Report	3
	15		16		16

Forest Products Curriculum

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 306. Wood. Tech.	4	For. 307. Wood Structure	3	For. 320. Elem. Silv.	3
Bot. 361. For. Path.	5	For. 404. Timber Physics.	5	For. 370. Wood Pres.	3
Electives	6	M.E. 220. Steam Engr.	3	For. 371. Wood Pres. Lab.	2
	15	Electives	5	For. 471. Timber Design.	3
			16	Acctg. 150. Accounting ...	3
					14

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
For. 408. Econ. & Fin.	5	For. 470. For. Prod. Ind.	3	For. 406. Microtech.	3
For. 481. Milling	5	For. 472. Plywood, Lam., Glues	4	For. 476. Wood Pulp.	5
Bus. Law 207. Bus. Law.	3	For. 483. Kiln Drying.	3	For. 482. Mfg. Problems.	5
Electives	2	Electives	5	Electives	3
	15		15		16

SCHOOL OF LAW

JUDSON F. FALKNOR, *Dean*, 205 Condon Hall

The School of Law was established in 1899, is a member of the Association of American Law Schools, and is approved by the Council on Legal Education and Admission to the Bar of the American Bar Association.

The school prepares students for practice in any state or jurisdiction where the Anglo-American legal system prevails. Particular attention is given to the statutes, the special doctrines, and the rules of practice that obtain in the state of Washington. Admission to the Washington Bar, however, is conditioned upon passing a state bar examination.

Admission

New students are admitted at the start of each fall quarter only. An application-for-admission blank should be obtained from and filed with the Dean of the Law School, together with complete transcripts of college and law work. An early application is essential since admission is on a selective basis and some who apply may not be accepted.

Regular Students. To be regularly admitted to the School of Law a student must either (1) hold the degree of bachelor of arts or bachelor of science from a college or university of recognized standing, or (2) have completed 135 academic quarter credits with a scholarship average of 2.5, together with the required credits in physical education activity courses, and Air, Military, or Naval Science courses, or (3) have completed 90 academic quarter credits with a scholarship average of 2.5, together with the required credits in physical education activity courses and Air, Military, or Naval Science courses, and including satisfactory completion of the following courses or their substantial equivalents: Engl. 101, 102, 103 (9 credits); Phil. 100, Introduction and 120, Logic (10 credits); Econ. 200, Introduction and B.A. 101, Business Organization (10 credits); Hist. 271-272, English Political and Social and 371, English Constitutional (15 credits); Pol. Sci. 100, Survey and 260, Introduction to Public Law (10 credits). In every case, the applicant must present at least 90 residence credits in addition to extension credits.

Advanced Standing. Transfer of credit is possible only from those schools which are members of the Association of American Law Schools; credit for not less than the work of one year and not more than the work of three years will be acceptable. The dean shall determine what credit, if any, can be granted to a transfer student.

Special Students. This classification covers those who are not working for a degree. The applicant must be at least 23 years of age and his general education must entitle him to admission to the freshman class in the University of Washington. Admission is granted only upon vote of the faculty, and the number of those who can be granted this privilege is definitely restricted.

Attention is called to the fact that in order to be eligible to take the Washington State Bar examination, the student must have completed two years of college work prior to beginning his professional law study. Students intending to qualify for the Washington State Bar examination are, therefore, advised not to petition for admission as special students.

Degrees and Requirements for Graduation

Bachelor of Laws. The law course is a four-year course. (Students who had at least one year of active duty in the armed forces of the United States prior to September, 1945, are entitled to two quarters of credit by terms of a state statute.) The degree of Bachelor of Laws will be conferred on *regular* students who complete 168 quarter credits in professional law subjects, including the required courses, with a scholarship average of 2.0. The three quarters immediately preceding the conferring of the degree must be spent in residence at the University of Washington Law School.

Bachelor of Science in Law. This is a nonprofessional degree which does not qualify for admission to the bar or to the bar examination; it is conferred on a *regular* student who holds no bachelor's degree, who has completed six quarters of the law school curriculum (usually 84 credits), who has at least 180 credits in legal and pre-legal work with a scholarship average of 2.0 in the former, and who is eligible to continue in the Law School.

For the major in Law or in the College of Arts and Sciences or in the College of Business Administration, see page 158.

For scholarship rules, see page 105.

Prizes and Scholarships

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

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

The W. G. McLaren Prize. An award of \$50 is made annually to that fourth-year student submitting the best solution to a problem in legal draftsmanship.

The Seattle Life Insurance and Trust Council Will Contest. During the academic year awards are made to the three law students who, in the opinion of the judges, draft the best will based on a stipulated set of facts. The prizes are \$250, \$100, and \$50.

William Wallace Wilshire Memorial Scholarship Fund. This fund was established under the will of the late Fannie Belden Shepherd. The will provides that the net income from the fund shall be expended and disbursed in the form of scholarships to students enrolled in the Law School of the University of Washington and that in awarding the scholarships "the Board of Regents shall be governed by the financial need, general character, and demonstrated scholastic ability of the applicants for such scholarships." The maximum to be awarded under any one scholarship is \$500. Prospective beginning students are eligible for consideration. Applications must be submitted to the Dean of the Law School not later than May 15, 1951, on forms which are available at the Dean's office.

SCHOOL OF LIBRARIANSHIP

ROBERT L. GITLER, *Director*, 112 Library

Admission Requirements

Admission to the School of Librarianship is granted to graduate students who hold the baccalaureate degree from a college or university of good standing, and whose undergraduate work has included at least 20 quarter credits of one modern foreign language, and who have made an average grade of "B" in their undergraduate work. Students who plan a library career in scholarly libraries and scientific fields should have a reading knowledge of French and German before applying for admission to the school.

Admission to the course in law librarianship is granted to graduate students who have completed the law work at a school accredited by the Association of American Law Schools. Applications with full official transcripts of law courses must be sent to the Dean of the Law School.

Initial admission to the School of Librarianship for full-time students—candidates for the professional degree—is effected, as a rule, only at the beginning of the academic year in the Autumn Quarter. Admission may be granted, however, at other times to students who plan to carry their work on a part-time basis and to persons from other departments of the University who wish to elect courses open to them.

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 thirty-five years of age will not be considered for admission to the school unless special circumstances warrant.

As no one with serious physical defects, personality difficulties, or ill health can readily secure a position in library service, such persons should not ask admission to the school.

The student entering the school should be a typist of accuracy and fair speed.

Those desiring to prepare for children's library work should have completed at least one course in child psychology.

Those wishing to enter high school library work should consult the College of Education in regard to teaching qualifications.

An average class grade of "B" must be maintained by students of the school. Since the courses are heavy, students are advised not to plan for outside work. However, it is frequently possible to enroll for a portion of the curriculum and carry the program over a two-year period while working on a part-time basis as a non-professional assistant in the University Library.

Degrees

On completion of the school's graduate program of professional library studies a second (post) baccalaureate degree is awarded. Curricula I, II, and III lead to the graduate professional degree, Bachelor of Arts in Librarianship; on completion of the curriculum in Law Librarianship (IV), the degree awarded is the Bachelor of Arts in Law Librarianship.

These programs, cast at the graduate level, come within the cognizance of the Graduate School and have been approved by the Graduate Council and the Committee of the Graduate Faculty. Candidates for this graduate professional degree must already hold an initial bachelor's degree.

Curricula

The curricula offered are: (I) General; (II) Library Work with Children and Young People; (III) School Library Work; (IV) Law Librarianship. In addition, after the first quarter of residence a student may, with the approval of the faculty, develop other course combinations which are particularly well adapted to his individual objective.

All the courses of study in the Autumn Quarter have certain points of similarity as they are introductory to various aspects of librarianship.

I. *General*, in which preparation for general professional service in most types of libraries is offered. Thirty-five units of graduate credit library studies plus 10 units of additional graduate credit electives (librarianship or other approved courses) for a total of not less than 45 units complete the program for Curriculum I.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
<i>Required</i>		<i>Required</i>		<i>Required</i>	
500. Libraries, Librarians and Society	2	502. Library Organization and Administration	3	501. Libraries, Librarians and Society	2
510. Evaluation of Library Materials	4	511. Library Materials in Humanities-Social Sciences	3	*509. Directed Field Work	4
530. Organization of Library Materials: Theory and Principles	4	531. Organization of Library Materials: Comparative Methods ..	4	512. Library Materials in Science and Technology ..	3
599. Methods of Research in Librarianship	2	601. Nonthesis Research ..	2	602. Nonthesis Research ..	2
	12		12		11
<i>Elective</i>		<i>Elective</i>		<i>Elective</i>	
514. Library and Audio-Visual Materials	3	470. History of the Book ..	3	503. Special Libraries	2
550. Introduction to Library Service for Children	3	or		or	
or		Nonlibrary Course		Nonlibrary Course	
Nonlibrary Course				513. Government Publications	2
				514. Library and Audio-Visual Materials	3
				532. Organization of Library Materials: Advanced Problems	2

II. *Library Work with Children and Young People*, in which intensive and detailed study of this phase of library service is provided. A total of 46 units of graduate credit library studies constitutes this program. Substitution of other library courses may be allowed with faculty approval.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
<i>Required</i>		<i>Required</i>		<i>Required</i>	
500. Libraries, Librarians and Society	2	511. Library Materials in Humanities-Social Sciences	3	452. Story Telling	3
510. Evaluation of Library Materials	4	531. Organization of Library Materials: Comparative Methods ..	4	462. Reading of Young People	3
530. Organization of Library Materials: Theory and Principles ..	4	553. Library Work with Children	2	501. Libraries, Librarians and Society	2
550. Introduction to Library Service for Children	3	554. Children's Literature ..	3	509. Directed Field Work ..	4
599. Methods of Research in Librarianship	2	601. Nonthesis Research ..	2	514. Library and Audio-Visual Materials	3
	15		14	602. Nonthesis Research ..	2
					17

III. *School Library Work*, in which preparation for school librarianship at the secondary level is offered for students with teaching credentials. A total of 47 units of graduate credit library studies constitutes this program. Substitution of other library courses may be allowed with faculty approval.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
<i>Required</i>		<i>Required</i>		<i>Required</i>	
500. Libraries, Librarians and Society	2	470. History of the Book ..	3	460. School Library Administration	3
510. Evaluation of Library Materials	4	511. Library Materials in Humanities-Social Sciences	3	462. Reading of Young People	3
530. Organization of Library Materials: Theory and Principles ..	4	531. Organization of Library Materials: Comparative Methods ..	4	501. Libraries, Librarians and Society	2
550. Introduction to Library Service for Children	3	554. Children's Literature ..	3	509. Directed Field Work ..	4
599. Methods of Research in Librarianship	2	601. Nonthesis Research ..	2	514. Library and Audio-Visual Materials	3
	15		15	602. Nonthesis Research ..	2
					17

*Additional nonlibrary studies may be elected with the permission of the Director in lieu of 509.

IV. *Law Librarianship*, in which an intensive study in law librarianship is programmed for students who already hold the bachelor of laws degree. This course is given by the faculty of the School of Librarianship and the Law School. The degree of Bachelor of Arts in Law Librarianship is awarded to students completing this program of 46 units.

<i>Autumn Quarter</i>	<i>Required</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Required</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Required</i>	<i>Credits</i>
500. Libraries, Librarians and Society	2		511. Library Materials in Humanities-Social Sciences	3		501. Libraries, Librarians and Society	2	
510. Evaluation of Library Materials	4		531. Organization of Library Materials: Comparative Methods ..	4		509. Directed Field Work ..	4	
530. Organization of Library Materials: Theory and Principles ..	4		542. Legal Reference and Research	5		513. Government Publications	2	
540. Advanced Legal Bibliography	4			12		532. Organization of Library Materials: Advanced Problems ..	2	
541. Selection and Processing of Law Library Materials	2		<i>Elective</i>			543. Law Library Administration	5	
	16		470. History of the Book ..	3				15
			502. Library Organization and Administration ..	3				

In addition to the foregoing professional curricula, the school offers the 15-hour undergraduate program for students preparing to meet the requirements of the State Department of Public Instruction for teacher-librarians, and offers courses which fulfill the 18 credit minor requirement for students in the College of Education. Courses available for these programs are: Librarianship 451, 460, 461, 462, 463, 464. The all-University course, Librarianship 100, remains as an elective open to all without prerequisite.

Announcement of Courses

For announcement of courses offered by the School of Librarianship, see Section III.

SCHOOL OF MEDICINE

EDWARD L. TURNER, *Dean*, 308C Health Sciences Building

The School of Medicine, which is one of the four schools in the new Division of Health Sciences (Medicine, Dentistry, Nursing, and Pharmacy) initiated instruction of its first class in October, 1946. The basic medical science departments, library and auditorium serving the Division of Health Sciences, the office and research facilities for the clinical departments, complete clinical facilities for the School of Dentistry, and administrative facilities for the School of Nursing are housed in the new Health Sciences Building completed in the fall of 1949. Clinical teaching is conducted in hospitals affiliated with the University. The chief center for clinical instruction is King County Hospital where the clinical department heads in the School of Medicine act as chiefs of staff of their respective departmental activities. Clinical instruction is also conducted in the Children's Orthopedic Hospital, United States Marine Hospital, Firland Sanatorium, and Madigan General Hospital. Beginning in the summer of 1949, students in the fourth year of medicine have served externship periods in affiliated state mental institutions including Western State, Northern State, and Eastern State Hospitals.

At the present time plans are under way for the development of a University Teaching and Research Hospital to be constructed as an integral unit of the Division of Health Sciences.

The organization and development of the School of Medicine have been directed so as to meet the full approval of the Council on Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges. A survey of the School of Medicine by these two organizations in October, 1949, resulted in announcement of full approval of the School of Medicine by the Council on October 22, 1949, and its admission to full membership in the Association of American Medical Colleges in November, 1949.

The objectives of the school are: (1) to prepare a selected group of medical students for the practice of medicine through the use of the best educational technics employed in this field; (2) to develop a continuing education program of the highest

possible caliber for graduate and postgraduate physicians; and (3) to conduct an active program of research and investigation. Development of faculty and physical facilities has been directed toward the attainment of these objectives.

The actual admission to the practice of medicine in the state of Washington, or any other state or territory in the United States, is conditional upon the candidate's meeting the requirements of the state's board of medical examiners in regard to undergraduate training, internship, and satisfactory completion of the state medical examination prerequisite to licensure.

Application

Applications and all pertinent material should be sent to the Committee on Admissions of the School of Medicine. Each applicant must submit the following material on or before February 1, before any action can be taken by the Committee on Admissions: (1) formal application for admission on the form furnished by the University of Washington; (2) official transcript of previous college record (sent directly from Registrar's Office of the institution where preprofessional training was taken to the Committee on Admissions of the School of Medicine at the University of Washington); (3) two unmounted recent photographs (2 x 3 inches); (4) students applying with premedical training in Canada are required to forward a copy of their university entrance certificate.

Applicants must take the special medical aptitude test conducted by the Graduate Record Examining Board. The Committee on Admissions will inform applicants as to when the tests may be taken.

Admission

The Admissions Committee will consider as candidates for entrance to the Medical School individuals who have completed at least three years of premedical training (135 academic quarter credits) with a scholastic average of 2.5 or above. All applicants must have completed the minimum premedical course requirements (in academic quarter credits) as outlined by the Association of American Medical Colleges: English Composition 9; Chemistry 12 (Inorganic); Chemistry 6 (Organic); Physics 12; Biology 12. In order to insure a broad background, the elective courses which the Committee on Admissions of the School of Medicine recommends are in the general fields of the humanities (including such courses as literature, modern languages, music, art, etc.); the social sciences (including such courses as economics, history, philosophy, political science, psychology, sociology, etc.) and the sciences (including such courses as physical chemistry, mathematics, cellular physiology, genetics, etc.).

Requirements for Graduation

A candidate for the degree of Doctor of Medicine must be twenty-one 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 fulfilled all special requirements. He must have discharged all indebtedness to the institution.

BIOCHEMISTRY

Graduate study and research in biochemistry is conducted jointly by the Medical School and the Department of Chemistry and Chemical Engineering.

For admission requirements, see Chemistry and Chemical Engineering, page 206.

MEDICAL TECHNOLOGY

(See page 104.)

MICROBIOLOGY

(See page 141.)

PUBLIC HEALTH AND PREVENTIVE MEDICINE

(See page 153.)

SCHOOL OF NURSING

ELIZABETH STERLING SOULE, *Dean*, Health Sciences Building

Nursing has been a part of the general University program at the University of Washington since 1917. The School of Nursing today is a professional school and an active member of the Association of Collegiate Schools of Nursing. The basic (Group I) and graduate nurse curricula (Group II) are approved by the National Nursing Accrediting Service which is the sole accrediting agency recognized by the nursing profession. The programs offered are intended to prepare students for professional practice in all fields of nursing.

Graduates of the Group I Basic Curriculum are eligible to take the state nursing examination and to practice as registered nurses in the State of Washington or in other states through reciprocity. Through accreditation by the National Nursing Accrediting Service these graduates are eligible to practice as public health nurses in first level positions.

Admission Requirements

Group I. To be regularly admitted to the School of Nursing in the basic curriculum, the student must have met the entrance requirements of the University and the College of Arts and Sciences. She must have completed 56 quarter credits in an accredited university or college, together with the required physical education activity courses. Acceptance in the School of Nursing is on a selective basis. These credits must include the following: Engl. 101, 102, 103 (9 credits); Chem. 101-102 (10 credits); Psych. 100 (5 credits); Soc. 110 (5 credits); P.E. 110 (2 credits); P.E. 292 (3 credits).

Group II. Students in postgraduate nursing curricula must be graduates of approved schools of nursing with a minimum daily average of one hundred patients and with services in at least four major fields: obstetrics, medicine, surgery, and pediatrics. Deficiencies in any of these services must be made up. Achievement tests in various fields of nursing may be 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.

The programs in Nursing Education are 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. Graduate nurses desiring this major must have had a basic course in the clinical field of specialization of their choice and at least one year of experience in general duty nursing. The student must also have attained junior standing at the University of Washington with specified requirements and have removed all University entrance deficiencies before registering for courses beginning with the number 415. Permission of the faculty is required before admission to the hospital teaching unit.

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.

Medical and health care, including annual physical examination and hospitalization not to exceed two weeks at any one time, are provided during the clinical practice. Hospitalization is given subject to institutional rule. No responsibility is assumed in case of illness arising from defects which existed on entrance. Students must 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 93-98.

Basic Students. During the eleven 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 some remuneration for nursing service rendered. The amount depends upon her clinical major and the unit to which she is assigned. During each quarter in the clinical division the student pays a ward clinic fee of \$10 in addition to the regular fees.

Fellowships, Scholarships, Prizes. See page 112.

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 with a major in nursing education or public health nursing.
 - b. Leading to the Certificate in Public Health Nursing.

Group I. Basic Curriculum

DEGREE: Bachelor of Science in Nursing

The student will enter upon this curriculum after earning 56 college credits, as outlined on page 191.

<i>First Quarter</i>	<i>Credits</i>	<i>Second Quarter</i>	<i>Credits</i>	<i>Third Quarter</i>	<i>Credits</i>
Chem. 230.	5	Anatomy 217JG.	3	Anatomy 218JG.	3
Physics 170.	5	Physiology 217JG.	3	Physiology 218JG.	3
Public Health	2	Microbiol. 301.	5	Pathology 301.	2
Elective	3	Psychiatry 100.	2	Nursing 290.	4
P.E. Activity	1	Mental Hygiene	2	Pharmacy 261.	3
	16	Pharmacy 251	2	P.E. Activity	1
		P.E. Activity	1		16
			18		
<i>Fourth Quarter</i>	<i>Credits</i>	<i>Fifth Quarter</i>	<i>Credits</i>	<i>Sixth Quarter</i>	<i>Credits</i>
Nursing 295.	3	Nursing 300.	5	Nursing 302.	4
Nursing 296.	5	Nursing 301.	5	Nursing 303.	5
Nursing 297.	2	Home Economics 305.	3	Social Work 300.	3
Home Economics 119.	5				12
	15		13		
<i>Seventh Quarter</i>	<i>Credits</i>	<i>Eighth Quarter</i>	<i>Credits</i>	<i>Ninth Quarter</i>	<i>Credits</i>
Nursing 304.	2	Nursing 306.	5	Nursing 331.	5
Nursing 305.	5	Nursing 330.	5	Nursing 332.	5
Elective	5	Elective	2		10
	12		12		
<i>Tenth Quarter</i>	<i>Credits</i>	<i>Eleventh Quarter</i>	<i>Credits</i>	<i>Twelfth Quarter</i>	<i>Credits</i>
Nursing 333.	5	Nursing 400.	5	Nursing 402.	2
Nursing 340.	3	Nursing 401.	5	Nursing 403.	3
Elective	2			Nursing 404.	3
	10		10		8
<i>Thirteenth Quarter</i>	<i>Credits</i>	<i>Fourteenth Quarter</i>	<i>Credits</i>		
Nursing 405.	3	Nursing 407.	3		
Nursing 406.	5	Nursing 408.	5		
Elective	2	Nursing 409.	2		
	10		10		

Group II. Curricula 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 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, operating room, obstetrics, pediatrics, psychiatry and mental health, tuberculosis nursing and outpatient service. The first five clinical and outpatient services are available at the 500-bed Harborview (King County) Hospital; tuberculosis nursing in the 1200-bed Firland Sanatorium; psychiatric nursing and mental health in Pinel Foundation or Northern State Hospital.

General Requirements. The candidate for a Bachelor of Science degree in nursing is advised to select proportionately those professional, scientific, and cultural courses which will strengthen her major field and establish a minor field as a basis for future graduate study. The program is set up within the following framework which allows adaptations to meet individual needs and interests and assures a broader general education.

	<i>Credits</i>
English Composition	9
Biological and physical sciences	15-24
Social sciences	15-24
Professional courses	36-45
Electives as necessary to total	180

A total of 180 academic credits is required for graduation. From 24-48 credits are allowed for graduation from an accredited school of nursing, 6 credits being allowed for each major service. Professional courses may be selected from several areas as follows:

Public Health Nursing: Nurs. 442 (5), 382 (5), 383 (5), 384 (6), 381 (3), 440 (5), 465 (3); Public Health 412 (3), 470 (2), 402 (3); Social Work 300 (3).

Industrial Nursing: Nurs. 442 (5), 380 (3), 443 (12) 465 (3), 490 (3); Physical Educ. 292A (3); Home Econ. 350 (3); Social Work 300 (3); Public Health 402 (3), 470 (2), 451 (3).

Teaching and Administration in Clinical Specialties: Nurs. 417 (5), 418 (5), 420 (3), 430 (3), 435 (10), 380 (3), 465 (3), 360 (3), 456 (5), 455 (5).

Teaching Nursing Arts: Nurs. 417 (5), 418 (5), 420 (3), 421 (3), 380 (3), 462 (3), 465 (3), 435 (10), 455 (5), 456 (5); Education 301 or 401 (3), 447 (3).

Orthopedic Nursing: (Either hospital or public health nursing emphasis is provided); Nurs. 417 (5), 455 (5), 456 (5), 418 (5) or 498 (5), 435 (10) or 443 (12), 380 (3) or 494 (2), 460 (3), 461 (5), 465 (3); Anatomy 365 (5).

Psychiatric Nursing, Mental Hygiene: Nurs. 417 (5), 418 (5), 455 (5), 456 (5), 430 (3), 432 (2), 380 (3), 363 (2), 367 (3), 465 (3), 435 (10); Psychiatry 467.

Certificate Programs

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 381, 382, 383, 384, 440, 442; Public Health 402, 412; Soc. 110; Social Work 300; Psych. 100.

Advanced Degrees

Graduate study leading to the degree of Master of Nursing or Master of Science in Nursing is available with a major in the fields of administration in schools of nursing, teaching and supervision, public health nursing, and psychiatric nursing and mental health. Requirements for advanced degrees are presented in the Graduate School Section, page 214.

COLLEGE OF PHARMACY

FOREST J. GOODRICH, *Dean*, 102 Bagley Hall

DEGREE: Bachelor of Science in Pharmacy

Entrance Requirements

For detailed information concerning University admission requirements, fees, and expenses, see pages 86-98. In addition to the all-University entrance requirements, the College of Pharmacy requires one unit of elementary algebra and one unit of plane geometry or second-year algebra.

Since it has become necessary to admit students to pharmacy on a selective basis, a special Pharmacy Personnel Information blank will be supplied to students desiring admission to the College of Pharmacy. These application forms may be secured from the Registrar of the University or the Dean of the College and must be submitted together with credentials of previous academic work to the office of the Registrar by July 15, 1950, relative to admission for the 1950-51 academic year.

Students whose credentials and Pharmacy Personnel Information blanks have not been received by the Registrar before July 15, 1950, may be accepted only if vacancies exist in the college.

Advanced Degrees. For requirements for advanced degrees, see Graduate School section, page 214.

Fellowships, Scholarships, Prizes. See page 112.

Admission to Advanced Standing. The American Association of Colleges of Pharmacy conform to the all-University requirements (page 102), except that not more than 18 quarter credits in advanced Army and Navy subjects may be applied complete the course in pharmacy in less than three collegiate years; this to become effective for students entering member colleges on and after January 1, 1938."

Curriculum

The requirements for graduation with the degree of Bachelor of Science in Pharmacy conform to the all-University requirements (page 102), except that not more than 18 quarter credits in advanced Army and Navy subjects may be applied toward graduation.

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pharm. 101. General.....	3	Pharm. 102. General.....	3	Pharm. 103. General.....	3
Engl. 101. Composition...	3	Engl. 102. Composition...	3	Engl. 103. Composition...	3
Chem. 108. Gen. Inorganic	5	Chem. 109. Gen. Inorganic	5	Chem. 110. Gen. Inorganic	5
Pharm. 104. History.....	2	Bot. 111. General.....	5	Math. 122. Adv. Alg. and	
P.E. 110 or 175.....	2	P.E. Activity.....	1	Trig.....	5
P.E. Activity.....	1	Air, Mil., or Nav. Sci. 2 or 3	3	P.E. Activity.....	1
Air, Mil., or Nav. Sci. 2 or 3	3			Air, Mil., or Nav. Sci. 2 or 3	3
	18 or 19		19 or 20		19 or 20

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pharm. 209. Prescriptions. 3		Pharm. 210. Prescriptions. 3		Pharm. 211. Prescriptions. 3	
Pharmacog. 212. Pharma-		Pharmacog. 213. Pharma-		Pharmacog. 214. Pharma-	
cognosy.....	3	cognosy.....	3	cognosy.....	3
Chem. 237. Organic.....	5	Chem. 238. Organic.....	5	Chem. 239. Organic.....	5
Physics 101 or 104.....	5	Physics 102 or 105.....	5	Zool. 208. Elem. Human	
P.E. Activity.....	1	P.E. Activity.....	1	Physiol.....	5
Air, Mil., or Nav. Sci. 2 or 3	3	Air, Mil., or Nav. Sci. 2 or 3	3	P.E. Activity.....	1
	19 or 20		19 or 20	Air, Mil., or Nav. Sci. 2 or 3	3
					19 or 20

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Ph. Chem. 325. Quantitative Gravimetric	5	Ph. Chem. 326. Quantitative Volumetric	5	Ph. Chem. 328. Drug Assay	3
Pharmacol. 301. Pharmacol. and Toxicology	3	Pharmacol. 302. Pharmacol. and Toxicology	3	Ph. Chem. 340. Organic Med. Products	3
Pharmacog. 411. Glandular Products	3	Pharmacog. 304. Microscopy	3	Pharmacol. 303. Pharmacol. and Toxicology	3
Electives	5	Microbiology 301. General	5	Pharmacog. 412. Serums, Vaccines and Allergens	2
	<u>16</u>		<u>16</u>	Electives	5
					<u>16</u>

FOURTH YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
Pharm. 313. Adv. Prescrip.	5	Ph. Chem. 496. Pharm. Chemistry	5	Ph. Chem. 497. Alkaloids and Toxicology	5
Pharm. 382. Modern Pharmaceuticals	5	Pharm. 314. Adv. Prescrip.	5	Pharm. 315. Adv. Prescrip.	5
Ph. Chem. 495. Pharm. Chemistry	5	Pharm. 318. Ph. Acctg.	5	Electives	5
	<u>15</u>		<u>15</u>		<u>15</u>

PREPROFESSIONAL TRAINING

PRE-EDUCATION

FRANCIS F. POWERS, *Executive Officer*, 230 Education Hall

(See College of Education section, page 160, for detailed information.)

Pre-Education Students. During the freshman year, students who expect to teach, and who do not meet all the requirements for admission to the College of Education or are undecided as to which prescribed course they wish to follow, will register as pre-education freshmen in the College of Arts and Sciences and pursue the regular course of the College of Education. They must confer in this year with the advisory officers in the College of Education. This conference is for two purposes: (1) to obtain admission to the College of Education, and (2) to select suitable combinations of teaching subjects and orientation courses for the proposed preparation for teaching.

PRELAW

Advisers: S. D. Brown, 223 Savery Hall, College of Business Administration
R. D. Gustafson, 121 Education Hall, College of Arts and Sciences

Students may gain admission to the School of Law either through the College of Arts and Sciences or the College of Business Administration. Any of the three plans listed below will qualify a student for Law School.

1. A four-year bachelor's degree from any recognized college or university.
2. A three-year program including the combined Arts-Law, Science-Law, or Law-Business curricula leading to a bachelor's degree conferred by the respective college at the successful conclusion of the first year's study of law. Exclusive of credits for lower-division Military Training and Physical Education Activities, 138 credits with a 2.5 minimum grade-point average are required on entrance to law school in order to obtain a degree at the end of the first year of law study.

College of Arts and Sciences

(Combined Arts-Law Curricula)	Credits
1. Fulfill entrance deficiencies	
2. Engl. 101, 102, 103. Composition.....	9
3. P.E. 175 or 110. Health Ed.....	2
4. P.E. Activity.....	6
5. Air, Mil., or Nav. Sci.....	12 or 18
6. Special Field.....	25
7. Related Field.....	20
If a student fulfills the basic recommended courses set forth by the law school,	
B.A. 101. (Business Organization)	
Econ. 200. (Survey of Economics)	
Hist. 271, 272. (Engl. Pol. and Soc.)	
Hist. 371. (Engl. Constitutional)	
Phil. 100. (Survey of Philosophy)	
Phil. 120. (Logic)	
Pol. Sci. 100. (Survey)	
Pol. Sci. 260. (Intro. to Public Law),	
he may elect his special and related fields from any department within the college.	
If not, he must elect his special and related fields from the departments of Economics, History, Philosophy, or Political Science.	
8. Electives*.....	82
(A student is urged to take the basic recommended courses.)	
Group Requirements	
Humanities 20 or 10 credits	
Sciences 10 or 20 credits	
Upper-division Courses	
(28 credits of advanced work)	
Total.....	156 or 162

College of Business Administration

(Combined Law-Business Curricula)	Credits
1. Fulfill entrance deficiencies	
2. Engl. 101, 102, 103. Composition.....	9
3. P.E. 175 or 110. Health Ed.....	2
4. P.E. Activity.....	6
5. Air, Mil., or Nav. Sci.....	12 or 18
6. Lower-division requirements of College	
B.A. 101. Introduction to Business.....	5
Acctg. 150. Fundamentals of Accounting.....	3
Acctg. 151. Fundamentals of Accounting.....	3
Acctg. 255. Basic Accounting Analysis.....	3
Fin. 201. Banking and Business.....	5
B.Stat. 201. Statistical Analysis.....	5
†Econ. 160. American Economic History.....	5
Econ. 200. Introduction to Economics.....	5
Econ. 201. Principles of Economics.....	5
Geog. 107. Economic Geography.....	5
10 credits in one of these three fields:	
(1) Mathematics (May not include Math. 113).....	10
(2) Laboratory Science (10 credits of one or 5 credits in each of two from: Botany, Chemistry, Geology, Physics, or Zoology)	
(3) Foreign Language (10 credits of one language)	
Approved Electives†.....	20
7. Upper-division requirements of College	
B.A. 439. Business Fluctuations.....	5
B.A. 460. Human Relations in Industry and Business.....	5
Fin. 301. Corporation Finance.....	5
Mktg. 301. Principles of Marketing.....	5
Prod. 301. Principles of Production.....	5
Approved Electives‡.....	28
Total.....	156 or 162‡

College of Arts and Sciences (Science-Law Curricula)

Same as Arts-Law Curricula with the exception that the major requirements in some departments may be substituted for No. 6 (Special Field) and No. 7 (Related Field) requirements.

3. A two-year program (90 or 96½ credits with a minimum grade-point average of 2.5) consisting of the following requisites: (requirements for both the College of Arts and Sciences and the College of Business Administration).

Credits	Credits
English 101, 102, 103. Composition.....	9
B.A. 101. Introduction to Business.....	5
Economics 200. Survey.....	5
History 271, 272. English Political and Social.....	10
History 371. English Constitutional.....	5
Philosophy 100. Survey.....	5
Philosophy 120. Logic.....	5
Political Science 100. Survey.....	5
Political Science 260. Introduction to Public Law.....	5
Physical Education 175 or 110. Health Ed.....	2
Physical Education Activities.....	6
Air, Mil., or Nav. Sci.....	12 or 18
Electives* (34 or 40)½.....	40
Total.....	114 or 120

Transfer Prelaw Students. Students from other institutions entering this University with advanced standing may take advantage of the curricula described above, provided that they earn at least 45 approved credits in the College of Arts and Sciences before entering the Law School. This privilege will not be extended to normal-school graduates attempting to graduate in two years nor to undergraduates of other colleges who enter this University with the rank of senior.

*All electives should be in conference with advisers.

†Hist. 271, 272, 273 may be substituted for Econ. 160.

‡Approved electives must include 20 credits in the following: Anthropology, Philosophy, Political Science, Psychology, Sociology.

§To be eligible for a Bachelor of Science in Law degree conferred by the School of Law on the recommendation of its faculty at the end of the second year of law study, 96 prelegal academic credits must be accumulated before entering Law School.

PRELIBRARIANSHIP

ROBERT L. GITLER, *Adviser*, 112 Library

Students planning to enter the School of Librarianship should consult the Director of the School, in person or by correspondence, for advice and guidance in their undergraduate courses of study.

In general, it is recommended that a student establish a major in a subject of special interest to him and supplement his comprehensive knowledge of that field with a broad cultural course which includes literature, the political and social sciences, and 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.

It is recommended that students without substantial library experience gain some basic instruction in elementary library studies. Attention is called to the all-University nonprofessional course: Librarianship 100, The Use of Books and Libraries. This course open to any student, particularly new and lower-division students, serves also to orient those interested in librarianship as a career. And in addition to its graduate professional curricula, the school offers certain undergraduate courses which, although primarily designed to prepare students to meet the state of Washington requirements for teacher-librarians, may serve also as introductory work for students who are planning to enter the graduate professional program.

More detailed information relating to prelibrarianship courses of study will be found in the school's *Announcement*, which is obtainable upon request from the office of the Director.

For admission requirements of the School, see page 187.

PREMEDICINE, PREIDENTISTRY, AND BASIC MEDICAL SCIENCE

PREMEDICINE

HAROLD M. HINES, *Adviser*, 121 Education Hall

The minimum requirement for admission to most medical schools is three years of college training and, in some cases, knowledge of one foreign language (German preferred). The curriculum outlined below is generally satisfactory, but the student must acquaint himself with the specific requirements of the school in which he is interested in order to make the proper selection of electives.

In case the school which the student wishes to attend requires a bachelor's degree for admission, a major should be chosen in consultation with an adviser not later than the sophomore year. Chemistry, zoology, and microbiology are science majors most adaptable to premedicine, although other majors are possible and in many cases desirable. A general grade-point average of 2.5 must be maintained by all premedical students.

Students who have an aptitude for and an interest in the sciences, especially those who may wish to do medical research or become specialists in certain branches of medicine, are advised to consider an alternative course of study offering the necessary additional professional training. The first year of the recommended alternative program corresponds to that of the prescribed major in the science field chosen by the student.

Curriculum for Premedicine

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>	<i>Spring Quarter</i>	<i>Credits</i>
*Chem. 111 or 115.....	5	*Chem. 112 or 116.....	5	*Chem. 113 or 325.....	5
Engl. 101.....	3	Engl. 102.....	3	Engl. 103.....	3
Math. 101 or 104.....	5	Zool. 111.....	5	Zool. 112.....	5
P.E. 110 or 175.....	2	Electives.....	2-3	Electives.....	2-3
P.E. Activity.....	1	P.E. Activity.....	1	P.E. Activity.....	1
Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3		Air, Mil., or Nav. Sci. 2 or 3	
18 or 19		18-20		18-20	

*For those who have not had high school chemistry (115, 116, 325 are equivalent to 111, 112, 113, 221).

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>
Zool. 456	5
†Physics 101	5
Psych. 100	5
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

<i>Winter Quarter</i>	<i>Credits</i>
†Physics 102	5
Electives	10
(Soc. Sci. and/or Humanities)	
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

<i>Spring Quarter</i>	<i>Credits</i>
*Chem. 221 or elective....	5
†Physics 103	5
Electives	5
(Soc. Sci. and/or Humanities)	
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

THIRD YEAR

<i>Autumn Quarter</i>	<i>Credits</i>
Chem. 231 or 335	3
Chem. 241 or 345	3
Organic Lab.	2
Foreign Language or Elective	5
Electives	5
	<hr/> 15

<i>Winter Quarter</i>	<i>Credits</i>
Chem. 232 or 336	3
Chem. 242 or 345	3
Organic Lab.	2
Foreign Language or Elective	5
†Electives	5
	<hr/> 15

<i>Spring Quarter</i>	<i>Credits</i>
Foreign Language or Elective	5
†Electives	10
	<hr/> 15

PREIDENTISTRY

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 one year each of biology, English, inorganic chemistry, and physics; and one-half 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 Preidentistry

FIRST YEAR

<i>Autumn Quarter</i>	<i>Credits</i>
Chem. 111 or 115	5
Engl. 101	3
Zool. 111	5
P.E. 110 or 175	2
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

<i>Winter Quarter</i>	<i>Credits</i>
Chem. 112 or 116	5
Engl. 102	3
Zool. 112	5
Electives	2
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

<i>Spring Quarter</i>	<i>Credits</i>
†Chem. 113	5
Engl. 103	3
§Math. 101 or 104	5
Electives	2
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

SECOND YEAR

<i>Autumn Quarter</i>	<i>Credits</i>
Zool. 456	5
†Physics 101 or 104	5
Electives	5
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

<i>Winter Quarter</i>	<i>Credits</i>
Chem. 231 or 335	3
Chem. 241 or 345. Organic Lab.	2
†Physics 102 or 105	5
Electives	5
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

<i>Spring Quarter</i>	<i>Credits</i>
Chem. 232 or 336	3
Chem. 242 or 345. Organic Lab.	2
†Physics 103 or 106	5
Electives	5
P.E. Activity	1
Air, Mil., or Nav. Sci. 2 or 3	3
	<hr/> 18 or 19

BASIC MEDICAL SCIENCE

(See page 123.)

*For those who have not had high school chemistry (115, 116, 325 are equivalent to 111, 112, 113, 221).

†The alternative courses are provided for those who have not had high school chemistry or physics.

‡A minimum of ten (10) hours of elective work should be in one of the following fields: mathematics, physics, zoology, or chemistry. Courses must be selected in conference with an adviser.

§No credit to those who have had 116.

§A student who has taken only one year of high school algebra and one year of high school geometry should take Math. 101 to be followed later by Math. 104. A student who has taken 1½ years of high school algebra and a year of geometry may take Math. 104.

PRENURSING

MABEL S. DAVIES, *Adviser*, 121 Education Hall

The Prenursing curriculum covers four quarters during which the student earns 56 credits in the College of Arts and Sciences. It is planned to prepare the student for admission to the School of Nursing and to provide a background in general education. Required courses are listed below. Electives may be chosen in accordance with the student's individual interest.

<i>Autumn Quarter</i>	<i>Credits</i>	<i>Winter Quarter</i>	<i>Credits</i>
Engl. 101. Comp.....	3	Engl. 102. Comp.....	3
P.E. 110. Health Ed.....	2	Chem. 101. General.....	5
Soc. 110 or Anthro. 102.....	5	Electives.....	7
Electives.....	5	P.E. Activity.....	1
P.E. Activity.....	1		16
	16		
<i>Spring Quarter</i>	<i>Credits</i>	<i>Summer Quarter</i>	<i>Credits</i>
Engl. 103. Comp.....	3	Nurs. 220. Hist. of Nurs.....	3
Chem. 102. General.....	5	Nurs. 225. Introd. to Clinical Practice....	3
Psych. 100.....	5	Electives.....	2
Electives.....	2		8
P.E. Activity.....	1		
	16		

The program for the Summer Quarter is planned to give the student an opportunity to explore nursing as a field of choice. During this quarter the student works twenty hours a week, assisting graduate nurses in the care of patients on the various wards of the hospital. She receives her room and board and carries 8 credits of University work.

Any student who has completed two or more quarters of University work, including 10 credits of inorganic chemistry, and who has an interest in entering the field of nursing, may enroll in the summer program.

Throughout the prenursing course, the student is given the opportunity to confer with advisers in the School of Nursing regarding the professional curricula. For information regarding curricula in the School of Nursing, see page 191.

PRE-SOCIAL WORK

WM. H. MCCULLOUGH, *Adviser*, 500 Thomson Hall

For detailed information, see page 217; 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 interested in social work in terms of graduate study or immediate employment in public welfare agencies may wish to take certain preprofessional social work courses as electives.

Seniors planning to enter the School of Social Work should make application early in the *spring* preceding the fall in which they wish to begin their professional training, as enrollment is limited.

For admission to the University of Washington Graduate School of Social Work, students must have received their bachelor's degree and be eligible for admission to the Graduate School (see Graduate School, General Information).

THE GRADUATE SCHOOL

Including the Graduate School of Social Work

ADMINISTRATIVE OFFICERS

EDWIN RAY GUTHRIE, Ph.D.....	Dean
VERNE F. RAY, Ph.D.....	Associate Dean
LOIS J. WENTWORTH, B.A.....	Assistant to the Dean

Graduate Council: Dean Guthrie, *chairman*; Professors Bennett, Burd, P. Cross, Eby, Harrison, Hitchcock, Marckworth, A. W. Martin, Powers, Ray, Vail, Van Horn; Mrs. Hughes, *secretary*.

The Aims of Graduate Study. The principal aims of graduate study are the development of intellectual independence through cultivation of the scientific, critical, and appreciative attitude of mind, and promotion of the spirit of research. The graduate student is therefore thrown more largely upon his own resources than the undergraduate and must measure up to a more severe standard. The University is consistently increasing the emphasis on graduate work.

Organisation. The Graduate School was formally organized in May, 1911. The graduate faculty consists of members chosen on the basis of these criteria: activity in creative research; the teaching of courses for graduate credit with specific reference to research training; the supervision of graduate research.

General Information

General Admission Requirements. A person holding a bachelor's degree from the University or any other institution of good standing will be admitted to the Graduate School if he meets scholarship requirements. A student who wishes to work for a degree is subject to further entrance rules as indicated below. Work taken by a student who is not a candidate for a degree may not later be applied toward a degree except by special permission.

A student whose grade-point average during the last year of college work was 3.0 ("B") or above will be admitted with *clear status*. A student whose average was below 3.0 but above 2.5, if admitted, will be given *provisional status*; when he has earned a minimum of 12 credits during one quarter with an average of "B" or better he will be given clear status. An applicant denied either clear or provisional status because of scholarship deficiency may under certain circumstances be admitted on *probational status*. A probational student may not take courses numbered 500 or above and may not later apply any of his course work toward an advanced degree. However, after establishment of high scholarship in work taken over a period of not less than two quarters, he may apply for transfer to clear status. A student who holds a nonstandard degree from a recognized university or a standard degree from a nonaccredited university may under certain circumstances be admitted on *conditional status*. Students on conditional status who maintain a high scholarship level will be changed to clear status at such time as may be deemed proper by the Dean of the Graduate School.

Admission to Candidacy. Before being recognized as a candidate for a higher degree, a student must (1) have clear graduate status, (2) meet departmental scholarship requirements, and (3) be approved by a committee appointed to supervise the candidate's work.

The student must submit an Application for Admission to Candidacy on forms provided for the purpose. The master's candidate should submit his application to the Executive Officer of the department of his major. The doctoral candidate should submit his application directly to the Graduate School. The master's candidate is advised to submit the application not later than the end of the first quarter of residence; the doctoral candidate not later than the end of the second quarter of residence. Later filing may delay the granting of the degrees, since the following rules apply: (1) The master's candidate may not take the comprehensive final examination for the degree earlier than two quarters following the filing of the application with the department. (2) The doctoral candidate may not take the general examination earlier than four quarters following filing of the application with the Graduate School. This rule may be modified for transfer students bringing graduate credit from another school.

After receiving the master's application, the Executive Officer will appoint a committee for the candidate. For the doctoral candidate, the Dean of the Graduate

School will do likewise. There shall be a conference of the committee and the candidate (a) to determine whether the student has the quality of mind and the attitude toward advanced work which would justify study for an advanced degree, (b) to ascertain whether the student has the necessary foundation in the proposed major and minor subjects, and (c) to pass upon the proposed program of studies and to make any modification found desirable.

Relative to (b) above, it should be noted that any deficiency in undergraduate preparation for the major and minor subjects must be made up without credit toward the graduate degree. An undergraduate major is normally acceptable as an adequate foundation for a graduate major, and an undergraduate minor for a graduate minor, if the candidate's bachelor's degree was taken at a school of good standing. But if the student is from a college or university which falls below a satisfactory standard in curriculum, efficiency of instruction, equipment, or requirements for graduation, he may be required to take without credit other undergraduate courses in addition to those covered by the undergraduate major or minor.

If the student's application be accepted, he will then be regarded as a candidate for the degree and will be so notified. Supervision of the candidate's work and examination of the candidate shall be the further duties of the committee, which shall continue as originally constituted except as it may be modified by the Dean. The committee membership shall include at least the following: for the master's candidate, two members of the major department and one member of the minor department; for the doctoral candidate, three members of the major department, one member of each minor department, and a representative of the graduate faculty from outside the department. No examination shall be conducted if less than three-fourths of committee membership be present.

Registration. With the exception of students in the Schools of Law, Medicine, and Dentistry, all students who have bachelor's degrees, regardless of classification (clear, provisional, probational, or conditional), must register with the Graduate School.

Before registration all students must have their programs approved by the department concerned.

Scholarship. A student may be dropped from the Graduate School when, in the opinion of the dean and the department concerned, his work does not justify his continuance.

Employed Students. A student employed more than half time, either at the University or outside, is permitted to carry a maximum of 6 credits of graduate work, or a maximum of 11 credits if employed half time or less.

Grades and Credits. In the Graduate School the "D" grade carries no credit. When the "S" grade is given, the credits earned are excluded from the computation of grade-point averages. In the reckoning of grade-point averages for the major and the minor all grades received will be included, not only those finally accepted for the degree. When courses are repeated both the original grade and the second grade will be included in the computation. Any work done for the master's degree is invalidated after a lapse of six years; for the doctoral degree, after a lapse of ten years. Courses numbered 299 and below, and teachers' courses, do not carry credit toward major or minor requirements for advanced degrees. Courses numbered 300 to 399 inclusive carry credit toward minor requirements for advanced degrees when approved by the candidate's committee. Courses numbered 400 to 499 inclusive grant credit in the major when approved by the candidate's committee. Courses numbered 500 and above are graduate courses. Credit is not granted toward higher degrees by Advanced Credit Examination.

Sequence of Degrees. The earning of the master's degree is not a necessary step in the program for the doctoral degree, unless required by the department concerned.

Language Requirements for Foreign Students. Foreign students are required to present English as the language for the master's degree. For the doctoral degree English and a second language must be presented. Normally the second language will be French or German, but a substitution may be made if approved by the department concerned and the Dean of the Graduate School, *except* that the substituted language may in no case be the student's native tongue. To all foreign students whose native languages are other than English, these rules apply in lieu of those specified under

the heading of Degrees. Certificates of proficiency in English based upon examinations taken at the University of Washington must be filed with the Dean not later than the end of the first quarter following admission to candidacy.

Commencement. All candidates for advanced degrees must attend the commencement exercises to receive their degrees in person, unless excused by the Dean of the Graduate School.

Degrees

DOCTOR OF PHILOSOPHY. Graduate students will be received as candidates for the degree of doctor of philosophy in the following departments: Anatomy, Anthropology, Biochemistry, Botany, Chemistry and Chemical Engineering, Economics, Education, Fisheries, Forestry, Geography, Geology, Germanic Languages and Literature, History, Mathematics, Microbiology, Pharmacology, Pharmacy, Philosophy, Physics, Political Science, Psychology, Romance Languages and Literature, Sociology, and Zoology; and in the following fields: Chinese Languages and Literature, Latin-American Studies, and English. This degree is conferred only on those who have attained high proficiency in the chosen field and who have demonstrated their mastery by preparing a thesis which is a positive contribution to knowledge.

The requirements for the degree of doctor of philosophy are as follows:

1. At least three years of graduate work, of which not less than three out of four consecutive quarters must be spent in residence at the University of Washington. No quarter of less than 9 registered credits, exclusive of thesis, may be counted for residence. A maximum of 9 quarter credits may be allowed for work in University of Washington Extension classes.

2. Completion of courses of study in a major and one or two minor subjects or approved supporting courses. A "B" average must be earned in the major and in the minors separately. The major department will determine what grades are acceptable in supporting courses, within the rules of the Graduate School.

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 general 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 General Examination, given not earlier than the end of the second year and not less than two quarters before the final examination, consists of an oral, or written, or oral *and* written examination covering the general field and the specific courses in the major and minor fields. In so far as the examination is oral, it shall be before the committee appointed by the Dean at the time of the student's admission to candidacy.

The Final Examination is an oral, or oral and written examination, before the same committees as above (except as it may be modified by the Dean), on the field of the thesis and such courses as were taken subsequent to the qualifying examination. However, if the general examination did not meet with the clear approval of the committee, the candidate's entire program, or such parts thereof as may have been designated by the committee, shall be subject to review.

If there is a division of opinion in the committee in charge of either examination, the case shall be decided by the Graduate Council.

5. The preparation of a thesis, as stated above, embodying the results of independent research. If the thesis is of such character, or falls in such a department, that it requires library or laboratory facilities beyond the resources of the University, the student will be required to carry on his investigation at some other university, at some large library, or in some special laboratory. This thesis must be approved by the student's committee. A thesis committee of three members from the major department shall be appointed by the student's committee. Each member of the thesis committee shall give a written report on the thesis to the whole committee at the time of the final examination.

Two copies of the thesis in typewritten form shall be deposited with the librarian for permanent preservation in the University archives at least three weeks before the date on which the candidate expects to take the degree. One copy shall be bound at the expense of the candidate. A third copy is to be filed with the major department.

Such theses as shall be accepted by the Graduate School Publications Committee shall be printed. The candidate shall contribute \$25 to the publishing fund for theses, for which he shall receive fifty copies of his thesis if it is printed.

6. A statement certifying that all courses and examinations have been passed and that the thesis has been accepted and properly filed in the library shall be presented to the Dean at least two weeks before graduation. This statement must bear the signatures of all members of the candidate's committee.

The **DOCTOR OF COMMERCIAL SCIENCE** degree is granted by the College of Business Administration. Please see page 205 for details.

The **MASTER OF ARTS** degree is granted to those whose work lies in the field of the liberal arts. The thesis, if not an actual contribution to knowledge, is concerned with the organization and interpretation of the materials of learning. The **MASTER OF SCIENCE** degree is granted to those whose work lies in some province of the physical or biological sciences, or technology. The thesis for this degree must be an actual contribution to knowledge.

Requirements for these degrees:

1. At least three full quarters or their equivalent spent in pursuit of advanced study. Graduate work done elsewhere must pass review in the examination, and shall not reduce the residence requirement at this University.

2. Completion of a course of study (as determined by the student's committee at the time of admission to candidacy) in a major and one or two minor subjects, or in a major and approved supporting courses, and of a thesis in the major field. The work in the major and minor fields, including the thesis, shall total not less than 45 credits of which 12 are usually in the minor or supporting courses. A maximum of 18 credits may be allowed for the thesis. A "B" average must be earned in the major and in the minor courses separately. The major department will determine what grades are acceptable in supporting subjects within the rules of the Graduate School.

A total of 9 quarter credits may be allowed on the program for the master's degree either in transfer from another institution or in extension class courses of the University of Washington, or the 9 credits may be distributed between the two, subject to the approval of the department concerned.

3. A reading knowledge of an acceptable foreign language is required for the degrees of master of arts and master of science. If the major for the master of arts degree is in the field of a foreign language, a reading knowledge of a foreign language other than the major must be presented. Students are responsible for acquainting themselves at the Graduate School office with the exact dates when the language examinations are to be given each quarter.

4. An oral, or written, or oral and written examination in both the major and minor subjects, given by the student's committee. If division of opinion exists among the examiners, the case shall be decided by the Graduate Council.

5. The candidate's thesis must be approved by those members of the student's committee who are representatives of the major department. If the committee is divided in opinion, the case shall be decided by the Graduate Council. At least three weeks before the date on which the candidate expects to take the degree, two copies of the thesis shall be deposited with the librarian for permanent preservation in the University archives. The cost of binding for one copy must be deposited with the thesis. A third copy is to be filed with the major department.

6. A statement certifying that all courses and examinations have been passed, and that the thesis has been accepted and properly filed in the library, shall be presented to the Dean at least two weeks before graduation. This statement must bear the signature of all members of the student's committee.

The degrees of **MASTER OF ARTS** and **MASTER OF SCIENCE** in a particular field are given in the following technical subjects: dentistry, aeronautical engineering, chemical engineering, civil engineering, electrical engineering, mechanical engineering, ceramic engineering, ceramics, coal mining engineering, engineering, geology and mining, metallurgy, metallurgical engineering, mining engineering, forestry, home economics, mathe-

matical 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, public administration, and social work. The requirements for these degrees are essentially the same as those for the degrees of master of arts and science, except that all the work is in the major or closely correlated with it and no foreign language is required. (See departmental write-ups.)

For professional degrees offered in the College of Engineering, see page 209.

IMPORTANT NOTICE TO STUDENTS

The student is held responsible for knowledge of the general rules of the Graduate School as enumerated above. These rules are *not repeated* in the departmental write-ups below but they *apply to all departments* except where more rigid rules are set up. Only *special requirements* are listed below.

Acceptance of a student by the Graduate School does not constitute acceptance by any specific department. New students should note this fact carefully and if from outside of Seattle should correspond with the department of the chosen major before coming to the campus. Thereby special unprinted requirements may be made known to them, and they may be informed whether they can be accepted by the department in terms of scholarship and enrollment limitations.

Departmental Requirements

Requirements for the degrees of *Master of Arts* or *Master of Science* in the following fields conform to the general requirements for these degrees:

Anatomy, botany, drama, fisheries, geography, geology, Germanic languages and literature, meteorology and climatology, microbiology, philosophy, physics, physiology, psychology, Scandinavian languages and literature, speech, and zoology. For departments which have special requirements, see below.

Requirements for the degree of *Doctor of Philosophy* in the following fields conform to the general requirements for this degree:

Anatomy, botany, fisheries, forestry, geography, geology, Germanic languages and literature, microbiology, pharmacology, philosophy, physics, psychology, and zoology.

Special Requirements in Certain Departments and Fields

ANTHROPOLOGY. The *Master of Arts* degree is given with majors in the various fields of anthropology. The thesis must be a positive contribution to knowledge. The candidate must engage in field work although not necessarily on the subject of his thesis.

The *Doctor of Philosophy* degree is given with majors in ethnology, archaeology, or linguistics. The thesis must be based, at least in part, on original field work.

Students working half time, e.g., teaching fellows, are permitted to register for a maximum of 9 hours.*

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 apply for candidacy 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. Graduate study and research in biochemistry is conducted jointly by the School of Medicine and the Department of Chemistry and Chemical Engineering. For admission requirements see Chemistry and Chemical Engineering.

*See also *Important Notice to Students*, page 204.

BUSINESS ADMINISTRATION. The College of Business Administration awards three advanced degrees, the *Master of Business Administration*, the *Master of Arts*, and the *Doctor of Commercial Science*.

1. Students entering with grade-point averages from 2.75 to 2.99 for the last year of college work will be given *provisional status* in the College of Business Administration. Students with grade-point averages below 2.75 will be given *probational status*.

2. As background for candidacy for a graduate degree in the College of Business Administration, a student must hold a bachelor's degree earned in business administration from an approved school, or he must present not less than 45 quarter credits earned in the following subjects: accounting, business fluctuations, business law, business statistics, corporation finance, economics, human relations, industrial management, and marketing. Candidates for the M.B.A. or the D.C.S. who are offering credits in the above subjects as background must include at least 9 credits in accounting and some credits in business statistics, corporation finance, human relations, industrial management, and marketing.

3. The college offers graduate training in business policy and business administration and in the following fields of specialization: accounting, banking and finance, commercial education, foreign trade, insurance, marketing, personnel, production, research and statistical control, and transportation.

4. Both written and oral examinations are given to candidates for all graduate degrees.

5. The *Master of Business Administration* degree is primarily for students preparing for administrative positions in business. Hence the requirements emphasize business policy, administration, and report preparation. Some specialization is possible, however, because of the substantial allowance of elective courses. The work for the degree is not divided into a major and minor. The student's committee may permit some course work outside the college. Reading knowledge of a foreign language is not a requirement.

The program for the degree, with the minimum number of quarter credits required, is as follows:

	<i>Credits</i>
B.A. 560, 561 Policy Determination and Administration.....	6
B.A. 571 Business Studies	4
B.A. 590 Seminar in Administration	5
B.A. 591 Seminar in Administrative Controls.....	3
Electives, of which at least 6 credits must be in courses for graduates only and 5 credits may be thesis credits	27
Minimum total credits.....	45

6. The *Master of Arts* degree is primarily for students preparing for teaching positions in business administration. A major must be taken in one of the fields of graduate study offered by the college and a minor outside the college. A minimum of 20 credits, exclusive of thesis, must be offered in satisfaction of the major. A minimum of 15 credits must be earned in courses numbered 500 and above, of which at least 10 credits must be in courses offered by the college.

7. The *Doctor of Commercial Science* degree is professional in nature and primarily for students preparing for teaching and research positions in business administration, and for administrative and policy-making positions in business.

The candidate must pass oral and written examinations in business policy (including economics) and business administration (including business controls) and at least three of the fields for graduate study offered by the college. The final examination is an oral examination on the thesis and the field of the thesis. Reading knowledge of a foreign language is not required for the degree.

The candidate must earn as a minimum the indicated number of credits in courses numbered 500 and above in each of the following categories:

	Credits
Business Administration	8
Business Policy	8
Finance	3
Marketing	6
Production	3
Social Science (at least 10 in Economics)	15
	—
	43

Candidates for graduate degrees in other colleges who elect a minor in the College of Business Administration shall have as background for the minor 15 credits in acceptable courses in business administration. The minor field shall be selected from those offered for graduate study by the college. For a master's degree minor, a minimum of 15 credits is required in approved upper-division and graduate courses. The doctoral candidates requirements shall be determined at the conference for admission to candidacy.*

CHEMISTRY AND CHEMICAL ENGINEERING. Students contemplating work for a Master of Science or Doctor of Philosophy degree with research in the fields of analytical, inorganic, organic, or physical chemistry, biochemistry, or chemical engineering should communicate with the Executive Officer of the department before registration. Applicants should have completed the equivalent of a program for a bachelor's degree with a major in chemistry, biochemistry, or chemical engineering. Students enrolling in the Autumn Quarter who plan to apply for admission to candidacy should be present in Bagley Hall at 9:00 a.m. on the Friday preceding the opening of formal classes to take the first of a series of three half-day examinations (four for chemical engineering) covering the chemistry normally given in an undergraduate program for a major in chemistry. Corresponding examinations for students enrolling at other times are given during the Winter and Spring Quarters.*

CHINESE LANGUAGES AND LITERATURE. The degree of *Doctor of Philosophy* with a major in Chinese language and literature is offered by the Department of Far Eastern and Slavic Languages and Literature. The candidate must be able to read and translate literary Chinese and must know the history and structural features of the written and spoken language. A familiarity with the history and types of Chinese literature is required, including specialized knowledge of two of the following: (a) a special period, school, or author; (b) Chinese linguistics; (c) epigraphy. The candidate must further acquire a knowledge of general Chinese history and philosophy. Credit will be granted toward the degree only after the candidate has satisfied the departmental requirements for the bachelor's degree or their equivalent. Fifty-five credits in Chinese and 20 credits in Japanese or Korean, or the equivalent, must be presented.*

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 400 and above.

The requirements for a graduate minor in Latin or Greek are the same as the requirements for an undergraduate major.*

ECONOMICS. The Department of Economics awards the *Master of Arts* and the *Doctor of Philosophy* degrees.

The following fields are recognized in economics for purposes of graduate work:

- I. Economic Theory
- II. Money, Banking, and Cycles
- III. Government Regulation, Public Utilities, and Transportation
With the consent of the Advisory Committee, the graduate student may concentrate his work in two of the three sub-fields.
- IV. Labor Economics
- V. Public Finance and Taxation
- VI. Economic History
- VII. International Trade
- VIII. Economic Statistics and Mathematical Economics
- IX. National Economies

At present, fields VIII and IX are not available.

*See also Important Notice to Students, page 204.

For the *Master of Arts* degree special requirements are as follows:

1. Completion of a course of study in three fields. One of the fields shall be economic theory. In any minor field a minimum of 12 credits of approved graduate work in that field is necessary in addition to satisfying the background requirements prescribed by the minor department.

With such a minor, at least 15 credits of the required work in economics must be in courses listed for graduates only.

2. If a waiver of the minor is granted, 20 of the credits (exclusive of the thesis) shall be in the courses listed for graduates only.

3. For a minor in economics, 12 credits are required in approved advanced courses in economics.

For the degree of *Doctor of Philosophy* a preliminary conference will be held with each prospective candidate as early as possible in his career, normally not later than the first quarter of his residence in course work. He will be required to present four of the above fields for his major in economics, one of which must be economic theory including the history of economic thought.

The general examinations shall be written in each of the fields presented by the candidate, followed by a general oral examination, all to be completed within one academic quarter. The final oral examination will be taken after completion of the doctoral dissertation.

For a minor in economics for this degree candidates should arrange their programs with the head of the Department of Economics.*

EDUCATION. The Department of Education offers four advanced degrees: *Master of Arts*, *Master of Education*, *Doctor of Philosophy*, and *Doctor of Education*. Graduate work in education presupposes preparatory training of at least 20 credits in education and a satisfactory grade point. A student must also have completed at least two years of successful teaching or administrative experience to be eligible for advanced degree candidacy in education.

1. A major in education for the *Master of Arts* degree consists of 24 quarter credits of advanced work in education including Educ. 591 and at least 10 credits of work in two fields in education. Students must also register for thesis which counts for 9 additional credits.

The minor requires a minimum of 12 additional credits of advanced work in a department other than education.

2. The requirements for the *Master of Education* degree are:

a. Twenty-seven credits in advanced courses in education.

(1) Four to 7 credits in each of four of the following fields:

- | | |
|--|--|
| A. Educational psychology | H. College problems |
| B. Educational sociology | I. Curriculum |
| C. Educational administration and supervision | J. Guidance and extracurricular activities |
| D. Elementary education | K. Remedial and special education |
| E. Secondary education | L. Tests and measurements |
| F. Classroom techniques | M. Business education |
| G. History and philosophy of education and comparative education | |

(2) Education 591

b. At least 15 credits of advanced related courses outside the department of education in at least two separate departments. Five credits of the 15 are to be in courses numbered above 500. Business Education may be offered as one field in the program for the Master of Education degree. This field is limited to a maximum of 10 credits in the principles and problems of business education, materials, and distributive education. Courses in business correspondence and secretarial training and practice are not acceptable. The courses selected are subject to the approval of the Director of Education Research. (Courses in business correspondence and secretarial training and practice are not acceptable on any advanced degree program.)

c. Thesis (registration for 9 credits).

d. A written final examination over the selected four fields in education.

*See also *Important Notice to Students*, page 204.

3. The special requirements for the degree of *Doctor of Philosophy* with a major in education are:

- a. Completion of 70 credits in advanced courses in education, including Educ. 587, 588, 589 (5 to 9 credits), 490, and 591.
- b. Specialization in three fields in education (see fields A-K under *Master of Education*, 2a), with approximately 15 credits in each field.
- c. Thesis registration for 30 credits.
- d. One minor in a department other than education with 35 credits in advanced courses, or two minors in allied departments with 20 credits of graduate work in each.

If a candidate wishes to minor in education for the degree of *Doctor of Philosophy*, he must present a minimum of 35 approved credits of advanced 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 fields of education, as well as for training in the minor 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 A-L under *Master of Education*, 2a).

- (a) One major field (12 to 15 credits)
- (b) Three minor fields (6 to 9 credits in each)
- (c) Educ. 491 or 490, 591, and 587 or 588 or 589
- (d) Electives in education to total 60 credits

- (2) A minimum of 45 quarter credits of related work in departments other than education. These courses must be approved by the candidate's committee and shall be distributed among the following four groups:

- (a) Arts and Letters (9 to 15 credits)
- (b) Science and Mathematics (9 to 15 credits)
- (c) Foreign Language (9 to 15 credits)
- (d) Social Sciences (9 to 15 credits)

- (3) A thesis representing the equivalent of two full quarters of work (30 credits).

- b. At least three quarters must be spent in continuous residence at the University.
- c. General examinations, both oral and written, are to be taken at least six months before the granting of the degree; the final examination, written and/or oral, at least two weeks before the degree is granted.

Advanced degree candidates in education who are working on theses must be registered for "thesis" unless specially exempted by the Dean of the College of Education. This registration should be for the period during which the thesis is being prepared under the direction of a major professor.*

ENGINEERING. A graduate of the College of Engineering of the University of Washington, or of any other engineering college of equal standing, will be permitted to enroll for graduate work leading to the degree of *Master of Science* in an engineering department, provided he satisfies the admission requirements of that department in addition to satisfying the Graduate School requirements for admission to candidacy as described on page 200. All applicants for graduate study in engineering must have their programs approved by their major departments prior to registration, including applicants with provisional standing because of low senior grades. Any candidate from another university may be required to take a preliminary qualifying examination before permission to register is granted.

Departments granting the degree of *Master of Science* in the respective fields are listed on page 213 where the general requirements for these degrees are specified. In addition the following provisions apply:

1. The requirements for the particular degree as given in the curricula of the departments of engineering must be satisfied.
2. The thesis for this degree must be an actual contribution to knowledge.
3. No foreign language is required.
4. Students who receive Engineering Experiment Station Fellowships must be in residence a minimum of five quarters.

*See also *Important Notice to Students*, page 204.

The degree of *Master of Science in Ceramics* may be conferred upon a graduate from a college of recognized standing provided his undergraduate preparation includes suitable courses in science and ceramics but does not meet the requirements of the engineering degrees granted in this college.

The School of Mineral Engineering may award the degree of *Master of Science* to properly qualified candidates, subject to the requirements of the Graduate School for that degree.

The degrees of *Master of Science in Regional Planning* or *Master of Arts in Regional Planning* are offered cooperatively by various departments of the University. Applications should be made directly to the chairman of the curriculum in Regional and Resource Planning, Professor Richard G. Tyler.

Candidates for these degrees may be held for introductory courses in economics, geography, political science, psychology, sociology, speech, and statistics.

Since the field planning is very broad, the work for these degrees is not divided into a major and minor grouping. Candidates will be held for the following courses or their substantial equivalents. Some allowance may be made for the field of undergraduate specialization, and a limited number of courses may be substituted from the list of approved electives to allow for specialization in particular fields of planning.

The requirements are: Arch. 380; Civil Engr. 350, 403, 428; Econ. 350; Geog. 470, 540; Pol. Sci. 377; Journ. 350; Real Estate 301; and Soc. 331 and 455.

In addition to the above requirements, a thesis will normally be worked out during approved research or practice, preferably with an established planning commission.

Approved electives include: Civil Engr. 315, 452; Econ. 332, 336, 353, 433, 451, 457; Geog. 460, 477; Pol. Sci. 375, 470; Soc. 430, 522, 531; Trans. 301, 311, 313, 317.

PROFESSIONAL DEGREES: The College of Engineering offers the professional degrees, *Aeronautical Engineer*, *Chemical Engineer*, *Civil Engineer*, *Electrical Engineer*, and *Mechanical Engineer* to graduates of this college who hold the degree of bachelor of science or master of science in their respective departments, who give evidence of having been engaged continuously in responsible engineering work for not less than four years, of which at least three years shall have been in the supervision of engineering projects, who are at least thirty years of age, and who present satisfactory theses.

The college also offers, through the School of Mineral Engineering, the professional degrees of *Engineer of Mines*, *Metallurgical Engineer*, and *Ceramic Engineer* to candidates who present evidence of five years of professional experience in the proper field after receiving a 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.*

ENGLISH. As preliminary training, candidates for advanced degrees in English are required to offer the equivalent of an undergraduate major in English at the University of Washington. In his graduate program, the candidate may specialize in English literature, literary criticism, language, rhetoric, or advanced writing. Programs for advanced study are made in consultation with the departmental Committee on Graduate Studies. With the application for any graduate degree, the candidate must file with this committee one of his research papers.*

*See also *Important Notice to Students*, page 204.

The Master's Degree. Candidates for the master's degree with a major in English language and literature must present a minor and at least 30 credits in English, including English 505-507, and one of the following: 508, 530, 547; 10 credits in the seminar of the period of the thesis; and 5 advanced English elective credits. Candidates for the master's degree with a major in advanced writing may substitute for the 10 credits in the period of the thesis 10 credits in one of the following groups: English 410, 411, 412; 437, 438, 439; 456, 457, 458; 484, 485, 486; Journalism 473, 474-475; and must select a minor in literature or an approved substitute. An original, complete work in critical, expository, or narrative writing may be substituted for the thesis if recommended by the instructor in charge of the student's course in advanced writing and if the work is approved unanimously by the English department and the candidate's committee.

Minors. For a candidate for the master's degree in English the minor must be in an approved field and must total 9 advanced credits or whatever greater number may be required by the minor department. The student may petition for waiver of the minor if his previous training includes a major or a broad selection of courses in disciplines other than English.

For majors in subjects other than English, a minor in English must be equivalent to an undergraduate major, 50 credits in undergraduate and graduate work combined. At least 10 of these credits must be earned in residence at the University of Washington as a graduate student. A minimum of 5 must be in graduate courses.

The major and minor should be in related fields.

Doctor of Philosophy. Doctoral candidates must demonstrate a reading knowledge of Latin, if, in the judgment of the departmental Committee on Graduate Studies, Latin is needed for the candidate's specialization, and must take English 531 and 532 (Old English). It is recommended that the training in at least one language other than English include advanced studies in the literature of the language. These language requirements are to be supplemented by a familiarity with the classics of ancient and modern languages.

Individual programs for doctoral studies are arranged in consultation with the Committee on Graduate Studies. These programs include the above 10 credits in Old English; 10 in a seminar in each of three periods (the period before Shakespeare; the period from Shakespeare to the end of the eighteenth century; nineteenth-century English and American literature); and such other courses as are necessary to support the candidate's thesis. The candidate may specialize in literature, language, literary criticism, general literature, or rhetoric, and may count for credit the courses in advanced writing accepted for the master's degree in advanced writing.

The general examination is divided into definite parts:

(1) Written examination on the period of the thesis and on two related periods of divisions of study.

(2) Oral examination in three parts: lecture or discussion, questions on the minor, and general questioning.

- a. On the morning of the day set for the qualifying examination, the candidate is given questions or topics on the divisions of his study not included in his written examination. From these questions or topics, he shall choose one each from two divisions of his study and prepare two lectures or discussions to be delivered to his examiners at the beginning of the oral examination. Each lecture may be followed by questioning.
- b. Then follows the minor examination in the form desired by the minor department.
- c. Questioning on the three written examinations and related topics closes the examination.

For the requirements for the degree of Master of Arts with major in General Literature, see GENERAL LITERATURE.

FAR EASTERN AND RUSSIAN. The Far Eastern and Russian Institute (see page 183), in cooperation with the various departments, arranges for the degrees of *Master of Arts* and *Doctor of Philosophy* to be taken in most of the social sciences and humanities with special concentration on the Far East. A Far Eastern language or Russian is usually substituted for one of the European languages normally required. The theses are supervised by the Institute and the department concerned.

The Far Eastern and Slavic Languages and Literature Department offers the degree of *Master of Arts* in Far Eastern and Slavic languages and literature. The candidate elects a linguistic major—Chinese, Russian, Slavic, or Japanese—and offers an approved program of supporting courses. Twenty credits of advanced language work must be offered. The thesis, which counts from 4 to 9 credits, must be in addition to 45 course credits.

A Master of Arts degree is also offered in Far Eastern and Russian studies. A working knowledge of the Russian language is required for the Russian field. Knowledge of a Far Eastern language is desirable but not required if the candidate presents strong specialization in a discipline. Forty-five upper division and graduate credits in Far Eastern or Russian subjects are required. There must be a minimum of 11 credits in seminars, including F.E. 510. The thesis, which counts for 6 to 9 credits, must be in addition to the 45 course credits.*

For information regarding the degree of *Doctor of Philosophy* in Chinese Languages and Literature, see page 206.

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 "B" or better can be accepted for Forestry courses numbered in the 400 series.*

GENERAL LITERATURE. The *Master of Arts* degree is offered with major in General Literature. Prerequisites are: (1) an undergraduate major in English or one of the other language departments at the University of Washington, or the equivalent; (2) reading command of one foreign language, ancient or modern; and (3) General Literature 450, or the equivalent. Requirements for the major are 10 credits in general literature and 30 credits in courses selected with the adviser to make a coherent program, and the preparation of a thesis in the field of general literature.*

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.

For the degree of *Master of Arts* a minimum of 45 credits is to be taken in history. A petition for waiver of the minor may be submitted. A reading knowledge of one modern foreign language is required. From 4 to 9 credits will be allowed for the thesis. The candidate must complete History 501 and 502, 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 15 credits in history shall be taken, of which 10 must be in one historical subject and the other 5 must be in History 501 or 502.

For the degree of *Doctor of Philosophy* an undergraduate major, or its equivalent, in history is a prerequisite. A reading knowledge of French and German will be required.

The degree of *Doctor of Philosophy* is not to be attained by passing any stipulated number of courses. It is granted to students who, having a broad and thorough knowledge of history and the historical literature, show a rich and intimate knowledge of the subjects in which they have specialized and who contribute to historical knowledge by writing a thesis containing the results of their independent research.

*See also *Important Notice to Students*, page 204.

As a part of their preparation for the degree all students will complete History 501 and 502 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 five fields will be selected, after consultation with the department, from at least one subject in each of the following divisions:

Division I: Ancient History, Roman Law, Medieval History, Renaissance History

Division II: Modern European History, English History, British Empire

Division III: American History

In addition to these fields in history each student will be expected to complete a minor in another department.

For the minor in history when the major is in another department, the department will accept only those students whose preparation is deemed adequate. The candidate must complete History 501 and 502 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 501 or 502; and will in addition prepare to pass examinations in two fields of special study. The rest of the work will be arranged by consultation with the Far Eastern and Slavic Languages and Literature Department.

Students seeking the *Doctor of Philosophy* degree must—to be accepted—have had the equivalent of an undergraduate minor in history. They will be expected to take History 501 and 502, to complete one year of seminar work, and to prepare for examinations in two fields of special studies. The balance of their program will be arranged by consultation with the Far Eastern and Slavic Languages and Literature Department. A Far Eastern language or Russian may be substituted for either French or German.*

HOME ECONOMICS. The department offers the following advanced degrees:

(1) *Master of Arts* or *Master of Science* for which a reading knowledge of a language and a minor in an allied field are required. The *Master of Arts* is attained by work in textiles and clothing, the *Master of Science* by work in foods and nutrition. The work in each field may be combined with home economics education or family economics. (2) *Master of Arts in Home Economics* or *Master of Science in Home Economics* for which all the work may be done in home economics; or advanced courses in art, in economics, in the biological, physical, or social sciences, or in similar allied fields may be chosen in support of the selected home economics field, the total number of these credits not to exceed 12. For these degrees the student must present undergraduate preparation, in home economics and basic fields, acceptable to the staff. A reading knowledge of a foreign language is not required.

Graduates in institution administration, wishing to become hospital dietitians, will select a hospital training course, which is a dietetic internship, for their fifth year. Those wishing to become dietitians in lunch rooms, restaurants, or dormitories will select an administration internship. Such a course is offered for a limited number of students. Some of these internships offer graduate credit and completion of all approved courses makes students eligible for membership in the American Dietetic Association.*

INSTITUTE OF PUBLIC AFFAIRS. Under the Department of Political Science this Institute offers a two-year professional curriculum leading to the degree of *Master of Public Administration*. The purpose is to prepare persons for administrative positions in the public service, rather than to train technical specialists, teachers or research technicians.

The program consists of instruction in six fields: the administrative process, the development of American institutions, the economics of public activity, public law, public management, and administrative problems. Three of these fields are studied in each year of the two-year program. Each student undertakes the analysis of various problems in each of the indicated fields and will be expected to complete successfully an approved internship during the summer quarter between the first and second years.

*See also *Important Notice to Students*, page 204.

The program will be limited to a small group of college graduates who show special promise of success in the public service as judged by high intellectual ability, seriousness of purpose, personality, and personal integrity. A broad educational background in the social sciences is desired.*

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.

LATIN-AMERICAN STUDIES. An interdepartmental major for the *Doctor of Philosophy* degree is offered, comprising courses in the Spanish and Portuguese languages, Latin-American literature, and supporting courses in the various departments.*

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 414 may be applied on the program for an advanced degree.

Master of Arts. The general requirements are the same as those for the Master of Science degree. Certain courses intimately related to the elementary field and designed primarily for high school teachers are open in the summer and may be offered toward this degree.

Master of Science. The candidate must present a minimum of 33 approved credits in mathematics, including the thesis. This course work must include at least 6 credits in each of the fields of algebra, analysis, and geometry.

The minor in mathematics for the master's degree requires at least 12 credits satisfactory to the department (exclusive of Mathematics 307, 308, 309), at least 9 of which shall be taken in residence.

Master of Science in Mathematical Statistics. The undergraduate preparation shall consist of courses in mathematical statistics through Chi-Tests or equivalent. The candidate must present a minimum of 33 approved credits in mathematics, including the thesis. This work may include, on approval, some courses in mathematical statistics needed to make up deficiencies in undergraduate preparation and must include at least 15 credits in graduate courses in mathematical statistics.

Doctor of Philosophy. The general examination of the candidate shall cover the fundamental aspects of analysis, geometry, and algebra, together with a searching review of the field of the student's special interest.

A minor in mathematics for the degree of *Doctor of Philosophy* requires a minimum total of 33 approved credits, which may include acceptable courses beyond calculus taken as an undergraduate, but which shall include at least 6 credits in each of the fields of algebra, analysis, and geometry. The student must obtain approval by the department of courses selected in these fields. As supporting courses 15 approved credits constitute a minimum.*

MUSIC. Candidates for the degree of *Master of Arts in Music* must demonstrate proficiency in piano, sight reading, and melodic and harmonic dictation. The requirements for the four programs offered follow:

Major in Composition: (1) the equivalent of all music courses now required for the undergraduate major in composition; (2) 25 credits in graduate composition, which shall include compositions for chamber music, orchestra, chorus, and the thesis; (3) 21 credits in approved electives.

Major in Music Education: (1) the equivalent of all music courses now required for the undergraduate major in music education; (2) two years of approved teaching experience of which one must precede the graduate courses in music education; (3) 24 credits in seminars and research in music education, and the thesis; (4) 21 credits in approved electives.

Major in Musicology: (1) the equivalent of all music courses now required for the undergraduate major in music history and literature; (2) evidence of proficiency in the techniques of composition and in some branch of performance; (3) 24 credits in music history, seminars and research, and the thesis; (4) 21 credits in approved electives; (5) a reading knowledge of either French or German.

*See also Important Notice to Students, page 204.

Major in Music Performance (Organ, Piano, Violin, Voice): (1) the equivalent of the music courses required for the undergraduate major in instrumental and vocal instruction; (2) at least six full quarters spent in pursuit of advanced study; (3) 24 credits in repertoire in the major field; (4) 18 credits in seminar and thesis; (5) two or more minors.

Requirements for a minor in music when the master's degree is in another department: 12 credits chosen from approved upper-division music courses.*

NURSING. Graduate work in nursing is offered with a major in the fields of (1) administration in schools of nursing, (2) teaching and supervision, (3) public health nursing, and (4) psychiatric nursing and mental health.

For the degree of *Master of Nursing* the minor must be chosen from allied fields, such as the social sciences, education, or social work. 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. The College of Pharmacy offers the degrees of *Doctor of Philosophy* and *Master of Science in Pharmacy* with majors in Pharmacy, Pharmaceutical Chemistry, Toxicology, Pharmacognosy, and Food Chemistry. For the master's degree not less than 20 credits shall be taken in pharmacy. At least 12 credits must be earned in a research problem and the preparation of a thesis. Not more than 25 credits are accepted in courses from other departments.*

PHYSICAL EDUCATION AND HYGIENE. The degree of *Master of Science in Physical Education* conforms to the general requirements.

For a minor in physical education for the master's degree, the student must present a minimum of 26 preparatory credits in physical education and a course in physiology, and must offer at least 12 credits in advanced courses.*

POLITICAL SCIENCE. Completion of the departmental requirements for the undergraduate major or their substantial equivalent is prerequisite for admission to candidacy for either the master's or the doctoral degree. Deficiencies must be made up without credit.

The candidate must acquire mastery of a field of concentration, in which the thesis will be prepared, and additional supporting fields, to be selected from the following: political theory, international law and relations, comparative government, public law, public administration, American government and politics, and state and local government. Combinations of some of the above fields may be required. With the approval of his committee, a candidate may offer a special regional political science field, e.g., United Kingdom, Western Europe, Far East, Middle and Near East, or U.S.S.R. A related field in history, economics, sociology, psychology, geography, or regional studies (other than political science) may be included in the candidate's program if approved by his committee. Only a single special or related field may be so substituted. The field of political theory is required in all programs.

For the *Master of Arts* degree a candidate must offer a field of concentration and two supporting fields. A minimum of 36 credits is required, so distributed as to assure a balanced program.

For the *Doctor of Philosophy* degree a candidate must offer a field of concentration and four supporting fields, totaling at least 100 credits.

Not less than two-thirds of the courses included in the degree program shall consist of those numbered 500 and above.

FAR EASTERN AND RUSSIAN STUDIES. In cooperation with the Far Eastern and Russian Institute, the department offers the master's and doctoral degrees, with specialization in Far Eastern or Russian affairs. The master's program does not differ from that outlined above except that the third field selected must be a specialized field in the political science of the Far East or Russia or a related field of Far Eastern or Russian subjects other than political science, and that the candidate must have a reading knowledge of the appropriate language, Russian, Chinese, or Japanese. The doctoral program differs from that outlined above in that the candidate must offer as his fourth and fifth fields a specialized field of Far Eastern regional political science and a related field of Far Eastern subjects other than political science, or specialized Russian re-

*See also *Important Notice to Students*, page 204.

gional political science and a related Russian subject field other than political science. A minimum of 60 credits is required in the three general political science fields; a minimum of 40 credits in the specialized and related fields. The latter may include courses offered in political science and by the Far Eastern and Russian Institute. One of the foreign languages offered by the candidate must be the appropriate regional one, Russian, Chinese, or Japanese.*

For information regarding the degree of *Master of Public Administration* see the Institute of Public Affairs, page 212.

ROMANCE LANGUAGES AND LITERATURE. Requirements for the *Master of Arts* degree: 1. A thesis for which 9 credits are granted upon satisfactory completion. (It is not necessary to register for these credits.) The thesis must be submitted to the department at least four weeks before the end of the quarter in which the degree program is to be completed. 2. A coherent program of courses which totals at least 36 credit hours divided between major and minor subjects. The minor requirement may be waived only by the Dean of the Graduate School. 3. At least 20 credits (exclusive of thesis) must be obtained in courses numbered 500 or above. 4. A knowledge of representative literary works such as are listed in syllabi obtainable from the department must be had: the M.A. and B.A. syllabi for an M.A. major and the B.A. syllabus for an M.A. minor. 5. Oral proficiency in the major language is essential.

Requirements for the *Doctor of Philosophy* degree: 1. A coherent program of courses totaling at least 90 credits, exclusive of thesis, of which normally 45 are in the major subject, 30 in the first minor, and 15 in the second minor. The requirement as to the number of minors and distribution of credits may be modified by the committee. 2. All candidates for the degree with a major in this department, regardless of the field of the minor or minors, are required to know the history of two of the Romance languages (this requirement may be fulfilled by satisfactory completion of Romance Languages 505, 506, and 507, supplemented respectively by French 512 and 513, Spanish 511, 512, and 513, or Italian 512 and 513), and the history of three Romance literatures as outlined in at least the B.A. syllabus provided by the department. 3. At least two-thirds of the course credits must be obtained in courses numbered 500 or above. 4. A knowledge of representative literary works such as are listed in syllabi obtainable from the department must be had: the Ph.D., M.A., and B.A. syllabi for a Ph.D. major; M.A. and B.A. syllabi for a first minor, and B.A. syllabus for a second minor. 5. Oral proficiency in the major language is essential.

In cases where a Romance language is used as a minor for the doctoral degree, the requirements are at least the same as for the undergraduate major in that language and literature.

A knowledge of Latin and an acquaintance with masterpieces of other literatures are strongly recommended.*

Under the heading Latin-American studies will be found the requirements for that major.

GRADUATE SCHOOL OF SOCIAL WORK. For information concerning the Graduate School of Social Work, see page 217.

SOCIOLOGY. Candidates for the master's and doctor's degrees must have completed undergraduate requirements of the Department of Sociology, or the equivalent. Students whose undergraduate work in sociology seems inadequate may be required to pass a qualifying examination before admission to candidacy. Students with an undergraduate average of less than "B" are advised against undertaking graduate work.

The fields of specialization include the following: sociological theory, research methods and social statistics, ecology and demography, social interaction, social institutions, social organization, and social disorganization.

All candidates for advanced degrees are required to submit the thesis to the chairman of the thesis committee not later than the end of the fourth week of the quarter in which the degree is to be taken.

Master of Arts majors are required to take 36 quarter credits of undergraduate work and 24 quarter credits of advanced work. At least 10 credits of the advanced work must be in strictly graduate courses.

Minors are required to take a minimum of 36 credits (graduate and undergraduate), of which at least half must be taken as a graduate student, including 6 credits of strictly graduate courses.

A thesis topic with a written prospectus, sponsored by a member of the faculty,

*See also *Important Notice to Students*, page 204.

must be submitted to the department for approval at the time of application for admission to candidacy.

The foreign language examination must be passed at least three months before the date of the final examination. Admission to final examinations is made upon written request by the candidate and formal approval of the committee. This examination will cover two of the fields in the major, as enumerated above, and such fields in the minor as may be determined by the members of the committee.

Minors in sociology will take a general examination covering the course work.

Doctor of Philosophy. The degree of Master of Arts should normally precede the Ph.D.; this requirement may be waived by formal action of the department.

Majors must have 36 credits of undergraduate work and a minimum of 60 credits of graduate work. At least one-third of the graduate work must be taken in strictly graduate courses in Sociology. Minors must take a minimum of 18 credits of undergraduate work and 30 credits of more advanced work, including 10 credits of strictly graduate courses.

The application for admission to candidacy is to be presented to the chairman of the department before the beginning of the second quarter of residence for graduate work.

A thesis topic with a written prospectus, sponsored by a member of the faculty, must be submitted for approval.

Admission to both general and final examinations is made upon written request by the candidate and formal approval. The written general examination will cover four fields of specialization in the department, of which one must be research methods and social statistics; these are to be selected and indicated by the candidate. The minor for the Ph.D. must offer two fields of specialization. An oral examination following the written examination may be given at the discretion of the candidate's committee.*

PUBLIC OPINION LABORATORY. The Sociology Department and the laboratory offer a minor for the *Master of Science* and *Doctor of Philosophy* degrees in cooperation with the various social science departments. The organization and objectives of the laboratory are described in the introductory section of the catalogue. Graduate students working in the laboratory are appointed as supervisors of surveys which serve to provide the material for their theses; laboratory training is thereby provided in the testing of hypotheses and in conducting controlled experiments in the course of basic methodological or civic research.

A student is eligible if he holds a bachelor's degree with a major in sociology, psychology, anthropology, economics, journalism, or social work. The program requires:

- a. Completion of the usual requirements of the major department except that the thesis will be executed in the Public Opinion Laboratory;
- b. Completion of at least 36 hours of credit for the M.A., or 60 hours for the Ph.D., in courses in the sphere of work of the Public Opinion Laboratory, including completion with credit of all courses listed below, except those which were taken as an undergraduate, provided that such undergraduate credits may be used to reduce the total hour requirement by an amount not to exceed 18 hours for the M.A. and 30 hours for the Ph.D.;
- c. Completion of additional hours to make up the required total in courses which shall be designated (from the list published by the Public Opinion Laboratory) by the student's committee at the time of his admission to candidacy.*

Required Courses:

Sociology 310.	General Sociology. (5)
(Students having had Soc. 110 are exempt.)	
Sociology 411, 412.	Systematic Sociology. (3, 3)
Sociology 442.	Public Opinion. (3)
or	
Psychology 446.	Public Opinion Analysis. (3)
Sociology 420.	Methods of Sociological Research. (5)
or	
Psychology 413.	Tests and Measurements. (5)
Psychology 301.	Statistical Methods. (5)
(Students having had Soc. 131, Math. 113 or B.Stat. 201 are exempt.)	
Sociology 438.	Sampling and Experimentation. (5)
Philosophy 470.	Advanced Logic. (5)

*See also *Important Notice to Students*, page 204.

THE GRADUATE SCHOOL OF SOCIAL WORK

WM. H. McCULLOUGH, *Acting Director*, 500 Thomson Hall

The Graduate School of Social Work, organized in 1934, maintains a two-year curriculum which conforms to the standards of the American Association of Schools of Social Work, of which the school is a member. Among the types of positions to which this training may lead are: family case work, child welfare work, social work in the schools, medical social work, psychiatric social work, group and neighborhood work, community organization, social insurance, social research, and public welfare administration.

Admission. Application forms must be secured from the office of the school, 500 Thomson Hall, and confirmation of admission must be received from the school.*

Since the facilities for field work limit the number of students to be admitted, applications for admission should be submitted by July 15, on regular forms, with official transcripts of all previous college work completed.

Requirements for admission are: (1) well-rounded undergraduate preparation that has included at least 36 quarter credits in social sciences, such as economics, political science, sociology, anthropology, psychology; (2) a basic course in physiology or biology. Personal qualifications, including health, scholarship, and indications of probable success in social work are also considered by the admissions committee.

Persons under twenty-one or more than thirty-five 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 six quarters of work.

A broad first-year curriculum is required of all students. This includes social casework, social component in illness and medical care, introduction to public welfare, social statistics, social group work, social insurance, social welfare organization, public assistance, community organization for social welfare, social work research, supervised field work, and courses in psychopathology and personality development (Department of Psychiatry).

In the second year, advanced courses are available in the major areas of practice, including family social work, child welfare, medical social work, psychiatric social work, community organization, public welfare, and social agency administration.

Students unable to remain longer than one year can complete in that time the basic curriculum, prescribed by the American Association of Schools of Social Work, which is outlined above. Upon securing employment, they are then eligible to apply for admission to the American Association of Social Workers.

Medical Social Work Curriculum. The medical social work sequence begins in the autumn quarter of each year and requires three quarters to complete beyond the time required for the basic curriculum. (Students completing the departmental curriculum will find that they have met the educational standards of the American Association of Medical Social Workers.)

Requirements for the Master of Social Work Degree:

1. The master's degree is awarded, not on the basis of credits for courses completed, but in recognition of the student's competency in both theory and practice in the field of social work. The comprehensive examination is the test of his competency.

2. Field work, including from 800 to 1080 clock hours, depending upon the field of specialization, is taken in conjunction with the appropriate class work.

3. A minimum of three full quarters of work in residence is required. The course requirements ordinarily cover a minimum of 76 quarter credits in addition to the thesis. A reading knowledge of a foreign language is not required.

4. Candidates for the Master of Social Work degree are required to present three copies of their thesis in final form—two for the University Library, and one for the Graduate School of Social Work Library.

Fellowships, Scholarships, Prizes. See page 112.

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.

*See also *Important Notice to Students*, page 204.

SECTION III — ANNOUNCEMENT OF COURSES

EXPLANATION

This section contains a list of all courses of study offered in the University. The departments are arranged in alphabetical order.

The University reserves the right to withdraw temporarily any course which has not an adequate enrollment at the end of the sixth day of any quarter. No fee will be charged for changes in registration made necessary by the withdrawal of a course.

The four-quarter plan has been adopted to enable the University to render larger service. It is more flexible than the semester plan and adds eleven weeks' instruction to the regular year. It is impossible, however, to provide that each course be given every quarter.

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.

Course descriptions for each department include the number of the course as used in University records, the title, the number of credits (given in parentheses), a brief description of the subject matter and method, the prerequisites, the former course number, and the name of the instructor whenever the department has supplied that information. *An asterisk (*) is used in place of a numeral when the credits are variable.*

Courses bearing numbers from 100 to 199, inclusive, are normally offered to first-year students; 200 to 299, inclusive, are normally for second-year students; 300 to 399, inclusive, are normally for third-year students and are not open to graduate students for credit toward advanced degrees except when applied by permission toward the graduate minors; and 400 to 499, inclusive, are normally for fourth-year students and are open to graduate students for credit toward advanced degrees. Those numbered 500 and up are graduate courses open to graduates only. Courses to which the letter "J" is appended are joint courses in two or more departments and as such grant credit in one of the departments. "N" preceding a course number signifies that no credit will be given.

In the lists of department faculties, the first name in each instance is that of the department's executive officer.

ANTHROPOLOGY

*Professors Gunther, Davidson, Ray; Associate Professors Hulse, Jacobs, Kirchhoff;
Assistant Professors Garfield, Roys; Instructors Burroughs, Massey, Osborne*

101. **Principles of Anthropology: Race.** (5) Evolution and heredity as applied to man; racial classification and its significance. Formerly 51. Staff
102. **Principles of Anthropology: Social Customs.** (5) Man's social customs, political institutions, religion, art, literature, and language. Formerly 52. Staff
103. **Principles of Anthropology: Prehistory.** (5) Survey of world archaeology. Formerly 53. Burroughs
210. **American Indians.** (5) Ethnographic study of the native cultures of North America. Formerly 60. Gunther
213. **Africa.** (5) Prehistory, physical anthropology, and ethnography of native peoples. Formerly 63. Garfield
215. **South America.** (5) The sources and character of South American culture, with special emphasis upon Indian components. Formerly 65. Kirchhoff
217. **Ancient Mexico and Central America.** (5) Descriptive and interpretive survey of the high civilization of native North America, particularly of the Maya and the Aztec. Formerly 66. Kirchhoff
270. **Field Course in Archaeology.** (12) Beginning field course in archaeological methods and techniques. Formerly 199. Burroughs
280. **Theories of Race.** (2) Survey of human heredity; racial history; race differences. Not open to students who have had 101 or 390. Formerly 91. Garfield, Jacobs, Ray
310. **Polynesia and Micronesia.** (2) Prehistory, physical anthropology, ethnography and ethnology of native peoples, including cultural dynamics and culture contacts. Hulse
311. **Melanesia.** (2) Survey of native cultures; economic basis; social and political structure; religion; arts. Culture history of native peoples, linguistics, and race types. Pr., 101 or 15 hours of social sciences. Hulse
312. **Indonesia.** (2) Prehistory and native cultures. Effects of culture contact on modern native cultures. Summary of race history and language groups. Pr., 102 or 15 hours of social sciences. Hulse
320. **Primitive Technology.** (5) An analysis of the equipment and manufactures used by primitive people, with the use of Museum material for laboratory work. Formerly 103. Gunther
350. **Basis of Civilization.** (3) Basic inventions, discoveries, and technological achievements of the ancient and primitive worlds; the beginnings of science. Formerly 105. Davidson
370. **Analysis of Archaeological Data.** (5) Analysis and interpretation of archaeological field data for final reporting. Pr., 270. Burroughs
371. **Methods and Problems of Archaeology.** (5) Includes field experience in this locality. Formerly 107. Pr., 103. Burroughs
380. **Primate and Human Evolution.** (3) Traces the development and relationships of primates, including man, from comparative and palaeontological data. Hulse
390. **Introduction to Anthropology.** (5) A survey of the science of anthropology. Designed for non-majors. Not open to those who have had 101, 102, or 103. Formerly 152. Gunther, Davidson
411. **Indian Cultures of the Pacific Northwest.** (3) Study of native peoples from N. W. California to the Gulf of Alaska. Pr., 102 or 210. Formerly 111. Garfield
413. **Aboriginal Peoples of Australia.** (3) Pr., 102 or 15 hours of social sciences. Formerly 113. Davidson
414. **Peoples of Central and Northeastern Asia.** (3) An ethnological survey, stressing the relationship of this area to Northwestern America. Pr., 102 or 15 hours of social sciences. Formerly 114. Hulse
- 419J. **Australia: Its Peoples, Environment, and Institutions.** (5) An integrated study of geographic and cultural patterns, of economic and political development and its relations with the Commonwealth of Nations. Given in conjunction with history and geography. Formerly 179J. Davidson, Dobie, Lawton
431. **Primitive Literature.** (3) Formerly 141. Garfield
432. **Magic, Religion, and Philosophy.** (3) Formerly 142. Ray
433. **Primitive Art.** (3) Aesthetic theories, artistic achievements of preliterate peoples, with Museum material for illustration. Pr., 10 hours anthropology or art. Formerly 143. Gunther
435. **Early Economic Systems.** (3) Gathering, hunting, fishing, and pastoral peoples. Formerly 145. Davidson
436. **Early Economic Systems.** (3) Early farming peoples. Formerly 146. Kirchhoff
437. **Primitive Social and Political Institutions.** (3) Pr., 102. Formerly 185. Ray
- 441J. **Culture and Personality.** (5) The structure of personalities; processes and factors in its development in differing types of culture. Given in conjunction with psychology. Pr., Psych. 100, Anthro. 101, 102, or 103, and junior standing. Formerly 101J. Jacobs, Strothers
442. **Socialization of the Child in Primitive Cultures.** (5) How the child is molded to cultural patterns and prepared for adult life in various primitive societies. Comparative data from tribes in North and South America, Africa, Asia, Australia, Oceania. Pr., 102 or 15 hours of social sciences. Formerly 149. Davidson

- 450J. Introduction to General Linguistics. (5) Descriptive and historical techniques in the analysis of languages. Given in conjunction with Germanics. Jacobs, Reed
 451. American Indian Languages. (3) Methods of field research and training in phonetic recording. Pr., 450J. Formerly 151. Jacobs
 460. History of Anthropological Theory. (2) Pr., 15 credits in anthropology. Formerly 160. Jacobs
 480, 481, 482. Physical Anthropology. (3, 3, 3) Anthropometry and somatology of man. For advanced undergraduates. Pr., Biol. 101J-102J or Anthro. 101, 102, 103. Formerly 186, 187, 188. Hulse
 499. Undergraduate Research. (*, maximum total 12) Pr., permission. Formerly 190. Staff

Courses for Graduates Only

505. Field Techniques in Ethnography. (3) Formerly 250. Ray
 506. Analysis of Research Data. (3) Directed development of student's ethnographic field research into publishable reports. Formerly 205. Gunther
 511. Cultural Problems of the Northwest Coast. (3) Garfield
 519J. Seminar on Asia. (3) The continent will be taken in large cultural regions. Formerly 224J. Wilhelm, Kirchhoff, Staff
 521. Native American Culture History. (4) A historical interpretation of the geographical distribution of critical aspects of North and South American Indian cultures. Formerly 203. Kirchhoff
 522. 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. Formerly 120. Ray
 525. Seminar in Culture Processes. (3) Formerly 207. Davidson
 531. Analysis of Oral Literature. (3) Formerly 241. Garfield
 542. Personality Patterns in Japanese Culture. (3) Formerly 208. Hulse
 551. Field Techniques in Linguistics. (3) Formerly 252. Jacobs
 560. Seminar in the History of Anthropology. (3) Formerly 260. Jacobs
 561. Seminar in Methods and Theories. (3) Formerly 204. Ray
 570. Seminar in Archaeology. (3) Formerly 251. Staff
 580. Anthropology and Contemporary Problems. (3) Anthropological analysis of intercultural and interracial problems. Formerly 206. Gunther
 600. Nonthesis Research. (*) Formerly 300. Staff
 Thesis.

ARCHITECTURE

Professors Herrman, Gowen, Hill, Pries; Associate Professor Jensen; Assistant Professors Brightbill, Dietz, Mithun, Radcliffe, Steinbrueck, Wilson, Wolfe; Instructors Hugus, Lovett, Ross, Sproule, Waldron, Wherrette; Acting Instructor Rohrer; Lecturer Hansen

- 100, 101. Architectural Appreciation. (2, 2) General survey of architectural design from a historical viewpoint. Formerly 1, 2. Herrman
 105. The House. (2) An analysis of domestic architecture. Formerly 3. Herrman
 124, 125, 126. Basic Design. (6, 6, 6) Design and drawing fundamentals; to provide a working knowledge, language, and tools for the architect. Formerly 24, 25, 26. ~~10 11 12~~ Hugus, Wilson, Wherrette
 224, 225, 226. Architectural Design, Grade I (7, 7, 7) Pr., 126. Formerly 54, 55, 56. Lovett, Ross, Sproule, Steinbrueck, Pries
 230, 231, 232. Materials and Their Uses. (2, 2, 2) Pr., Physics 113. Formerly 61, 62, 63. Waldron
 240, 241, 242. Water Color. (3, 3, 3) Still-life and outdoor sketching. Pr., major in architecture. Formerly 40, 41, 42. Hill
 276. Statics. (3) Basic analysis of forces and force systems by analytical and graphic methods. Stress analysis of trusses. Pr., Math. 156. Formerly 47. Jensen and Staff
 277. Strength of Materials. (3) Stress and strain. Strength and elastic properties of structural materials. Riveted and welded joints. Design of simple timber and steel beams, girders, and columns. Pr., 276. Formerly 48.
 278. Analysis and Design of Trusses. (3) Determination of roof loads. Complete designs of various types of roof trusses in timber and steel. Pr., 277. Formerly 49. Jensen and Staff
 300, 301. History of Architecture. (2, 2) Byzantine, Romanesque, and Gothic Periods. Pr., 101. Formerly 51, 52. Jensen and Staff
 314, 315, 316. Architectural Drawing. (4, 4, 4) Orthographic projection, shades and shadows, perspective, drafting and rendering techniques. Formerly 110, 111, 112. Rohrer, Mithun
 324, 325, 326. Architectural Design, Grade II. (7, 7, 7) Pr., Arch. Design, Grade I. Formerly 104, 105, 106. Dietz, Gowen, Lovett, Ross, Sproule, Wherrette
 360, 361. Theory of Architecture. (2, 2) Design theory, composition, scale, planning. Pr., Arch. Design, Grade I. Formerly 152, 153. Gowen
 376. Structural Design: Timber and Steel. (4) Analysis and design of complete building frames. Laminated wood frames. Uses of arches and rigid frames in building construction. Earthquake resistance in design. Pr., 278. Formerly 116. Radcliffe, Brightbill
 377. Structural Design: Reinforced Concrete. (4) Introduction to the analysis of continuous structures. Development of basic design equations. Design of reinforced concrete beams, girders, one-way and two-way floor slabs. Pr., 376. Formerly 117. Radcliffe, Brightbill

378. **Structural Design: Reinforced Concrete.** (4) Design of flat slabs, columns, stairways, footings, foundation walls, and retaining walls. Pr., 377. Formerly 118. Radcliffe, Brightbill
380. **Introduction to City Planning.** (3) Circulation, recreation, open areas, public buildings, private development, new towns, and garden cities. Pr., major in regional planning or junior in architecture. Formerly 135. Wolfe
- 400, 401, 402. **History of Architecture.** (2, 2, 2) Comparative study of the Renaissance in Europe. Pr., 301. Formerly 101, 102, 103. Herrman
403. **History of Architecture.** (2) From the middle of the eighteenth century to the present. Pr., 402. Formerly 151. Gowen
- 424, 425, 426. **Architectural Design, Grade III.** (7, 7, 7) Pr., Arch. Design, Grade II. Formerly 154, 155, 156. Herrman, Gowen, Pries, Mithun
- 427, 428, 429. **Architectural Problems.** (3 to 7 each qtr.) Pr., Arch. 426. Formerly 160, 161, 162. Saff
- 430, 431, 432. **Contract Drawings.** (2, 4, 4) Lectures and drafting-room practice. Pr., Arch. Design, Grade II, Arch. 378. Formerly 120, 121, 122. Dietz
- 435, 436, 437. **Mechanical Equipment of Buildings.** (2, 2, 2) Analysis and methods of air conditioning, lighting, sanitation, etc. Formerly 126, 127, 128. Hauan
469. **Specifications and Contracts.** (3) Contract forms, office organization and methods, ethics. Pr., senior in architecture. Formerly 169. Waldron
480. **City Planning Practice.** (3) Principles, object, and scope. Planning techniques, development of comprehensive plan, analysis of plan components. Pr., 380 or permission. Formerly 180, 181, 182, 183. Wolfe
- 490, 491, 492, 493, 494. **City Planning Design.** (7, 7, 7, 7, 7) Multi-building, large-scale projects. Cities, neighborhoods, housing groups, shopping centers, recreation areas as part of the community pattern. Last quarter includes thesis. Pr., 325 or permission. Formerly 190, 191, 192, 193, 194. Wolfe

ART

Professors Isaacs, Foote, Hill; Associate Professors Benson, Bonifas, Johnson, Penington; Lecturers Leo, Del Giudice; Assistant Professors Curtis, DuPen; Instructors Alps, Anderson, Brazeau, Fuller, Hensley, Lowry, Mason, Patterson, Westphal; Acting Instructors Anderson, Heiberg, Tsutakawa; Associate Smith

The School of Art reserves the right to retain student work for temporary or permanent exhibition.

100. **Elementary Drawing and Design.** (5) Introductory studio course for the general student rather than the major in art. Formerly 1. Hensley
- 105, 106, 107. **Drawing.** (3, 3, 3) Perspective, light and shade, composition, pencil and charcoal. Formerly 5, 6, 7.
- 109, 110, 111. **Design.** (3, 3, 3) Art structure as the basis for creative work in advanced courses. Problems in organization of line, space, and color. Lectures, discussion, and supplementary reading. Formerly 9, 10, 11.
112. **History of Art Through the Renaissance.** (5) Not open to freshmen. Survey of the main developments in painting and sculpture from prehistoric times through the Renaissance; illustrated with slides and colored reproductions. Formerly 12. Johnson
- 115, 116. **Laboratory Drawing.** (3, 3) Exact representation of objects such as bones, shells, and plants. Three-dimensional form is stressed with pencil, pen and ink, carbon pencil, and colored crayon techniques used in science or other work requiring accuracy and detail. Formerly 15, 16. Curtis
151. **Figure Sketching.** (1) Sketching from the posed model. Pr., 3 credits in drawing. Formerly 51.
- 253, 254, 255. **Two- and Three-dimensional Design.** (3, 3, 3) Study of materials as a factor in design. Class experimentation and research. Formerly 53, 54, 55. Penington
- 256, 257, 258. **Painting.** (3, 3, 3) Oil and watercolor painting from still-life and casts, introduction to life and outdoor sketching, lectures and reading. Pr., 105, 106, 107. Formerly 56, 57, 58. Hill, Brazeau
262. **Essentials of Interior Design.** (2) Illustrated lectures. Formerly 62. Foote
- 265, 266, 267. **Drawing and Painting.** (3, 3, 3) Continuation of 256, 257, 258, for majors in painting; outdoor sketching in oil and watercolor. Formerly 65, 66, 67. Hill
- 272, 273, 274. **Sculpture.** (3, 3, 3) Fundamentals of composition in the round and in relief, creative work stressed. Pr., sophomore standing or permission. Formerly 72, 73, 74. DuPen
- 280, 281, 282. **Furniture Design.** (3, 3, 3) Design as it applies to furniture. Study of materials and construction. Working drawings, color-plates, and models executed. Art 283 to be taken with 280. Pr., 105, 106, 107, 109, 110, 111. Formerly 80, 81, 82. Foote
283. **History of Furniture and Interior Styles.** (2) Lectures illustrated with slides on appreciation and historical development of furniture and its architectural backgrounds from the Renaissance to the present time. Formerly 83. Foote
300. **Elementary Crafts.** (2) Problems in various media and processes adapted to secondary schools, service and recreation groups. Papier-maché, leather, weaving, etc. Open to nonmajors with sophomore standing. Required for those majoring in public school art. Formerly 100. Johnson
301. **Elementary Interior Design.** (2) Fundamental problems in interior design including floor and wall plans at scale, furnishings and color schemes. For the general student and those wishing to teach art in the public schools. No prerequisite. Formerly 101. Foote
302. **Bookmaking and Bookbinding.** (2) Pr., junior standing in art or permission. Formerly 102. Johnson

303. **Ceramic Art.** (3) Processes of pottery-making, coil and slab. Studies of profile and dimensions. Pr., junior standing in art or permission. Formerly 103. Bonifas
304. **Ceramic Art.** (3) Glazing and decoration. Contact with clay; glaze composition; packing and firing the kiln. Pr., 303. Formerly 104. Bonifas
305. **Lettering.** (3) Design in letters and the composition of letters. Pr., 107, 111, or permission. Formerly 105. Benson
- 307, 308, 309. **Portrait Painting.** (3, 3, 3) Pr., 256, 257, 258. Formerly 107, 108, 109. Isaacs
- 310, 311, 312. **Interior Design.** (5, 5, 5) Fundamentals of interior design. Includes scale drawings of floor and wall plans, perspective, study of color and texture. For the special student; general students by permission. Art 262 to be taken with 312. Pr., 105, 106, 107, 109, 110, 111. Formerly 110, 111, 112. Foote
- 316, 317, 318. **Design for Industry.** (3, 3, 3) Pr., junior standing in Ind. Design or permission. Formerly 116, 117, 118. Penington
320. **History of Modern Sculpture.** (2) Sculpture since the Renaissance; lectures and slides. Pr., sophomore standing. Not open to those who have had Art 20. Formerly 120. DuPen
- 322, 323, 324. **Sculpture.** (3, 3, 3) Pr., 272, 273, 274, or permission. Formerly 122, 123, 124. DuPen
326. **History of Painting Since the Renaissance.** (2) Lectures illustrated with slides and colored reproductions. Pr., sophomore standing. Formerly 126. Isaacs
329. **Appreciation of Design.** (2) Lectures on the fundamentals of design, illustrated by slides and by actual objects including paintings, pottery, textiles, etc. Reading and reference work. Formerly 129. Benson
330. **Advanced Ceramic Art.** (3) Design, glazing, decoration, throwing, and plaster mold. Pr., 304. Formerly 130. Bonifas
- 332, 333, 334. **Advanced Sculpture.** (3, 3, 3) Continuation of prerequisite courses. Pr., 322, 323, 324. Formerly 132, 133, 134. DuPen
340. **Design for Printed Fabrics.** (3) Hand-block and silk-screen printing. Study of mass production design. Pr., 253, 254, 255. Formerly 140. Penington
- 357, 358, 359. **Design in Metal.** (3, 3, 3) Design and construction of objects in copper, pewter, brass, silver, and gold. Various processes including etching, enameling, stone setting. Pr., junior standing in art or permission. Formerly 157, 158, 159. Penington
- 360, 361, 362. **Life.** (3, 3, 3) Drawing and painting from the model, anatomy. Pr., 256, 257, 258. Formerly 160, 161, 162. Isaacs, Staff
- 369, 370, 371. **Costume Design and Illustration.** (2, 2, 2) Pr., 106, 111. Formerly 169, 170, 171. Benson
- 375, 376, 377. **Advanced Painting.** (3, 3, 3) Pr., 256, 257, 258. Formerly 175, 176, 177. Hill, Staff
- 382, 383, 384. **Eastern Art.** (3, 3, 3) Survey of Eastern Art from the beginning to the present day. Illustrated. Not open to those who have had Asiatic Art. Formerly 182, 183, 184. Lee
- 413, 414, 415. **Oriental Ceramic Art.** (1, 1, 1) Chinese, Korean, Japanese ceramics from neolithic times to the present. Pr., senior standing. Formerly 113, 114, 115.
- 436, 437, 438. **Sculpture Composition.** (5, 5, 5) Imaginative design; problems met in professional practice. Pr., 332, 333, 334. Formerly 136, 137, 138. DuPen
450. **Illustration.** (5) Pr., senior standing in art, including life drawing. Formerly 150.
- 451, 452. **Printmaking.** (5, 5) Lithography, etching, serigraph, linoleum block, wood-cut, wood-engraving. Pr., senior standing in art or permission. Formerly 151, 152. Alps
- 453, 454, 455. **Advanced Ceramic Art.** (3, 3, 3) Plaster work, and throwing, firing, decoration, and glazing. Pr., 330. Formerly 153, 154, 155. Bonifas
- 463, 464, 465. **Composition.** (3, 3, 3) Development of individuality in painting through creative exercises. Pr., Life, 3 credits. Formerly 163, 164, 165. Isaacs
- 466, 467. **Commercial Design.** (5, 5) Composition in advertising art. Brief review of styles of advertising art; the idea and its expression in terms of design. Practice in using a variety of mediums, with special consideration for methods by which the work is to be reproduced. Pr., 305, 255. Formerly 166, 167. Benson
- 472, 473, 474. **Advanced Interior Design.** (5, 5, 5) Advanced problems related to contemporary needs. Research in period styles. For the special student. Pr., 312. Formerly 172, 173, 174. Foote
- 479, 480, 481. **Advanced Costume Design and Illustration.** (2, 2, 2) Pr., 369, 370, 371. Formerly 179, 180, 181. Benson
- 485, 486, 487. **Advanced Ceramic Art.** (5, 5, 5) Continued use of the processes with emphasis on design for industry. Pr., 453, 454, 455. Formerly 185, 186, 187. Bonifas
- 495, 496, 497. **Senior Seminar.** (1, 1, 1) Pr., senior standing in art. Required of all seniors. Formerly 195, 196, 197.
498. **Individual Projects.** (3 to 5, maximum 15) Formerly 198.

Courses for Graduates Only

- 507, 508, 509. **Advanced Portrait Painting.** (3, 3, 3) Formerly 207, 208, 209.
- 522, 523, 524. **Advanced Sculpture.** (3 or 5 each qtr.) Formerly 222, 223, 224.
550. **Advanced Illustration.** (3 or 5) Formerly 250.
- 551, 552. **Advanced Printmaking.** (3 or 5 each qtr.) Formerly 251, 252.
- 553, 554, 555. **Advanced Ceramic Art.** (3 or 5 each qtr.) Formerly 253, 254, 255.
- 560, 561, 562. **Advanced Life Painting.** (3 or 5 each qtr.) Formerly 260, 261, 262.
- 563, 564, 565. **Composition.** (3 to 5 each qtr.) Formerly 263, 264, 265.
600. **Nonthesis Research.** (*) Formerly 300.

ASTRONOMY

Associate Professor Jacobsen

201. Astronomy. (5) Star finding, solar system, sidereal universe. Formerly 1. Jacobsen
 401. Astrophysics and Stellar Astronomy. (3) Interpretation of stellar spectra; motions, types of stars. Pr., physics, calculus; pr. or concurrent, 201. Formerly 101. Jacobsen
 403. Spherical Astronomy. (3) Spherical triangles, celestial sphere, planetary motions. Pr., calculus; pr. or concurrent, 201. Formerly 103. Jacobsen
 404. Advanced Spherical Astronomy. (3) Aberration, parallax, precession, nutation, special subjects. Pr., 403, or permission. Formerly 104. Jacobsen
 405. Practical Astronomy. (4) Determination of latitude, longitude, time, azimuth. Sextant work. Pr., trigonometry; pr. or concurrent, 201; permission. Formerly 105. Jacobsen
 499. Undergraduate Research. (*, maximum total 15) Research on current or special astronomical problems. Formerly 199. Jacobsen

BACTERIOLOGY

(See Microbiology, page 287)

BOTANY

Professor Hitchcock; Associate Professors Blaser, Roman; Assistant Professor Stuntz;
 Instructors Dyar, Mublick, Walker, Kruckeberg

For those who expect to take no more than 5 credits of botany, courses 111 or 113 are recommended. For those who expect to take 10 credits of botany, courses 111 and 112; 111 and 113; 111, 201 or 202, and 331 are suggested.

Courses 111 and 114 are beginning courses partially covering the same material, therefore only one of these courses may be taken for full credit.

For Courses in Genetics, see Biology.

Biology

- 101J-102J. General Biology. (5-5) Principles of biology applying to all living forms, illustrated by representatives of major plant and animal groups and introducing man's place in nature. Recommended for teaching majors and for nonmajors in the biological sciences. Three lectures, one quiz, and three hours lab. Formerly 1J-2J. Staff
 351. Human Genetics. (3) Genetics of man for premedical students and others in anthropology, psychology, and related fields dealing with human variation. Pr., Bot. 111 or Zool. 111 or equivalent plus junior standing.
 401. Cytology. ((3) The cell in structure and function. Three lectures, four hours lab. Pr., permission. Formerly Zool. 101. Hsu
 401L. Cytology Lab. (3) Must be accompanied by 401. Hsu
 408 Cellular Physiology. (3) Functional aspects of protoplasmic structures. Three lectures. Not open to students who received credit for Zool. 108 or 115. Pr., Zool. 400 or permission. Whiteley
 408L. Cellular Physiology Lab. (2) Must be accompanied by 408. Six hours lab. Not open to students who received credit for Zool. 115L or 108L. Pr., permission.
 451. Introduction to Genetics. (3, lecture only; or 5) Pr., 10 credits in biological sciences. Formerly Bot. 108. Roman
 452. Cytogenetics. (3, lecture only; or 5) Chromosomal behavior in relation to genetics. Pr., 451, permission. Formerly Bot. 109. Roman
 453. Topics in Genetics. (2) Current problems and research methods in genetics. Pr., 451, organic chemistry, and permission. May be repeated for a maximum of 6 credits. Formerly Bot. 110. Roman
 472. Principles of Ecology. (3) Population biology including succession, competition, predation, symbiosis, sociality, relationship of community to environment. Pr., 10 hours upper-division zoology credit or permission. Formerly Zool. 172. Edmondson
 472L. Ecology Lab. (2) Pr., 472 concurrently. Formerly Zool. 172L. Edmondson
 473. Limnology. (5) Freshwater biology. Not open to students who received credit for Zool. 108 or 173. Three lectures, six hours lab, field work. Pr., Zool. 111, 112, one year college chemistry. Edmondson
 501. Advanced Cytology. (5) Formerly Zool. 201.

Botany

- 111, 112. Elementary Botany. (5, 5) 111: Structure, physiology, and reproduction of seed plants. No prerequisite. 112: Structure and relationships of the major plant groups. Pr., 111, one yr. high school botany, or Biol. 101J-102J. Formerly 1-2. Kruckeberg, Dyar, Walker, Blaser
 113. Elementary Botany. (5) Local flora. Training in the identification and recognition of our ferns and seed plants. No prerequisite. Formerly 3. Hitchcock
 114, 115, 116. Forestry Botany. (3, 3, 3) 114: Structure of seed plants; 115: Morphology of fungi and reproduction of seed plants; 116: Physiology of seed plants. Pr., Chem. 112. Formerly 17, 18, 19. Stuntz, Hitchcock, Dyar, Walker
 201. Plant Propagation. (2) Propagation by seeds, cuttings, grafts, etc. Formerly 24L. Mublick
 202. Garden Ornamentals. (2) Identification and culture of garden plants. Formerly 25L. Mublick

Upper-Division Courses

331. Ornamental Plants. (3) Identification and use of trees and shrubs. Pr., 113 or equivalent. Formerly 101. **Kruckeberg**
333. Range Plants. (3) Their recognition and economic importance. Pr., 113. Formerly 151. **Hitchcock**
341. Microtechnique. (5) Pr., 10 credits in biological sciences. Formerly 119.
361. Forest Pathology. (5) Common wood-destroying fungi and diseases of forest trees. Pr., 115 or equivalent. Formerly 111. **Stuntz**
371. Elementary Plant Physiology. (5) Designed for the general student. Pr., 111 and Chem. 112 or 116 or equivalent. Open for only 3 credits to those who have had Botany 116. Formerly 143. **Dyar, Walker**
- 431, 432. Taxonomy. (5, 5) The flowering plants. Pr., 113 or equivalent. Formerly 134, 135. **Hitchcock**
- 441, 442, 443. Morphology. (5, 5, 5) Pr., 112 or equivalent. 441 and 442: Vascular plants; 443: Algae and Bryophytes. Formerly 105, 106, 107. **Blaser**
444. Plant Anatomy. (5) Tissues; origin and development of the stele. Pr., 111. Formerly 129. **Blaser**
445. Algology. (6) Pr., 112 and 443. Offered at Friday Harbor only. Formerly 132.
461. Yeasts and Molds. (5) Their classification, recognition, cultivation, and relation to the industries and to man. Pr., 15 credits in botany, microbiology, or zoology. Formerly 115. **Stuntz**
- 462, 463. Mycology. (5, 5) 462: Structure and classification of basidiomycetes and ascomycetes. Pr., 111 and 112 or equivalent as determined by instructor. 463: Structure and classification of phycmycetes and fungi imperfecti. Pr., 111 and 112, or 462, or equivalent as determined by instructor. Formerly 140, 141. **Stuntz**
471. Mineral Nutrition. (5) The soil and culture solution as nutrient media for the growth of plants. Pr., 111 or 116, 10 credits in Chem. Formerly 150. **Walker**
472. Plant Physiology. (5) Pr., 111 or 116, and Chem. 232 and 242. Recommended for biology majors. Not open to those who have had 371. Formerly 144. **Dyar, Walker**
- 473, 474. Advanced Plant Physiology. (5, 5) 473: Metabolism of organic compounds; 474: Permeability, mineral nutrition, water relations, and growth. Pr., 472, or 371 and Chem. 232 and 242, and permission. Formerly 145, 146. **Dyar, Walker**
498. Special Problems in Botany. (1 to 15) Permission of instructor concerned. Formerly 199. **Staff**

Courses for Graduates Only

520. Seminar. (1) Formerly 200. **Staff**
521. Seminar in Plant Physiology. (1, maximum 5) Discussion of modern methods and trends in plant physiology. Pr., 474 and graduate standing. Formerly 221. **Walker**
561. Advanced Fungus Morphology. (5) Comparative morphology and reproduction of all the groups of fungi; phylogeny. Pr., 462, 463. Formerly 242.
571. Physiology of the Fungi. (3, lecture only, or 5) Nutrition and metabolism of fungi. Pr., 463 and 472 (or 371 and Chem. 232 and 242) and permission. Formerly 247. **Dyar, Stuntz**
572. Physiology of the Algae. (6, at Friday Harbor; 3 lectures only, or 5 at University). Pr., 472 or 371 and Chem. 232 and 242 and permission. Formerly 248. **Dyar, Walker**
600. Nonthesis Research. (*) Original investigations of special problems in genetics, morphology, mycology, taxonomy, or plant physiology. Formerly 300. **Staff**

COLLEGE OF BUSINESS ADMINISTRATION

Business Administration

Professors E. G. Brown, Engle, Cox, Demmery, Mackenzie; Associate Professors S. D. Brown, Wheeler; Assistant Professors Barnowe, Goldberg, Schrieber; Acting Assistant Professors Blackstone, Naylor, Richardson; Instructor Zoll; Lecturer Murphy; Associates Davenney, Pennock

101. Introduction to Business. (5) The nature of business problems; various types of ownership; physical factors involved in location of business; personnel aspects; marketing problems, devices and institutions; devices for long- and short-term financing; managerial controls such as accounting, statistics, and budgets; and the relation of business to government. Formerly 1. **Cox, Wheeler**
310. Business Correspondence. (5) Analysis of principles, including psychological factors; study of actual business letters in terms of their fundamentals. Pr., 101, Engl. 103. Formerly 115. **Murphy, Blackstone**
365. Industrial Relations for Engineers. (3) This is a summary course dealing with the principles and practices of the management of personnel in industry. Pr., 101 or equivalent, and junior standing. Should be taken with or preceded by Psych. 236. Formerly 166. **Barnowe, Zoll**
439. 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., Fin. 301, Mktg. 301, Prod. 301, B. Stat. 201. B.A. 439 or Econ. 422 are interchangeable and may be offered to meet business administration or economics requirements. No credit to students who have had E.B. 175, B.A. 175, or Econ. 122. Formerly 175. **Demmery, Wheeler, Naylor**

460. **Human Relations in Industry and Business.** (5) Through class discussion of actual cases, this course develops a useful way of thinking about and securing understanding of human situations in industry and business. Useful concepts and methods used in dealing with human situations are developed as aids in diagnosing as well as in taking action. Pr., junior standing. Formerly 165. **Barnowe, Zoll**
470. **Business Policy.** (5) Problems involved in policy formulation at upper levels of management, requiring the over-all integration of the various aspects of business. Pr., Fin. 301, Mktg. 301, Prod. 301. Formerly 163. **Schrieber**
- 495, 496. **Research in Business Fluctuations.** (3, 3) Pr., 439 and permission for 495; 495 for 496. Formerly 199B, 199C. **Demmery, Naylor, Wheeler**
- 560, 561. **Policy Determination and Administration.** (3, 3) Case study seminar. Determination of the over-all policies of a business enterprise. Administration of the policies to achieve the objectives of the organization. Pr., graduate standing and 470 or permission for 560; 560 for 561. **E. G. Brown**
562. **Responsibilities of Business Leadership.** (5) Problems faced by top business executives in their relationships with employees, stockholders, competitors, customers, government, and the public in matters of social responsibility. Pr., 561 or permission. **Goldberg**
570. **Business Reports.** (5) Analysis of assigned problems, cases and topics, and the preparation of a series of written reports thereon. Critical study of techniques of written presentation. Training in business analysis and research methodology. Pr., candidacy for graduate degree in business. **Staff**
571. **Business Studies.** (4) Independent study of a selected industry or form of business enterprise. Preparation of a term paper evaluating past and current developments and forecasting future trends. Pr., candidacy for graduate degree in business. **Staff**
590. **Seminar in Administration.** (5) A study of the administrative functions with emphasis upon organization, leadership, and control within the business unit. Pr., permission. Formerly 251. **Barnowe**
- 591, 592. **Seminar in Administrative Control.** (3, 3) Accounting and statistical controls such as budgets, standard costs, etc. Pr., Acctg. 330 for 591; 591 for 592. Formerly 255, 256. **Mackenzie**
593. **Seminar in Business Fluctuations.** (3) Business problems arising from business fluctuations. Analysis of business policies and methods contributing to instability; problems of measurement and adjustment to fluctuations. Appraisal of corrective measures internal and external to business. Pr., graduate standing, 439, and permission. **Demmery, Wheeler**
594. **Seminar in Business Forecasting.** (3) Problems in business forecasting. Appraisal of forecasting theory, techniques and commercial forecasting services. Preparation of forecasts. Pr., 593 and permission. **Demmery, Wheeler**
595. **Seminar in Business Research.** (5) Methodology and technique in business research. Pr., permission. Formerly 201. **Engle**
596. **Seminar in Administrative Organization.** (3) An analysis of organization theories, concepts, and principles, with typical problems arising in the application thereof to business enterprise. Pr., permission. Formerly 257. **Richardson**
598. **Current Problems in Business.** (5) Study of current business developments and problems of wide importance. Pr., permission. Formerly 215. **Staff**
604. **Nonthesis Research.** (*, maximum total 10) Pr., permission. Formerly 304. **Barnowe, Engle, Mackenzie, E. G. Brown**

Accounting

Professors Mackenzie, Cox, Gregory, Lorig; Professor Emeritus McConabey; Associate Professor Cannon; Assistant Professors Hanson, Roller, Walker; Lecturers Draper, Fordon, Hamack, Strong; Associate Kellogg

150. **Fundamentals of Accounting.** (3) Basic principles, financial statements, double entry principles, capital and revenue expenditures, depreciation, etc. Formerly 62. **Staff**
151. **Fundamentals of Accounting.** (3) Elements of manufacturing, partnership and corporation accounting. Pr., 150. Formerly 63. **Staff**
250. **Accounting Techniques.** (3) Special journals and ledgers, voucher register, payrolls, social security taxes. Accounting majors should take 250 rather than 255. Pr., 150. Formerly 62, 63. **Staff**
255. **Basic Accounting Analysis.** (3) Financial and cost analysis and interpretation. Pr., 150. **Staff**
305. **Office Management.** (5) Office organization; supervision of office functions; office personnel problems. Pr., Prod. 301. Formerly 119. **Hamack**
310. **Intermediate Accounting.** (5) Advanced theory on inventory valuation, depreciation, etc. Analysis of profit variations. Pr., 250 or 255. Formerly 110. **Staff**
320. **Income Tax I.** (3) Federal Revenue Acts and their application to tax returns. Pr., 310. Formerly 156. **Roller**
330. **Cost Accounting.** (5) Economics of cost accounting; industrial analysis; production control through costs; types of cost systems; burden application. Pr., 250 or 255. Formerly 154. **Gregory**
340. **Accounting Systems I.** (3) System design and installation with special emphasis upon internal check. Pr., 310. Formerly 153. **Hamack**
341. **Systems for Mass Production.** (2) Design of systems for accounting and statistical control to meet problems of mass production, involving use of tabulating equipment. Pr., 310. **Hamack**
360. **Advanced Accounting.** (5) Continuation of 310. Pr., 310. Formerly 111. **Staff**

370. Auditing I. (3) Auditing procedures and techniques, including practice set. Pr., 340, 360. Formerly 157. Cox, Cannon
371. Auditing Internship. (2) Report on one quarter's work with certified public accounting firm. Pr., 370. Formerly 159. Mackenzie
380. Government Accounting I. (3) Principles of fund accounting. Pr., 360. Formerly 152. Lorig
390. Consolidations and Mergers. (3) Consolidated balance sheets, statements of profit and loss, domestic and foreign branches. Pr., 360. Formerly 112. Staff
393. Fiduciary Accounting. (2) Estates, trusts, bankruptcies. Pr., 360. Formerly 112. Staff
420. Income Tax II. (3) Special problems in income tax, including fiduciaries, corporate reorganizations, appeals, estate and gift taxes. Pr., 320. Formerly 156. Roller
440. Accounting Systems II. (3) Practice problems and report writing for systems. Pr., 340. Formerly 153.
450. Comptrollership. (3) The comptroller's position in planning and control. Budgets, expense analysis, reports, and investigations for management. Pr., 310, 330. Mackenzie
470. Auditing II. (3) Releases of American Institute of Accountants, Securities and Exchange Commission and special problems and theory in professional auditing. Pr., 370. Formerly 157. Cannon
480. Government Accounting II. (2) Treasurer's accounts, financial reporting, etc. Pr., 370. Formerly 152. Lorig
490. C.P.A. Problems. (3) Selected problems taken from American Institute of Accountants and state C.P.A. examinations. Pr., 320, 330, 380, 390, 393. Formerly 158. Mackenzie
499. Undergraduate Research. (3, maximum total 9) Pr., permission. Formerly 195. Staff
- 590, 591, 592. Seminar in Accounting Theory. (3, 3, 3) Discussion and research in advanced and currently important topics in accounting theory. Pr., permission. Formerly 258, 259. Lorig
604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. Staff

Business Law

Associate Professor S. D. Brown; Assistant Professor Goldberg; Lecturers Botzner, Burrus, Espedal, Harlow, Juhl, Purdue, Robinson

201. Business Law. (5) Introduction to the study of law, its origin and development; formation and performance of contracts; fraud, mistake, duress and undue influence; rights of third parties and remedies available at law and equity; the law of agency as affecting the rights and duties of the principal, the agent, and third parties in their interrelationship. Pr., Engl. 103. Formerly 54. Brown, Goldberg, and Staff
202. Business Law. (5) Real and personal property, security transactions, sales, and negotiable instruments. Pr., 201. Formerly 55. Brown, Goldberg, and Staff
207. Business Law. (3) For engineering students or others unable to devote more than 3 credits to study of business law. May not be substituted for 201. Does not carry credit for students in business administration. Pr., sophomore standing and English requirement of respective college. Formerly 57. Burrus, Espedal, Juhl
410. Labor Legislation. (5) Consideration of legislative and judicial actions bearing directly on labor problems and the labor movement in their relation to social, political, and economic theories. Pr., junior standing, Econ. 340. Formerly 161. Goldberg
420. Law in Accounting Practice. (3) Business associations and bankruptcy. Pr., 202. Formerly 178. Brown, Goldberg

Business Statistics

Associate Professor Butterbaugh; Assistant Professor Hanson; Associate Gifford

201. Statistical Analysis. (5) Statistical methods and their application to practical economic and business problems. Pr., B.A. 101. Formerly 60. Butterbaugh, Gifford, Hanson
340. Advanced Statistical Analysis. (5) Analysis of problems and cases to develop ability in applying statistical techniques to practical problems in economics and business. Pr., 201. Formerly 170. Butterbaugh
341. Sampling. (3) The theory and practice of sampling as applied to commercial and industrial problems. Tests of reliability of measures and the significance of differences in results obtained in sampling. Introduction to the use of statistics in control of quality of incoming materials and manufactured products. Pr., 201. Formerly 171. Butterbaugh
342. Correlation. (3) The theory and practice of simple and multiple correlation techniques as applied to business problems. The use of graphic multiple correlation in commercial outlook forecasting; application of correlation techniques in managerial problems. Validity tests of correlation results. Pr., 201. Formerly 172. Butterbaugh
443. Statistical Problem. (3) An advanced course dealing with sampling theory; statistical quality control; techniques of forecasting through use of multiple correlation, time series analysis, and business index-numbers; and analysis of variations in statistical results. Pr., 340. Formerly 191. Butterbaugh
590. Seminar in Statistics. (5) Discussions and research in the application of statistical technique to the management function. Pr., Math. 105, 443. Formerly 270. Butterbaugh
604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. Butterbaugh

Finance

Professor Preston; Acting Associate Professor Trefftz; Assistant Professor Hanson; Instructors Blythe, Kolb; Lecturer Faragher; Associate Wright

201. Banking and Business. (5) Functions of money; principles of banking with special reference to the banking system of the United States; services of banks and other credit granting institutions in financing business; an introduction to the short-term financial problems of business enterprise. Pr., Acctg. 151, Econ. 200. Formerly 102. Staff
301. Corporation Finance. (5) General and specific principles and practices in the administration of capital of corporate enterprises. Pr., 201, Acctg. 250 or 255. Formerly 121.
334. Credit and Collections. (3) Credit as a factor in the production and distribution of commodities. Retail credit and mercantile credit. Commercial credit as the basis for bank credit. The organization and functions of the credit department. Sources of credit information; general credit agencies; special mercantile agencies, collection problems and collection tools, creditor's legal aids. Pr., 201. Formerly 124.
367. Foreign Exchange. (5) Principles of international exchange; financing imports and exports; foreign exchange markets; foreign banking by American institutions; current status of foreign exchange. Pr., 201. Formerly 127. Preston
420. Advanced Money and Banking. (5) A study of banks and the money market; the regulation of credit. Emphasis is given to the relation of the Federal Reserve System to commercial bank policy. Pr., 201. Formerly 120. Preston
425. Banking Policy and Administration. (5) An analysis of the functions and administration of commercial banks in serving the credit needs of business. Banking policies are considered from the standpoint of bank management and the public policies affecting banking. Pr., 201. Formerly 125. Preston
428. Bank Credit Administration. (3) Based upon selected cases of loans to Pacific Northwest industries and agriculture. Pr., 301, Acctg. 250 or 255. Formerly 126. Faragher
432. Agricultural Finance. (5) Principles of agricultural credit. Organization and operation of lending agencies, private and governmental. Analysis of production and mortgage loans by commercial banks to farmers. Evaluation of banking institutions serving agriculture. Pr., 201, Acctg. 250 or 255. Hanson
444. Principles of Investment. (5) General principles of selection and protection of security holdings. Pr., 301. Formerly 122.
446. Investment Analysis. (5) Analytical study of typical industrial, public utility, and railroad securities; current corporation reports and prospectuses as a basis of determining investment values. Pr., 444. Formerly 123.
590. Seminar in Banking Problems. (3) Intensive study and critical evaluation of selected problems of contemporary and permanent significance in the fields of domestic and international banking and finance. Pr., 420. Formerly 202B. Preston
- 592, 593. History of Financial Institutions. (3, 3) Individual research in the history of a selected financial institution. Examination of existing business histories primarily to develop knowledge, methods and objectives of writing business history. Pr., 420, permission. Formerly 225, 226. Preston
594. Seminar in Corporation Finance. (5) An analysis of current problems and developments in corporation finance developed through the use of cases; critical review of individual studies of financial problems of local interest made by members of the class. Pr., 301. Formerly 221.
- 596, 597. Seminar in Investments. (3, 3) The development and application of principles to be followed in the determination and supervision of institutional and individual investment programs; critical review of special studies made by members of the class. Pr., 444 or permission for 596; 596 for 597. Formerly 202A.
598. Management of Bank Assets. (3) This course deals with the management of bank assets; financial reports for fund control purposes; business retention and development. Pr., 420, permission.
604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. Staff

Foreign Trade

Acting Assistant Professor Henning

310. Foreign Trade Practices. (5) Foreign trade marketing; export and import fundamentals, practices, procedures, and instruments; foreign market analysis; world trade in its geographic, business, and political setting. Pr., Econ. 370. Formerly 181. Henning
450. Far Eastern Foreign Trade Problems. (5) Survey of Far Eastern trade; analysis of export and import problems and techniques; problems of investment in the Far East. Pr., 310. Henning
460. Problems in Foreign Trade. (5) Analysis of foreign trade problems from the point of view of management. Pr., 310, Fin. 367. Formerly 182. Henning
- 495, 496. Research in Foreign Trade. (3, 3) Individual and group study. Required business contacts. Compiling, organizing, and interpreting data from original and library sources. Pr., 310, Fin. 367 for 495; 495 for 496. Formerly 197B, C. Henning
590. Seminar in Foreign Trade. (5) Social and business implications of current problems in foreign trade. Pr., permission. Formerly 214. Henning
591. Seminar in Foreign Market Analysis. (3) Market analysis techniques applied to foreign trade; problems in foreign market analysis. Pr., permission. Formerly 213. Henning
604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. Staff

Insurance

Assistant Professor Bickley; Instructor Blythe

301. Risk and Insurance. (5) Nature of risk and uncertainty; evaluation of existing methods of dealing with business risks, with emphasis on the structure of the insurance mechanism and the important types of insurance coverage and ways of programming them to meet individual and business needs. Pr., B.A. 101. Formerly 108. Bickley, Blythe
302. Insurance Coverage for Business. (5) A study of life, fire, marine, and casualty insurance contracts; insurance companies and their organization. Course designed primarily for majors in accounting, real estate, and insurance. Pr., B.A. 101. Formerly 128. Bickley
303. Insurance Rate-Making and Programming. (5) Theory of probability, rate-making, and reserves; underwriting; service functions; inter-company cooperation; regulation and taxation; social insurance; programming. Pr., 301, 302. Formerly 129. Bickley
359. Estate Planning for Insurance. (3) Wills, trusts, and estates in connection with life insurance. Pr, 302 and B. Law 202. Formerly 187. S. D. Brown
453. Loss Prevention and Adjustment. (5) Problems involved and methods employed in ascertaining and controlling risk and loss; fundamentals of the adjustment, investigation, and administration of insurance claims. Pr., 301. Formerly 188. Bickley
473. Problems in Life Insurance. (3) Study of current problems in life insurance with outside topics assigned by analysis. Pr., permission. Formerly 198. Bickley
475. Problems in Fire Insurance. (3) Study of current problems in fire, marine, inland marine, and automobile insurance and surety bonding, with outside topics assigned for analysis. Pr., permission. Formerly 198. Bickley
477. Problems in Casualty Insurance. (3) Study of current problems in casualty insurance with outside topics assigned for analysis. Pr., permission. Formerly 198. Bickley
590. Seminar in Risk and Insurance. (5) Discussion and research on insurance and other methods of dealing with the problem of risk. Pr., permission. Formerly 208. Bickley
604. Noathesis Research. (*, maximum total 10) Pr., permission. Formerly 304. Staff

Marketing

Professors Burd, E. G. Brown, Miller; Associate Professor Wagner; Assistant Professor Stanton; Acting Assistant Professor Comish; Instructors Boyne, Klima, Still; Lecturer Goldblatt

301. Principles of Marketing. (5) Analytical survey of institutions, functions, problems, and policies involved in the distribution of goods from producer to consumer. Pricing, marketing costs, and governmental regulations. Pr., B.A. 101. Formerly 106. Staff
351. Principles of Salesmanship. (2) The psychological, economic, and marketing foundations of sales activities. The use of effective sales techniques. Pr., 301. Burd
361. Cooperative Marketing. (3) History, organization and methods of operation of both producer and consumer cooperatives. Pr., 301. Formerly 131. Burd
371. Wholesaling. (5) Principles and functions of wholesaling consumer, industrial, and agricultural goods. Emphasis on practical aspects of internal management of wholesaling business, warehousing, cost studies, and trade associations. Pr., 301. Boyne
381. Retailing. (5) Store location, layout, organization, policies, systems; principles of buying, stock control, pricing, inventory methods, personnel management, profit planning and control; coordination of store activities. Pr., 301. Formerly 133. Miller, Comish, Klima
391. Advertising. (5) Relation to demand, cost, price, consumer choice, marketing; who pays; research; organizations; techniques; social controls. Pr., 301. Formerly 134. Wagner
401. Sales Management. (5) Analysis of sales methods, policies, and costs from the point of view of management. Sales organization; management of the sales force—selection, training, compensation, and supervision; sales planning; sales and distribution policies. Sales problems of representative companies are analyzed. Pr., 301, and senior standing. Formerly 130. Stanton
421. Marketing Analysis. (5) Its uses, methods, and techniques. A class research project will provide practical application of methods studied. Pr., 391 and B. Stat. 201. Formerly 138. Wagner
431. Retail Merchandising Problems. (3) Technical operational problems, such as mark-up and mark-down, inventories, discounts and datings, purchase planning and open-to-buy, rate of stock turnover and stock-sales ratios, price lining and stock control, analysis of merchandising reports and statements. Pr., B.A. student and 381. Comish
441. Retail Sales Promotion. (3) The advertising department of a retail store. Effective use of newspapers, radio, television, direct mail, displays. Sales promotion; advertising programs, budgets, coordination of selling effort. Pr., 381, 391. E. G. Brown
451. Wholesale and Industrial Marketing Problems. (5) Analysis of wholesale and industrial marketing problems at the management level. Pr., B.A. student and 371. Formerly 139. Miller
461. Retail Management Problems. (5) Analysis of retail marketing problems from the point of view of management. Pr., 431. Formerly 135 Miller
471. Advertising Problems. (5) Analysis of advertising problems from the point of view of management. Pr., 391. Formerly 136. Goldblatt
481. Retail Field Work. (2, maximum total 8) Open to retail scholarship students only. Pr., permission. Formerly 137. Miller
- 495-496. Research in Marketing. (3-3) Individual and group study; required business contacts; compiling, organizing, and interpreting data from original and library sources. Each student will specialize in one of the following fields: (the letter, A, B, C, or D, should be used in registering) A. wholesaling; B. retailing; C. advertising; D. marketing research. Pr., 421, senior in marketing, and permission for 495; 495 for 496. Formerly 193. Staff

- 590, 591, 592. Seminar in Marketing. (3, 3, 3) Social, economic, and business implications of current problems in marketing. Pr., one marketing course and permission. Formerly 235. **Burd**
 604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. **Staff**

Personnel

Associate Professor Sutermeister; Lecturer Bergen

310. Personnel Management. (5) A survey of procedures used in obtaining and maintaining an efficient work force, with particular emphasis on the methods by which an effective personnel program can be initiated and carried out. Pr., junior standing. Formerly 167. **Sutermeister**
 345, 346. Personnel Management Techniques. (3, 3) Actual practice in use of tools of a personnel administrator, such as job analysis and description, interviewing, job evaluation, and merit rating. Pr., 310 for 345; 345 for 346. Formerly 173, 174. **Sutermeister**
 450. Industrial Relations Administration. (5) Negotiation and day-to-day administration of a labor contract. Analysis of typical clauses, including their interpretation and application. Pr., 310. Formerly 164. **Bergen**
 604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. **Staff**

Production

Assistant Professors Schrieber, Woodward; Acting Assistant Professor Richardson; Associates Gordon, Olson

301. Principles of Production. (5) Principles and procedures of a manufacturing enterprise: organization; product development; plant and equipment; and planning and control of materials, production, quality, wages, personnel, methods of analysis and budgeting. Pr., B.A. 101. Formerly 101. **Richardson, Woodward, Staff**
 351. Production Planning and Control. (5) Organization, procedures and techniques for the production planning and control functions in continuous and intermittent types of production. Pr., 301. Formerly 151. **Woodward**
 355. Industrial Procurement. (5) Study of principles involved in the purchasing function of a manufacturing business, including organization of purchasing department and its relation to other departments, and policies regarding quality, inventory control, negotiation with vendors, manufacturing vs. buying, prices and costs. Pr., 301, Mktg. 301. Formerly 162. **Schrieber**
 380. Field Work in Production. (2, maximum total 6) Part-time employment with pre-planned work programs, reports, and evaluation of experience. Pr., 301 and permission. Formerly 180. **Schrieber**
 460. Manufacturing Administration. (5) Operating problems of a manufacturing enterprise and the production decisions that must be made at various levels of management. Pr., 351, 355, M.E. 417. Formerly 150. **Schrieber**
 470. Industrial Analysis of the Pacific Northwest. (5) Production methods and problem analysis for manufacturing operations of selected industries in the Pacific Northwest. Pr., 301. **Schrieber**
 499. Undergraduate Research. (3, maximum total 9) Open only to qualified students for individual study or special project in production field involving compiling, organizing and interpreting data from original and reference sources. Pr., 301 and permission. Formerly 195. **Schrieber**
 590, 591. Seminar in Production. (3, 3) Study of advanced problems and policies in manufacturing management. The first seminar deals with operating decisions requiring frequent review and reevaluation. The second seminar covers long-term decisions such as plant location, buildings, etc. Pr., permission. **Schrieber**
 604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. **Staff**

Real Estate

Professor Demmery; Associate Professor Wheeler

301. Principles of Urban Real Estate. (5) Economic principles underlying the utilization of land; determining factors for the location and development of residential, commercial, industrial, and financial districts; public control. Pr., B.A. 101. Formerly 109. **Demmery, Wheeler**
 410. Real Estate Appraisals, Brokerage and Management. (5) Types of real estate uses and their characteristics; appraisals of farm and urban land and improvements; property rights, real estate finance; management of property; leases. Pr., 301. Formerly 169. **Demmery**
 495, 496. Research in Real Estate. (3, 3) Open to qualified undergraduates and graduate students. Pr., 301 and permission; 495 for 496. Formerly 199. **Demmery**
 590. Seminar in Real Estate. (3) Current problems in real estate appraisals, administration; management; financing and control of real estate. Pr., 301, permission. **Demmery**
 604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. **Demmery**

Secretarial Training

*Associate Professor Tidwell; Assistant Professor Blackstone; Lecturer Murphy;
Associates Abel, Alexander, Bussell, Dahl, Scherrer*

10. Typewriting. (0) Keyboard introduced; also letter writing, manuscript writing, tabulation, and composition at the machine. Formerly 12. Alexander
- 111, 112. Secretarial Training. (2, 2) Review of typewriting fundamentals, speed building, timed production of letters and tabulations, and the use of various business forms. High speed drills, office production typewriting including legal forms and stenographic short cuts; duplicating processes. Pr., 10 or equiv. for 111; 111 for 112. Formerly 13, 14. Blackstone, Bussell
115. Office Machines. (3) Laboratory instruction and practice in the operation of selected office machines, exclusive of secretarial machines. Formerly 19. Blackstone, Abel
- 120-121. Gregg Shorthand. (3-3) Theory of Gregg Shorthand. Students who present one or more units of shorthand as entrance credit may not receive credit for 120. Formerly 16-17. Dahl, Scherrer
122. Advanced Gregg Shorthand. (3) Speed building and introduction to transcription. Pr., 121. Murphy
- 130-131. Thomas Shorthand. (3-3) Theory of Thomas Shorthand. Students who present one or more units of shorthand as entrance credit may not receive credit for 130. Formerly 26-27.
132. Advanced Thomas Shorthand. (3) Speed building and the introduction to transcription. Pr., 131. Formerly 28.
- 310, 311. Advanced Secretarial Training. (5, 5) Advanced shorthand dictation and transcription. General office practice and procedures. Introduction to court reporting. Pr., 122 or 132 or equivalent for 310; 310 for 311. Formerly 116, 117. Tidwell
312. Court Reporting. (5) An advanced course for court reporting; study of courtroom procedures and legal terminology; laboratory practice provided in the practice court of the Law School. Pr., shorthand speed of 120 words per minute. Formerly 113. Tidwell
320. 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., 122 or 132. Formerly 118. Alexander

Transportation

Professor Farwell; Assistant Professor Brewer; Acting Assistant Williams

301. Principles of Transportation. (5) A general survey of the elements of rail, water, highway, and air transportation. Communications. Pr., B.A. 101. Formerly 104. Farwell, Brewer, Williams
311. Railroad Transportation. (5) A study of railway history, routes, rates, freight, passenger, and express services, and regulation. Pr., 301. Formerly 143. Brewer, Williams
313. Air Transportation. (5) The problems of commercial air lines, with particular reference to costs, operating methods, traffic promotion, safety requirements. Pr., 301. Formerly 146. Brewer, Williams
315. Highway Transportation. (5) Business methods and practices of common, contract, and private motor carriers in intra- and interstate operation; state and federal regulation of these carriers; highway freight rates. Pr., 301. Formerly 145. Brewer
317. Water Transportation. (5) Problems of ocean and inland water carriage relating to routes, rates, services, traffic, operation, and regulation. Pr., 301. Formerly 144. Farwell
440. Industrial Traffic Management. (5) A study of transportation buying. Problems in keeping tariff files, obtaining and quoting rates, routing, expediting, and tracing shipments, making claims, and auditing freight bills. For transportation majors only. Pr., transportation major or permission. Formerly 148. Brewer
450. Air Law and Regulation. (3) A study of national and international control of air transportation, with emphasis on sovereignty of the air, carrier liability, the International Civil Aviation Organization, and procedures and practices before the Civil Aeronautics Board. Pr., 313. Formerly 147. Brewer, Williams
452. Marine Insurance and Carriers' Risks. (5) A study of contracts of affreightment, marine insurance, general and particular average, salvage, limited liability, and marine collision law. Pr., 317. Formerly 149. Farwell
- 495, 496. Research in Transportation. (3, 3) Open only to qualified majors, who will be placed in part-time contact with transportation organizations. Pr., permission; 495 for 496. Formerly 194. Brewer, Farwell
590. Seminar in Transportation. (5) Research in and discussion of current transportation problems. Pr., permission. Formerly 204. Farwell
604. Nonthesis Research. (*, maximum total 10) Pr., permission. Formerly 304. Farwell

CHEMISTRY

(For Chemical Engineering, see page 247)

Professors Cross, Cady, Norris, Powell, Robinson, Tartar, Thompson; Associate Professors Linga-feller, Ritter, Sivertz; Assistant Professors Anderson, Crittenden, Dauben, Gregory, Hanahan, Krebs,† Kuethe,† Rabinovitch, Schubert, Simpson

Departmental advisers are available to recommend the courses best suited to the needs of individuals.

- 101, 102. General Chemistry. (5, 5) For students in home economics, nursing, forestry, and for others desiring only 10 credits in general chemistry. Formerly 3 and 5, 4 and 6.
- 105, 106, 107. General Chemistry. (3, 3, 3) Engineers only (except chemical engineers). Pr., high school chemistry. Formerly 24, 25, 26.
- 108, 109, 110. General Chemistry and Qualitative Analysis. (5, 5, 5) Three lectures, one quiz, two labs. General inorganic chemistry and qualitative analysis. Offered by College of Pharmacy for pharmacy students only. Formerly 8-9-10.
- 111, 112. General Chemistry. (5, 5) Open only to students without high school chemistry. For engineers, premedics, and science majors who may continue with Chemistry 113 or 107. (112 may follow 115 on departmental recommendation.) Formerly 1, 2.
113. Elementary Qualitative Analysis. (5) Pr., 112. Formerly 23.
115. General Chemistry. (5) For students who have had high school chemistry and who plan to take more than 10 hours of chemistry. Formerly 21.
116. General Chemistry and Qualitative Analysis. (5) Pr., 115. Formerly 22-23.
221. Quantitative Analysis. (5) Yoldmetric and gravimetric. Pr., 113 or 116. Formerly 111.
230. Organic Chemistry. (5) For majors in home economics and nursing and others desiring only one quarter of organic chemistry. Pr., 102 or 112. Formerly 137.
- 231, 232. Organic Chemistry. (3, 3) For those desiring only two quarters of organic chemistry. Pr., 112. Formerly 131, 132.
- 237, 238, 239. Organic Pharmaceutical Chemistry. (5, 5, 5) Three lectures, one quiz, one lab. The chemistry of the carbon compounds and their application to pharmacy. Pr., Chemistry 110. Offered by College of Pharmacy for pharmacy students only. Formerly 37, 38, 39.
241. Organic Chemistry Laboratory. (2) Preparation of representative compounds. Pr., 231 or concurrently. Formerly 128.
242. Organic Chemistry Laboratory. (2) Preparations and qualitative organic analysis. Pr., 241 and 232 (or 232 concurrently). Formerly 129.
321. Advanced Qualitative Analysis. (5) Pr., 113 or 116. Formerly 101.
322. Advanced Qualitative Analysis. (4) For chemical engineers. Pr., 113 or 116. Formerly 102.
323. Quantitative Analysis. (4) Gravimetric, for chemical engineers. Pr., 113 or 116. Formerly 107.
324. Quantitative Analysis. (4) Volumetric, for chemical engineers. Pr., 323. Formerly 108.
325. Quantitative Analysis. (5) Volumetric and gravimetric analysis, for chemistry and chemical engineering majors and other qualified students. Pr., 113 or 116. Formerly 109, 110.
326. Quantitative Analysis. (5) Gravimetric. Pr., 113 or 116. Formerly 109.
327. Quantitative Analysis. (5) Volumetric. Pr., 326. Formerly 110.
333. Intermediate Organic Chemistry. (3) Pr., 232. Formerly 133.
- 335, 336, 337. Organic Chemistry. (3, 3, 3) For chemistry and chemical engineering majors and other qualified students. Pr., 113 or 116. Formerly 131*, 132*, 133*.
345. Organic Chemistry Laboratory. (2) Organic syntheses. Pr., 335 or concurrently. Formerly 128*.
346. Organic Chemistry Laboratory. (2) Organic syntheses. Pr., 345 and 336 (or 336 concurrently). Formerly 130*.
351. Elementary Physical Chemistry. (4) Introductory lecture course. Pr., 221, college physics. Formerly 140.
352. Elementary Physical Chemistry. (4) Lectures and labs. Pr., 351. Formerly 141.
353. Chemical Thermodynamics. (4) Pr., 352, calculus or concurrently. Formerly 213.
- 355, 356, 357. Physical Chemistry. (3, 4, 3) For chemistry and chemical engineering majors and other qualified students. Pr., 113 or 116. Calculus and college physics (or concurrently by permission). Formerly 181, 182, 183 minus the labs.
- 358, 359. Physical Chemistry Laboratory. (3, 3) Pr., 325 and 357, or 355, 356, 357, concurrently as offered. Formerly 181, 182 labs.
360. Food Chemistry. (4) Pr., 221 and 232. Formerly 104.
361. Biological Chemistry. (5) For home economics students. Pr., 230. Formerly 144.
- 415, 416, 417. Advanced Inorganic Chemistry. (3, 3, 3) Systematic study based upon atomic, molecular and crystal structure, the nature of chemical bonds and the periodic table. Pr., 357 or permission. Formerly 223, 221, 222. Cady, Gregory, Ritter
- 421, 422. Oceanographic Chemistry. (3, 3) General physical and chemical properties of sea water and sea products. Pr., 221 and 232. Formerly 155, 156. Thompson
425. Quantitative Analysis. (3) Special analytical methods. Pr., 325, 337 and 357, or permission. Crittenden

† In the Division of Health Sciences.

‡ To be dropped after 1950-51.

426. Instrumental Analysis. (3) Introduction to electrical and optical methods of analysis. Pr., 325, 337 and 359, or permission. Crittenden
427. Advanced Quantitative Theory. (3) Theoretical principles of analytical chemistry. Pr., 325, 337, or permission. Formerly parts of 208, 209, 210. Crittenden
428. Chemical Microscopy. (3) Theory of the polarizing microscope and its application to chemistry. Pr., 426 or permission. Formerly 227. Robinson
429. Microquantitative Analysis. (3) Principles and techniques. Pr., 426 or permission. Formerly 226. Robinson
- 435, 436, 437. Advanced Organic Chemistry. (3, 3, 3) Consideration of synthetic methods, structure determinations and reaction mechanisms for acyclic, alicyclic, and aromatic compounds with emphasis on modern theory and practice. Pr., 337 and 445 or permission. Formerly 231, 232, 233. Dauben
445. Qualitative Organic Analysis. (3) Identification and characterization of simple organic compounds. Pr., 346 or permission. Formerly 134. Schubert
446. Advanced Organic Preparations. (3) Preparation, isolation, and purification of organic compounds requiring advanced techniques and specialized apparatus. Critical consideration of alternative synthetic methods. Pr., 445 or permission. Formerly 211. Staff
451. Advanced Physical Chemical Laboratory. (2 or 3) Pr., 359 or permission. Formerly 236. Staff
- 455, 456, 457. Advanced Physical Chemistry. (3, 3, 3) Elementary concepts of quantum chemistry, statistics, thermodynamics, kinetic theory, and chemical kinetics. The treatment of chemical systems in equilibrium and undergoing change. Pr., 357 or permission. Formerly 218, 201-202, 215. Cross, Gregory, Rabinovitch
458. Solutions and Colloids. (3) Thermodynamic consideration of solubility and theories of electrolytic solutions. Electrochemical methods, electrokinetic phenomena, colloids, and surface chemistry. Pr., 456 or permission. Formerly 203, 204. Gregory, Ritter
459. Molecular Structure. (3) Measurement and interpretation of molecular spectra (ultraviolet, visible, infrared, Raman), X-ray and electron diffraction, dipole moments, magnetic susceptibilities, etc. Pr., 357 or permission. Formerly 217. Lingafelter
- 465, 466. Biochemistry. (3, 3) Consideration of the physical and chemical aspects of enzyme and protein chemistry and an interpretation of the intermediary metabolism of proteins, amino acids, carbohydrates, lipides, and hormones. Pr., 242 and 342 or permission. Formerly 161, 162 minus the labs. Hanahan, Norris
467. Biochemistry Laboratory. (3) Physical aspects of biochemical reactions including enzyme catalysis, gas analysis, etc., and the study of intermediary metabolism. Pr., 466 or permission. Formerly 161, 162 labs. Hanahan
468. Advanced Biochemistry Laboratory. (3 to 5) Biochemical preparations and investigations of properties by special techniques including spectrophotometry, polarimetry, manometric methods, etc., Isotope tracer applications. Pr., 467 or permission. Formerly 163, 166. Hanahan
499. Undergraduate Research. (*, maximum total 9) For qualified seniors in the prescribed chemistry curriculum, especially for those planning to continue with graduate work. Pr., permission. Formerly 195. Staff

Courses for Graduates Only

515. Topics in Inorganic Chemistry. (3, maximum total 9) Discussion of developments of current research interest. Pr., permission. Staff
520. Departmental Seminar. (1-3, maximum total 9) Offered every quarter. Formerly 249. Staff
526. Advanced Instrumental Analysis. (3) Absorption and emission spectroscopy, polarography, potentiometry, and dielectric properties as applied to problems in analytical chemistry. Pr., 426 or permission. Formerly 225. Crittenden
527. Topics in Analytical Chemistry. (3, maximum total 9) Discussion of current developments in theory and practice. Pr., 427 or permission. Formerly parts of 208, 209, 210. Staff
528. Microqualitative Analysis. (3) Identification of ions by means of optical properties of their crystals. Pr., 428 or permission. Formerly 228. Robinson
- 535, 536. Chemistry of Natural Organic Compounds. (3, 3) Structure determination, synthesis and reactions of carbohydrates, fats, oils, terpenoids, steroids, aminoacids, alkaloids, heterocyclics, vitamins, and accessory dietary factors of natural origin. Chemotherapeutics. Pr., permission. Formerly 234, 235. Anderson
537. 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., 437 and 457 or permission. Formerly 237. Dauben, Schubert
538. Topics in Organic Chemistry. (3, maximum total 9) Discussion of developments of current research interest. Pr., permission. Staff
- 555, 556, 557. Quantum Chemistry. (3, 3, 3) Quantum theory of valence, unsaturation, quantum statistics, molecular dynamics, and related topics. Pr., permission. Simpson
558. Chemical Crystallography. (3) Crystal structure by diffraction of X-rays, electrons, neutrons. Crystal chemistry. Spectra of crystals. Theory of metals. Pr., 357 or permission. Lingafelter
559. Topics in Physical Chemistry. (3, maximum total 9) Discussion of developments of current research interest. Pr., permission. Staff
561. Chemistry of Nutrition. (3) A study of the nutritional experimentation and requirements. Energy, vitamins, minerals and trace elements required, and their function in the body. Pr., 466 or permission. Formerly 224. Norris

- 565, 566, 567. **Advanced Biochemistry.** (3, 3, 3) Consideration of special topics in biochemistry at an advanced level; proteins, enzymes, carbohydrates, simple and complex lipides, steroids, and hormones. Pr., 466 or permission. Formerly 264-265. Hanahan, Krebs, Kuether, Norris
591. **Seminar in Inorganic Chemistry.** (1-3, maximum total 9) Offered every quarter. Staff
592. **Seminar in Analytical Chemistry.** (1-3, maximum total 9) Offered every quarter. Staff
593. **Seminar in Organic Chemistry.** (1-3, maximum total 9) Offered every quarter. Staff
595. **Seminar in Physical Chemistry.** (1-3, maximum total 9) Offered every quarter. Staff
596. **Seminar in Biochemistry.** (1-3, maximum total 9) Offered every quarter. Staff
600. **Nonthesis Research.** (*) Formerly 300. Staff
- Thesis. (*)

CLASSICAL LANGUAGES AND LITERATURE

Associate Professor McDiarmid; Professors Densmore, Read; Instructor Rabinowitz

Greek

- 101-102, 103. **Elementary Greek.** (5-5, 5) Introduction to classical Greek with emphasis on the rapid development of the student's ability to read simple Attic prose. In the first two quarters the learning of forms and syntax will be accompanied by the reading of brief extracts from standard authors; the third quarter will be devoted to more extensive reading in one or more classical texts. Formerly 1-2, 3. McDiarmid
- 201-202. **Socrates.** (3) A study based on Plato's *Apology* and *Crito*; Xenophon's *Memorabilia*; Aristophanes' *Clouds*. Formerly 4, 5. Densmore
- 207, 208. **Grammar and Composition.** (2, 2) Systematic review of grammatical principles; exercises in prose composition. To be taken with 201-202. Formerly 8, 9. Staff
241. **New Testament Greek.** (3) Pr., 202. Formerly 7. Read
262. **Homer.** (3) Introduction to Greek poetry through reading selections from the *Iliad* or *Odyssey*. Pr., 202. Formerly 6. Densmore
309. **Advanced Grammar and Composition.** (3) Pr., 208. Formerly 140. Staff
322. **Herodotus and the Persian Wars.** (3) Formerly 101. Rabinowitz
323. **Thucydides and the Peloponnesian War.** (3) Formerly 102. Rabinowitz
- In 322 and 323 portions of the histories will be studied intensively and the rest will be read rapidly. These courses are designed to acquaint the student with the historical background of the Greek world in the fifth century B.C. The dialects and styles, as well as the historical methods and suppositions of the authors, will be considered.
330. **Attic Orators.** (3) Selections from the orations of Antiphon, Andocides, Lysias, Isocrates, and Isaeus. The stylistic principles of Greek oratory; orations as sources for political and social conditions of classical Greece. Rabinowitz
- †342. **Introduction to Greek Drama: Euripides.** (3) Formerly 103.
- †343. **Sophocles.** (3) Formerly 105.
- †344. **Aeschylus.** (3) Formerly 104.
- In 342, 343, 344 one play of each author will be studied in the original and several others will be read in translation; lectures and discussions on the history of the Greek theatre, the formal structure and styles of the plays, and the tragic concepts of the three playwrights.
360. **Lyric Poetry.** (3) A survey of the principal elegiac, iambic, melic, and epigrammatic poets from the seventh century B. C. to the Alexandrian period. Formerly 106. Densmore
361. **Hellenistic Poetry.** (3) Selections from Theocritus, Callimachus, Apollonius of Rhodes, and the Greek Anthology. Densmore
390. **Supervised Reading.** (3 to 5) Pr., permission. Formerly 100. Staff
- N391. **Sight Reading.** (No credit) Pr., 202 or permission. Formerly 51.
413. **The Pre-Socratic Philosophers.** (3) Formerly 201, 202, 203. McDiarmid
414. **Plato: The Phaedo.** (3) Formerly 151. Rabinowitz
415. **Aristotle: Selections from the Metaphysics.** (3) McDiarmid
- 416-417. **Plato: Republic.** (3-3) Formerly 152, 153. Rabinowitz
- 418-419. **Aristotle: Nicomachean Ethics.** (3-3) Rabinowitz
453. **Pindar: The Epinician Odes.** (3) Densmore
499. **Undergraduate Research.** (*, maximum 15) Staff

Courses for Graduates Only

- 540, 541, 542. **Literary Criticism: Aeschylus.** (3, 3, 3) Textual criticism. Aristotle and other ancient critics. Independent study of one play. Formerly 191, 192, 193. Densmore
600. **Nonthesis Research.** (3 to 5) Formerly 300. Staff

Latin

- 101-102, 103. **Elementary Latin.** (5-5, 5) This course is equivalent to two years of high school Latin. It is designed to enable the student to read classical Latin authors as quickly as possible. The third quarter is devoted to reading in one or more Latin texts. Formerly 1-2, 3. Rabinowitz
- 201, 202, 203. **Cicero and Ovid.** (5, 5, 5) Pr., two years high school Latin or Latin 103. Formerly 4, 5, 6. Staff

†Not offered 1950-51.

207. 208. Grammar and Composition. (2, 2) Systematic review of grammatical principles; exercises in prose composition. Pr., three years of high school Latin or permission. To be taken with 312 or equivalent. Formerly 8, 9. Staff
309. Advanced Grammar and Composition. (3) Pr., 208. Formerly 140. Read
312. Cicero: De Senectute. (3) Formerly 101. Densmore
- †313. Cicero: Tusculan Disputations. (3) Formerly 151.
Courses 312 and 313 are an introduction to the ethical doctrines of Cicero. The study of the texts will be accompanied by collateral reading and discussion on the relation of Cicero to earlier and contemporary Greek philosophy.
322. Livy. (3) Formerly 130. Rabinowitz
323. Sallust. (3) Formerly 104. Rabinowitz
324. Tacitus. (3) Formerly 132. Rabinowitz
In 322, 323, and 324 selections will be read to illustrate the styles and historical methods of the authors.
342. Plautus and Terence. (3) An introduction to Roman comedy. One play of each author will be read. The development and technique of comedy at Rome and its relation to Greek comedy will be considered. Formerly 133. McDiarmid
355. Catullus. (3) Formerly 102. Rabinowitz
356. Horace. (3) Formerly 131. McDiarmid
357. Vergil: Georgics and Bucolics. (3) Formerly 103. Densmore
358. Ovid. (3) Formerly 105. Densmore
In 355, 356, 357, and 358 particular emphasis will be placed on the study of the techniques and literary backgrounds of the poets.
390. Supervised Reading. (3 to 5) Pr., permission. Formerly 100.
401. Medieval Latin. (3) Pr., permission. Formerly 287. Read
- †412. Lucretius. (3) Reading of selected books with emphasis on philosophic content. Formerly 154. Read
413. Augustine: Confessions. (3) Formerly 153. Read
414. Seneca: Moral Essays. (3) Formerly 207. Read
422. Tacitus: Histories. (3) Formerly 204. Read
- †423. Suetonius: Augustus. (3) Formerly 214.
- †430. Latin Novel. (3) Formerly 211.
- †451. Juvenal. (3) Formerly 151.
499. Undergraduate Research. (*, maximum 15) Staff

Courses for Graduates Only

513. Cicero: De Natura Deorum. (3) Formerly 218. Read
600. Nonthesis Research. (3 to 5) Formerly 300. Staff

Classical Courses in English

A knowledge of Greek or Latin is not required for these courses

- 101-102. Latin and Greek in Current Use. (2-2) Primarily for students who have not had Latin and Greek. A study of the Latin and Greek derivatives in English, including literary words and phrases of classical origin and most Latin and Greek words used in technological and scientific terminology. Formerly 15-16. McDiarmid
- †250. Readings in Ancient Science. (3) Formerly 115.
- †260. Greek and Roman Art. (3) Formerly 17.
- 320, 321, 322. Greek Literature. (2, 2, 2) 320: Homer; 321: Lyric Poetry and Drama; 322: History and Philosophy. Formerly 12, 13, 14. Staff
330. Greek and Roman Mythology. (3) Formerly 18. Rabinowitz

DENTISTRY

Dental Materials

- 131-132. Dental Materials. (3-4) Formerly 101-102.

Dental Science and Literature

Professor Jones; Assistant Professor Anderson

100. Orientation. (1) Formerly 101.
200. Dental History. (1) Formerly 125.
- 300-301. Dental Medicine. (1-2) Formerly 150-151.
302. Technical Composition. (2) Formerly 153.

†Not offered 1950-51.

- 400-401-402. Applied Dental Science. (2-2-2) Formerly 175-176-177.
 403. Jurisprudence. (1) Formerly 181.
 431-432-433. Dental Ethics and Office Management. (2-1-1) Formerly 178-179-180.

Dentistry

- 500-501. Advanced Oral Histology and Embryology. (2-2) Formerly Perio. 200, 201.
 510. Applied Osteology and Myology of the Head and Neck. (2) Formerly Ortho. 200.
 511. Roentgenographic Cephalometry. (2) Formerly Ortho. 201.
 512, 513. Growth and Development. (2, 2) Formerly Ortho. 202, 203.
 521. Applied Dental Nutrition. (1) Formerly Pedo. 202.
 522. Dental Caries Control. (2) Formerly Pedo. 213.
 523. Public Health Dentistry. (1) Formerly Pedo. 200.
 530. Oral Pathology. (1) Formerly Oral Diagnosis and Treatment Planning 200.

Fixed Partial Dentures

Professor Baker; Clinical Professors Anderson, Hagen; Clinical Associate Professor Schultz; Clinical Assistant Professors German, Smith; Clinical Instructors Beebe, Gebrung, Gisswold, Gulbrie, Miska

- 231-232-233. Fixed Partial Denture Technic. (4-4-4) Formerly 125-126-127.
 234. Ceramics. (2) Formerly 128.
 300-301-302. Fixed Partial Dentures. (1-1-1) Formerly 150-151-152.
 346-347-348. Clinical Crown and Fixed Partial Dentures. (2-2-2) Formerly 153-154-155.
 400-401. Advanced Fixed Partial Dentures. (1-1) Formerly 175-176.
 446-447-448. Advanced Clinical Crowns and Fixed Partial Dentures. (2-2-2) Formerly 178-179-180.

Operative Dentistry

Professors Stibbs, Jones; Associate Professor Pratt; Assistant Professor Nelsen; Instructors Hamilton, Morrison, Sproule; Clinical Assistant Professors Smith, Strizek, Vandewall; Clinical Instructors Martin, Rose, Schnepfer

131. Elementary Operative Dentistry Technic. (2) Formerly 101.
 132-133-134. Oral Anatomy. (4-4-2) Formerly 103-104-105.
 231-232-233. Operative Dentistry Technic. (4-4-3) Formerly 125-126-127.
 261. Clinical Orientation. (2) Formerly 128.
 300-301-302. Operative Dentistry. (1-1-1) Formerly 150-151-152.
 346-347-348. Clinical Operative Dentistry. (2-2-2) Formerly 153-154-155.
 400-401-402. Advanced Operative Dentistry. (1-1-1) Formerly 175-176-177.
 446-447-448. Clinical Operative Dentistry. (2-2-2) Formerly 178-179-180.

Oral Diagnosis and Treatment Planning

Professor Cheyney; Assistant Professor Nelson; Instructor Jensen

- 216-217. Dental Radiography. (1-1) Formerly 126, 127.
 300-301. Oral Diagnosis and Treatment Planning. (1-1) Formerly 150-151.
 331. Oral Pathology. (4) Formerly 156.
 346-347-348. Clinical Oral Diagnosis and Treatment Planning. (1-1-1) Formerly 153-154-155.
 400-401-402. Advanced Oral Diagnosis and Treatment Planning. (1-1-1) Formerly 175-176-177.
 446-447-448. Advanced Clinical Oral Diagnosis and Treatment Planning. (1-1-1) Formerly 178-179-180.

Oral Surgery

Professor Wanamaker; Assistant Professor Johnson; Clinical Professors Mattes, Molt; Clinical Instructors Dore, Folsom, Francis, Jones

- 300-301-302. Exodontia. (1-1-1) Formerly 150-151-152.
 303. Anesthesia (General). (1) Formerly 157.
 346-347-348. Clinical Exodontia. (1-1-1) Formerly 153-154-155.
 400-401-402. Exodontia. (1-1-1) Formerly 175-176-177.
 446-447-448. Clinical Oral Surgery. (1-1-1) Formerly 178-179-180.

Orthodontics

Associate Professor Moore; Clinical Associate Professors Fraser, Lewis; Clinical Assistant Professors Bishop, McGovern; Instructor Riedel

300. Orthodontics. (1) Formerly 150.
 316. Orthodontic Technic. (2) Formerly 153.
 400-401. Advanced Orthodontics. (1-1) Formerly 175-176.

Courses for Graduates Only

- 500, 501, 502, 503, 504. Orthodontics Seminar. (2, 2, 2, 2, 2) Formerly 204, 205, 206, 207, 208.
 546, 547, 548, 549, 550. Clinical Orthodontics. (4, 5, 5, 5, 5) Formerly 209, 210, 211, 212, 213.

Pedodontics

Associate Professor Law; Clinical Instructors Bowler, Coleman, Faulkner, Fleege, Meyer, Phair, Smith

100. Public Health Dentistry. (1) Formerly 101.
 200, 201, 202. Preventive Dentistry. (1, 1, 1) Formerly 126, 127, 128.
 216. Pedodontic Technic. (2) Formerly 125.
 300-301. Pedodontics. (1-1) Formerly 150-151.
 346-347-348. Clinical Pedodontics. (1-1-1) Formerly 153-154-155.
 400. Pedodontics and Public Health Dentistry. (1) Formerly 175.
 446-447-448. Advanced Clinical Pedodontics. (1-1-1) Formerly 178-179-180.

Courses for Graduates Only

- 500, 501, 502, 503, 504. Pedodontics Seminar. (2, 2, 2, 2, 2) Formerly 203, 204, 205, 206, 207.
 546, 547, 548, 549, 550. Clinical Pedodontics. (2, 5, 5, 5, 5) Formerly 208, 209, 210, 211, 212.

Periodontology

Professor Thomas; Assistant Professors Gallagher, Ingle, Ogilvie; Clinical Instructors Starks, Winskill

- 100 Comparative Dental Anatomy. (1) Formerly 101.
 151. Oral Histology and Embryology. (4) Formerly 102.
 200. Introduction to Periodontology. (1) Formerly 125.
 231. Endodontia Technic. (2) Formerly 126.
 300-301. Periodontology. (1-1) Formerly 153-154.
 302. Endodontia. (1) Formerly 159.
 346-347-348. Clinical Periodontology. (1-1-1) Formerly 156-157-158.
 349-350-351. Clinical Endodontia. ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) Formerly 162-163-164.
 400-401. Advanced Periodontology. (1-1) Formerly 175-176.
 446-447-448. Advanced Clinical Periodontology. (1-1-1) Formerly 178-179-180.
 449-450-451. Advanced Clinical Endodontia. ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$) Formerly 186-187-188.

Prosthodontics

Professor Young; Senior Consultant Stansbery; Clinical Assistant Professor Anderson; Clinical Instructors Barnhart, Riley, Smith, Sondheim

131. Complete Denture Technic. (5) Formerly 101-102.
 231. Removable Partial Denture Technic. (7) Formerly 128.
 300-301-302. Complete Denture Prosthodontics. (1-1-1) Formerly 150-151-152.
 303-304. Removable Partial Denture Prosthodontics. (1-1) Formerly 153-154.
 346-347-348. Junior Clinical Prosthodontics. (3-3-2) Formerly 156-157-158.
 400-401. Advanced Complete Denture Prosthodontics. (1-1) Formerly 175-176.
 402. Advanced Removable Partial Denture Prosthodontics. (1) Formerly 178.
 446-447-448. Senior Clinical Prosthodontics. (2-2-1) Formerly 181-182-183.

DRAMA

Professor Hughes; Associate Professors Conway, Harrington; Instructors Gray, Carr, Davis, Haaga, Lounsbury; Associates Johnson, Prins; Theatre Assistants Bell, Rotter, Valentinetti, White

- 101, 102, 103. Introduction to the Theatre. (2, 2, 2) Significant aspects of the modern theatre. Formerly 1, 2, 3. Hughes
- 146, 147, 148. Theatre Speech. (3, 3, 3) Pr., 146 for 147; 147 for 148. Formerly 46, 47, 48. Gray, Carr, White
- 251, 252, 253. Acting. (3, 3, 3) Theory and practice. Includes pantomime, improvisation, and characterization. Pr., 146, 147, 148 for 251; 251 for 252; 252 for 253. Formerly 51, 52, 53. Harrington in Charge
- 307, 308, 309. Puppetry. (2, 2, 2) Design, construction, costuming, stringing, and manipulation of puppets. With permission of department, this course may be repeated for credit. Formerly 107, 108, 109. Valentinetti
403. Scene Construction. (3) Principles and actual construction of stage scenery and properties. Formerly 103. Lounsbury, Johnson
404. Scene Design. (3) Pr., 403. Formerly 104. Conway
405. Theatrical Costume Design and Construction. (3) Formerly 105. Rotter
406. Make-up. (3) Formerly 106. Conway, Davis
- 411, 412, 413. Playwriting. (3, 3, 3) Professional course. Pr., one quarter of English, 328, 329, 330, and permission. Formerly 111, 112, 113. Hughes
414. Stage Lighting. (3) Survey course, nontechnical in character. Formerly 114. Conway, Johnson
415. Advanced Stage Lighting. (3) Formerly 115.
- 417, 418, 419. Advanced Theatre Workshop. (2, 2, 2) Pr., one of: 403, 404, 405, 406, or 414 or 415, or permission. Formerly 117, 118, 119.
- 421, 422, 423. Advanced Acting. (3, 3, 3) May be repeated for credit by permission. Group acting. Styles in acting: tragedy, comedy; period, modern. Pr., 251, 252, 253. Formerly 121, 122, 123. Harrington
426. High School Play Production. (3) A methods course. Play selection, casting, rehearsal technique, problems of staging. Lectures, reading, and demonstrations. Not open to drama majors. Formerly 126. Gray and Harrington
- 427, 428, 429. 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. Formerly 127, 128, 129. Conway
- 434, 435, 436. Children's Theatre. (3, 3, 3) Theory and methods. Participation in productions. Emphasis on directing. Pr., 253. Formerly 134, 135, 136. Prins
- 437, 438, 439. Creative Dramatics With Children. (3, 3, 3) Practical training for those who work with children's groups. Emphasizes development of the whole child, intellectually, emotionally, physically, and socially, through story and impromptu dramatizations. Lectures, reading, and laboratory. Field observation. Formerly 137, 138, 139. Haaga and Staff
- 441, 442, 443. Radio Acting and Production. (2, 2, 2) Pr., two quarters of acting. Formerly 141, 142, 143. Bell
- 444, 445, 446. Radio Writing. (3, 3, 3) Pr., two quarters of advanced English composition or one quarter of playwriting. Formerly 144, 145, 146. Bell
- 451, 452, 453. Representative Plays. (3, 3, 3) Great playwrights of all important periods. Theories of the drama. Formerly 151, 152, 153. Hughes
- 481, 482, 483. Directing. (3, 3, 3) Pr., 251, 252, 253, 421 or 423, 422. Formerly 181, 182, 183. Harrington
497. Theatre Organization and Management. (2) Theatre personnel, box-office methods, advertising, production costs, royalties, executive policies. Pr., senior or graduate standing. Formerly 197. Hughes
499. Undergraduate Research. (1 to 5, maximum 15) Pr., permission. Formerly 199. Staff

Courses for Graduates Only

- 601, 602, 603. Research. (5, 5, 5) Pr., permission. Formerly 301, 302, 303. Hughes
- For other courses in Drama, see English 554, 570, 571, 572, 517, 518, 519.

ECONOMICS

Professors Huber, Hall, Hopkins, Mund; Professor Emeritus Skinner; Associate Professors Buechel, Haid; Assistant Professors Cartwright, Crutchfield, Gillingham, Glickfeld, McCaffree, Pettibone, Sheldon, Worcester; Acting Assistant Professor North

Lower-Division Courses

160. American Economic History. (5) The European background and the development of American economic institutions, with emphasis upon the impact of the industrialization upon the American economy from 1850 to the present time. Formerly 16.

Introductory Course Prerequisite to All Upper-Division Courses

200. **Introduction to Economics.** (5) Organization and operation of the American economy; consideration of contemporary economic problems of money, banking, labor, international trade, and employment; proposals for promoting social welfare. Open to freshmen. Prerequisite to all upper-division economics courses and Econ. 201. Formerly 10.
Buechel, Crutchfield, Glickfeld, Lampman, North, Worcester

Courses Primarily for Sophomores

201. **Principles of Economics.** (5) Operation of the American economy in determining prices, wages, production, distribution of income and wealth; problems of the world economy; alternative economic systems—communism, socialism, fascism, mixed economics. Pr., 200. Staff
211. **General Economics.** (3) Condensation of Econ. 200; primarily for students in Colleges of Engineering and Forestry. Open to other students by permission. Pr., sophomore standing. Formerly 66. Staff
212. **Current Economic Problems.** (5) An application of economic principles. Analysis of the nature, significance, and solutions of major economic problems, including employment, prosperity-depression cycles, pressure groups, international economic policies, etc. Pr., Econ. 200. Formerly 70. Staff

*Upper-Division Courses**I. Economic Theory*

301. **National Income Analysis.** (5) Analysis of the determinants of the aggregate level of employment, output, and income of an economy. Pr., Econ. 201. Formerly 102. Cartwright, Crutchfield
302. **Intermediate Economics.** (5) A study of the fundamental concepts and principles of economics. Markets, market price and the determination of price under monopolistic conditions. The relations of price and cost, income and its functional distribution in capitalistic society. Pr., Econ. 201. Formerly 100. Mund, Pettibone, Sheldon, Worcester
304. **Economics of Consumption.** (5) The position of the consumer in modern society. Market structure and consumer interests. Legislation and agencies affecting consumer interests including consumer cooperatives. Pr., Econ. 201. Formerly 105. Worcester
306. **Development of Economic Thought.** (5) The development of economic thought against the background of modern capitalism. Special attention will be given to the Mercantilists, the Physiocrats, Adam Smith, and the socialist critics of capitalism. Pr., Econ. 201. Formerly 106. Glickfeld, North
403. **Economics of the Firm.** (5) Analysis of the price and output behavior of the individual business firm, the allocation of resources under conditions of pure competition, imperfect competition, monopoly, and oligopoly. Pr., Econ. 301 and 302. Formerly 103. Worcester
407. **Neo-Classical Economics and Its Critics.** (5) A survey with special reference to the various American schools of thought. Pr., Econ. 301 and 302. Formerly 107. North

II. Money, Banking, and Cycles

320. **Money and Banking.** (5) Nature and functions of money; the banking system, other credit granting institutions, and the relationship of money and bank deposits to the economy. Pr., Econ. 200. Formerly 120. Crutchfield, Hald, Pettibone
421. **Money, Credit, and the Economy.** (5) Supply and use of money, bank deposits, and bank reserves. Relationship of Treasury, Federal Reserve, and commercial bank policies, and the value of money. Factors relating to the generation of money income flows. Pr., Econ. 301 and 320. Formerly 121. Crutchfield
422. **Economic Cycles.** (5) A study of the characteristics of prosperity-depression cycles. Analysis of leading cycle explanations and proposed cycle remedies; discussion of current problems. Pr., Econ. 301 and 320. Formerly 122. Hald
423. **Monetary, Banking, and Cycle Policies.** (5) A critical review of past and current proposals to stabilize the value of the dollar and mitigate economic fluctuations. Pr., Econ. 421 or 422. Formerly 123. Hald

III. Government Regulation, Public Utilities, and Transportation

330. **Government and Business.** (5) The development of public policy in the United States on the regulation of business activity. Federal anti-trust legislation and its judicial interpretation. Basing point and zone delivered pricing systems. The policy of preserving competition as a means of regulating private business. Pr., Econ. 200. Formerly 130. Mund
332. **Economics of Public Utilities I.** (5) Economic, legislative, and administrative problems in the regulation of public utility rates and service standards. The holding company and its control. Pr., Econ. 200. Formerly 132. Hall
336. **Economics of Transportation I.** (5) Domestic and international transport: economic principles and development; public policy and special problems. Pr., Econ. 200. Formerly 134. Sheldon
433. **Economics of Public Utilities II.** (5) Study of public utility costs, pricing policies, rates, plant utilization, and competition. Pr., Econ. 201 or 332. Formerly 133. Hall
437. **Economics of Transportation II.** (5) Advanced treatment of economic problems and trends in domestic and international transport, including effects on regional development. Pr., Econ. 201, and Econ. 336 or Trans. 301. Formerly 135. Sheldon

IV. Labor Economics

340. **Labor in the Economy.** (5) Employment, unemployment, wages, working conditions, trade unionism, collective bargaining, labor-management relations, and public policy. Pr., Econ. 200 or 211. Formerly 140. Buechel, McCaffree, Lampman
345. **Social Security.** (5) Problems arising from economic hazards confronting individuals including old age, unemployment, illness, and disability. Study of social institutions designed to meet these problems, with emphasis on their economic effects. Pr., Econ. 200. Formerly 145. Lampman
441. **Union-Management Relations.** (5) The various aspects of the collective-bargaining process, with special reference to their economic implications. Pr., Econ. 340. Econ. 201 recommended. Formerly 141. Gillingham, Hopkins
442. **American Labor History.** (5) Analysis in historical perspective of the American labor movement; its organizational structure, ideology, policies, and practices. Pr., Econ. 340. Formerly 143. Gillingham
443. **Advanced Labor Economics.** (5) Analysis of factors determining wage rates and employment levels in the firm, industry, and economy. Special emphasis placed upon the union in the labor market. Pr., Econ. 302, 340; Econ 301 recommended. Formerly 144. McCaffree
446. **Labor Problems Abroad.** (5) History and analysis of labor problems in foreign countries. Pr., Econ. 340. Formerly 146. Glickfeld

V. Public Finance and Taxation

350. **Public Finance and Taxation I.** (5) Principles of taxation, tax forms and practices, public expenditure, public credit, and public budgetary policy. Pr., Econ. 200. Formerly 150. Hall, Lampman
353. **Introduction to Public Finance.** (3) A survey of public finance and taxation designed especially for journalism majors. Pr., Econ. 200. Formerly 153. Hall, Lampman
451. **Public Finance and Taxation II.** (5) Study of the elements of fiscal policy, tax systems, incidence and effects of taxation, and management of the public credit. Pr., Econ. 301, 350. Formerly 151. Hall, Lampman

VI. Economic History

361. **Economic History of Europe.** (5) Origins of contemporary European economic institutions; emergence of capitalistic system; problems of nineteenth century European economic organization; international conflict and the growth of new systems and patterns of European economic organization. Pr., Econ. 200. Formerly 162. Glickfeld
362. **Development of American Commercial Capitalism.** (5) Analysis of the origins and significance of the American economic structure before the Civil War. Pr., Econ. 200. Formerly 160. Glickfeld, North
363. **Development of American Industrial Capitalism.** (5) Structural changes and trends in the American economy since the Civil War. Pr., Econ. 200. Formerly 161. Glickfeld, North

VII. International Trade

370. **Economic Principles of Foreign Trade.** (5) Role of trade in world economic development, standards of living, and stability. Principles of trade and foreign exchange. Analysis of tariffs and other commercial policies. International organizations dealing with trade, foreign exchange, and foreign investment. Pr., Econ. 200. Formerly 170. Pettibone, Sheldon
373. **Foreign Trade of Latin America.** (5) Problems of foreign trade, foreign exchange, and investments; programs for industrial development; role in the world economy. Pr., Econ. 370. Formerly 173.
471. **International Economic Problems.** (5) Analysis of the European Recovery Program. Problems involved in state trading, cartels, commodity agreements, and foreign investment. Industrialization of undeveloped areas. Examination of American economic foreign policy. Pr., Econ. 302 and 370. Formerly 171. Huber
472. **International Monetary Policies.** (5) Exchange rates and international payments. Examination of alternative policies, including international gold standard, exchange control, currency blocs, and multilateral clearing systems. Problems growing out of World War II. Evaluation of International Monetary Fund. Pr., Econ. 320 and 370. Formerly 172. Huber

VIII. Economic Statistics and Mathematical Economics

(No courses at present.)

IX. National Economies

390. **Comparative Economic Systems.** (5) The American, British, and Russian economic systems in practice. How these economic systems deal with the basic economic problems which face all societies. Some attention given to Marxian doctrine and to the general problems involved in economic planning. Pr., Econ. 200 and 15 additional credits in the social sciences. Formerly 190.
492. **Economic Problems of the Far East.** (5) Deals with Far Eastern countries exclusive of China. Problems of reconstruction, industrialization, commercial policies, exchange and finance, transportation, agriculture, labor, government, economic planning, national incomes and distribution.

- Pr., Econ. 200, and 15 additional credits in the social sciences and/or Far Eastern. Formerly Sheldon 192.
493. **Economic Problems of China.** (5) Problems of reconstruction, industrialization, commercial policies, exchange and finance, transportation, agriculture, labor, government, economic planning, national incomes and distribution. Pr., Econ. 200, and 15 additional credits in social science and/or Far Eastern. Formerly 193.

Independent Study

499. **Undergraduate Research.** (3, maximum 6) No credit given to graduate students. Pr., permission. Staff

Courses for Graduates Only

I. Economic Theory

Cartwright, Mund, North, Worcester

505. **Value and Distribution Theory.** (5) Systematic review of the theories of value, price, costs, and supply. The capital concept. Income and its functional distribution. Pr., Econ. 301 and 302, or permission. Formerly 200.
506. **Income and Employment Theory.** (5) A systematic review of the analyses of the theory of employment, output and income of the Keynesian and neo-Keynesian groups. Pr., Econ. 505 or permission. Formerly 201.
511. **Mathematical Relationships in Economic Theory.** (5) A study of mathematical analysis applied to economic problems. Consideration will be given to indifference curves, elasticity of demand, the description of economic equilibria, and problems relating to rates of change, time lags, and related phenomena. Pr., Econ. 403 and 506, or permission. Formerly 202.
512. **Advanced Theory of the Firm.** (5) The fundamental problems of profit maximization in all major types of market interdependence under both static and dynamic conditions. Pr., Econ. 403 and 505, or permission. Formerly 203.
513. **Capital and Distribution Theory.** (5) A review of current developments in the theories of wages, rent, profits, and capital and interest. Pr., Econ. 505 and 506, or permission. Formerly 204.
515. **History of Economic Thought.** (5) Pr., permission. Formerly 206.

II. Money, Banking, and Cycles

521. **Monetary Theory.** (5) A critical analysis of recent developments in money theory. Pr., permission. Formerly 220. Crutchfield
522. **Cycle Theory.** (5) A review of leading theories of economic cycles, with emphasis upon recent developments. Pr., permission. Formerly 221. Hall

III. Government Regulation, Public Utilities, and Transportation

530. **Public Control of Industry.** (5) Public policy in the United States on industrial combinations, pricing practices, and monopoly control. Recent issues in the public control of business. Pr., permission. Formerly 230. Mund
532. **Public Utilities.** (5) A critical consideration of recent developments in the study of public utilities. Special emphasis on electrical utilities and public power projects of the federal and local governments. Pr., permission. Formerly 232. Hall

IV. Labor Economics

541. **Theory of Trade Unionism.** (5) Pr., permission. Formerly 241. Gillingham
542. **Labor Economics.** (5) Pr., permission. Formerly 242. Hopkins

V. Public Finance and Taxation

550. **Public Finance.** (5) Study of the implemental aspects of fiscal policy as to income and employment; limitations of fiscal policy; review of current literature. Pr., permission. Formerly 250. Hall

VI. Economic History

VII. International Trade

571. **International Trade Theory.** (5) Theories of international trade, prices, and payments. Modern developments in theory of national income and international trade. Theory of international capital movements. Pr., permission. Formerly 270. Huber
572. **International Economic Policies.** (5) Problems of foreign trade and exchange controls, and international monetary policies. Pr., permission. Formerly 271.

VIII. Economic Statistics and Mathematical Economics

(No courses at present.)

IX. National Economies

(No courses at present.)

600. **Nonthesis Research.** (*) Pr., permission. Formerly 300.

Staff

EDUCATION

Professors Powers, Bolton, Cole, Corbally, Draper, Dvorak, Osburn, Stevens, Strayer, Williams; Associate Professors Jessup, Hayden; Assistant Professors Bailly, Barr, Boroughs, MacDonald; Instructor Batie

An all-University grade-point average of at least 2.2 is prerequisite to and required in all education courses leading to the Three-Year Certificate granted by the University of Washington.

74. Improvement of Reading. (0) Formerly N74A. Osburn
101. Education Orientation. (2) Required of all individuals obtaining teaching certificates through the University. An understanding of the program and the purposes of elementary and secondary education in the United States, a consideration of what teachers are like and what they do, the reasons for teacher education, and an appreciation of the obligations teachers are expected to assume. Problems associated with demand and supply of teachers, teacher rewards and tenure, and the organization, control, and support of public schools. Formerly 1. Strayer
209. Educational Psychology. (3) Psychological basis of education. Review of recent experimentation with applications. For students who wish to review educational psychology for advanced degree examinations as well as for beginners. Pr., 101, Psych. 100. Formerly 9. Williams
230. Washington State Manual. (2) For out-of-state applicants for teaching certificates from the State Department of Education and applicants for the University Three-Year Certificate. Formerly 30. Corbally
360. Principles of Education. (3) Students will work as individuals and as groups in studying and analyzing problems in the areas of: professionalization of teachers, foreign education programs, guidance and counseling, vocational education, extracurricular activities, and curriculum improvement. Pr., 101, 209, 370, 371-72, 375, 390. Formerly 60. Draper
370. Introduction to School Procedures. (5) Pr., 101, 209. A course designed for the purpose of acquainting the student with the fundamental techniques and methods of teaching. Practical considerations are stressed. Actual classroom teaching situations are observed on the elementary, junior and senior high school levels. Formerly 70. Boroughs
- 370E. Elementary School Methods. (5) A basic course in the principles, techniques, and methods of teaching in the elementary school. For students training for elementary certification. Pr., 101, 209. Formerly 70E. MacDonald
- 371-72. Cadet Teaching. (4-4) Pr., 101, 209, 230, 370, 375, 390, or approved equivalent, and all-University grade point of at least 2.2. Work is done in the public schools. A student must leave sufficient time free in either the morning or early afternoon so he can be assigned to two consecutive classes in the school. This means he may take an 8 or 11 o'clock class on campus in the morning if he does cadet teaching in the morning, or any morning class on campus if he does cadet teaching in the afternoon. Assignments are made in the office of the Director of Cadet Teaching the first day of each quarter. A fee of one dollar per credit is charged for the course. Formerly 71-72. Corbally, Boroughs, Powers
- 371E-72E. Cadet Teaching and Workshop in Teacher Improvement. (4-4) Pr., 101, 209, 230, 370E, 374, 376, 377A,B,C, 378A,B, 390. Formerly 71E-72E. Corbally
- 371N-72N. Cadet Teaching for Vocational Home Economics Majors Only. (4-4) Pr., as for 371-72. Education 230 must be taken the quarter immediately preceding or following 371N-72N. Work is done in selected vocational home economics departments near Seattle. The student's entire time for a period of five weeks is devoted to cadet teaching. Home Economics 348 and 495 are arranged in a block with 371N-72N to give a full schedule for the quarter. A fee of one dollar per credit is charged for the course. Formerly 71N-72N. Corbally
- 371P-72P. Cadet Teaching for Women Physical and Health Education Majors. (4-4) Pr., as for 371-72. Education 230 must be taken prior to 371P-72P. A fee of one dollar per credit is charged for the course. Formerly 71P-72P. Corbally
374. Fundamentals of Reading Instruction. (5) A basic course in the teaching of reading in the elementary school. For the beginning teacher. Pr., 101, 209, 370E. Formerly 74. MacDonald
376. Art in the Elementary School. (5) An understanding of the place of creative art in the school curriculum with emphasis on content, methods of presentation, and evaluation. Areas will include drawing, painting, design, and crafts. Lab experience, with some lectures, discussion, and reading. Pr., 101, 209, 370E. Formerly 76. Johnson
- 377A-B-C. Music for Elementary Teachers. (2-2-2) Pr., 101, 209, 370E. Formerly 77A-B-C. Roor
- 378A,B. Physical Education for the Elementary School. (3,3) Pr., 101, 209, 370E. Formerly 78A,B. Horne, Auernheimer
390. Measurement in Education. (3) Pr., 101, 209, 370. A study of measurement in today's schools; the construction of achievement tests; the principles and applications of tests and standardized tests and scales in classroom management, educational diagnosis, and remedial education. Formerly 90. Dvorak
401. Educational Psychology. (3) Theoretical principles and experimental backgrounds. Formerly 101. Powers, Barr
402. Child Study and Development. (3) Formerly 102.
404. Education of Exceptional Children. (5) Atypical children studied from the point of view of the classroom teacher. Formerly 104. Hayden
406. Character Education. (3) Experimental background of the modern effort toward character development. Formerly 106. Powers, Barr
408. Mental Hygiene for Teachers and Administrators. (3) A study of the mental hygiene of school children, teachers, and administrators, including genetic factors and the influence of various school situations upon the formation of adjustment patterns. Special problems of teachers and administrators will be emphasized. Formerly 105G. Barr

410. **Educational Sociology.** (3) A systematic view of the larger social factors and relationships underlying the school as an institution. Pivotal topics are: individual-group interaction; agencies of person-group interaction; and outcomes of individual-group interaction. Special emphasis is given to the relationship of the school to the community. Formerly 110. Jessup
415. **Principles of Safety Education.** (3) Consideration of the development, principles, and practical methods of implementing a school program of safety education. Formerly 115B. Corbally
417. **Adult Education.** (3) The purpose of this course is to present principles and methods and to offer suggestions for directing the continued educational growth for those whose intellectual curiosity, ambition, and desire for greater social service prompts them to seek ways and means for self-improvement. Formerly 117. Jessup
422. **Diagnosis in Education.** (5) For administrators and secondary teachers. Literature of educational diagnosis. Materials and devices for locating pupil difficulties; special references to scholastic progress in the language arts and mathematics; techniques and diagnosis as applied to emotional blockages and defects. Formerly 122. Osburn
423. **Learning Processes of Handicapped Children.** (5) Special problems presented by children who are exceptional because of physiological, psychological, and emotional handicaps. Special attention will be given to case studies relating to delinquent and maladjusted children from the standpoint of both diagnosis and treatment. For supervisors, administrators, and teachers. Formerly 123. Osburn
425. **Teaching Reading and Remedial Reading.** (5) A consideration based upon experimental evidence and practical classroom experience of the problems encountered in the teaching of reading and the correction of reading difficulties. Formerly 125. Osburn
430. **Public School Administration.** (3) Selection, organization, function, and duties of school boards; relation of the superintendent of schools to the board, principals, supervisors, teachers, and pupils; selection and assignment of personnel; interpretation of the school program to the public; formation of policies; administration of the instructional program; finance and business management; appraisal of the school system; leadership in democratizing school administration and in community life. For superintendents, principals, supervisors, and those who desire to qualify for these positions. Formerly 130. Strayer
431. **School Finance.** (3) Basic principles of public finance; development of school support; principles of school finance; school accounting forms and procedures; administration of the annual budget; interpreting finance facts to the public; desirable improvements in school finance practices. Formerly 131. Strayer
434. **High School Organization and Administration.** (3) General plans for secondary school organization and administration; types of junior and senior high schools; advantages and disadvantages of 8-4, 6-3-3, 6-6, 6-4-4, 7-5 plans; program making; pupil adjustment; principal and department heads; extension of the programs to include the thirteenth and fourteenth years. Formerly 134. Cole
438. **Supervision of Elementary School Subjects.** (5) Deals with the improvement of instruction in the elementary field. Planning the program, determining the objectives, appraising the product, studying the pupil and the teacher, improving the use of materials of instruction, creating a better teaching environment, and facilitating growth of pupils through better teaching in all subjects. Formerly 138. Jessup
- 445V. **Principles and Objectives of Vocational Education.** (3) Aims and objectives of vocational education; materials of instruction; standards of work; judging measurement of work. Formerly 145V. Bailly
447. **Principles of Guidance.** (3) An introduction to guidance. Role of guidance in present-day education, tools and techniques, organization and evaluation. For teachers and administrators. Formerly 147. Barr
448. **Improvement of Guidance Techniques.** (3) Designed for teachers, administrators, and counselors, with special emphasis on the improvement of existing methods and techniques, including anecdotal records, case study, sociometric studies in the classroom, home visitation, pupil questionnaire, individual and group counseling. Intended for individuals who do not plan to take Education 541-43 sequence. Formerly 148. Barr
461. **Elementary School Curriculum.** (5) A study of the child as a growing organism, developing personality, and as a learner. Describes the curriculum as the guiding life of the school. Discusses the developments of units, utilization of materials of instruction, social experiences, creative experiences, and evaluation of curriculum material. Formerly 161. Jessup
464. **Principles of Curriculum Improvement.** (3) An intensive study of the basic principles and procedures utilized in the development of curriculum materials. Current practices in the development of objectives and learning experiences in the public schools will be studied and evaluated. Individual projects. Formerly 164. Draper
467. **Techniques of Curriculum Improvement.** (3) An intensive study of the basic techniques utilized in the development of course of study and units of work. Special emphasis will be given to the major unit of work and the common learning units of work. Individual projects. Formerly 167. Draper
468. **Extracurricular Activities.** (3) Students will work on individual problems in the area of extracurricular activities. Emphasis will be given to the problem of evaluating pupil growth through participation in the extracurricular activities. Formerly 168. Draper
470. **Historical Backgrounds of Educational Methods.** (3) Readings from the educational classics from the Greeks to the present for the purpose of tracing their influence upon the development of educational theory and practice. Principal sources are Plato, Aristotle, Quintilian, Plutarch, Comenius, Vives, Montaigne, Locke, Milton, Rousseau, Pestalozzi, Herbart, Froebel, and Spencer. Formerly 170. Williams
- 475A. **Auditory and Visual Aids in Teaching.** (3) A study of the utilization of audio-visual equipment and materials for the improvement of instruction. Formerly 175A. Hayden

480. **History of Education.** (5) A social interpretation of the historic beginnings of education. Preliterate education, beginnings in Orient, Greece, Rome, Medieval period, Renaissance, and modern times. Shows the relationship of education to democracy, fascism, communism, and the newer concepts involving the world-wide spread of democracy and education. Formerly 180. Jessup
484. **Comparative Education.** (5) Deals with the school systems of England, Germany, France, Italy, and Russia. An interpretation in terms of the political philosophy of each country. Emerges with an indication of world trends in education. Formerly 184. Jessup
490. **Educational Statistics.** (5) Statistical methods applicable in educational administration and research; central tendency; variability; probability; sampling and reliability; experimental hypotheses; linear, curvilinear, bi-serial, partial and multiple correlation; regression; reliability; application of various statistical procedures to specific problems. Pr., 390. Formerly 190. Dvorak
491. **Advanced Educational Measurements.** (3) Pr., 390 and 490, or Psych. 301, or equivalent. The construction, scaling, evaluation, and limitations of educational tests and scales; the application of test and scale results in educational diagnosis, guidance, and administration. Formerly 191. Dvorak
499. **Undergraduate Research.** (2 to 5 each qtr.) Pr., consent of instructor. Indicate instructor and field by letter when registering. See 600. Formerly 199. Staff

Advanced Courses: Open to Graduates Only

501. **Advanced Educational Psychology.** (3) Pr., courses in general and educational psychology. Psychological principles of education. Summary of research results in application to school problems. Formerly 201. Powers, Barr
510. **Seminar in Educational Sociology.** (3) Application of sociological principles to school problems. Individual problems and investigations. For teachers, administrators, and those using educational sociology as a field for advanced degrees. Formerly 210. Jessup
531. **Seminar in Administration: Finance.** (5) Current problems in school finance; including costs, ability to support schools, and financial implications of educational principles. The relation of costs to efficiency; preparation of the budget, salary schedules, sources of school revenue, problems of state and local school support, state and local control of school funds; financing capital outlay, research, and public relations. Formerly 231. Strayer
533. **Seminar in Administration: School Buildings.** (3) School building surveys; sharing responsibility for the educational plant; types of school buildings and building materials; appraisal of existing school plants; heating and ventilating; acoustics; special areas; audio-visual illumination and color; preparation of floor plans on the basis of educational plans; building maintenance and school insurance; modernizing existing buildings; financing the school plant program. Formerly 233. Strayer
- 535, 536, 537. **Organization of Supervisory and Administrative Programs.** (5, 5, 5) General problems of school administration; types of school organizations; opportunities for the extension of the secondary school offering beyond the twelfth year; supervision of instruction and plans for professional improvement of the staff; pupil adjustment and suggestive subject programs. Formerly 235, 236, 237. Cole
- 541, 542, 543. **Individual Guidance and Counseling.** (3, 3, 3) How to secure and interpret information on pupils. Individual and group counseling. Educ. 543 emphasizes the organization of the guidance program. Pr., 447 or equivalent. Formerly 241, 242, 243. Barr
550. **College Problems.** (3) Higher education from the standpoint of the new instructor. History of administrative organization. Formerly 250. Williams
552. **Improvement of College Teaching.** (3) An analysis of types of teaching applicable to the college level with special reference to the lecture, assignment, use of the textbook, student's reports, quiz techniques, panel discussion, the use of visual aids, syllabi, and bibliographies. Formerly 252. Williams
- 560, 561. **Seminar in Secondary Education and Curriculum.** (3, 3) Students will do research in the areas of guidance, extracurricular activities, and curriculum. The core curriculum and general education will receive emphasis. Formerly 260, 261. Draper
- 570, 571. **Problems in Modern Methods.** (3, 3) A consideration of the nature of teaching and the problems involved in the underlying principles and practices of types of modern methodology with special reference to the experimental studies in the project, unit, socialized recitation, audio-visual aids, supervised study, lesson plans, the lecture, assignment, and the activity movement. Formerly 270, 271. Williams
- 587, 588, 589. **Seminar in Philosophy of Education.** (3, 3, 3) The nature and meaning of philosophy as it bears upon education in respect to educational objectives, methodology, curriculum, administration, from the points of view represented in idealism, realism, naturalism, and pragmatism. Formerly 287, 288, 289. Williams
591. **Methods of Educational Research.** (3) Required of advanced degree candidates. A study of devices and methods in conducting research. Designed to assist students in planning, organizing, and writing theses. Formerly 291. Hayden
600. **Nonthesis Research.** (*) Pr., 591 and consent of instructor and Director of Educational Research. Indicate field by letter and instructor when registering. Formerly 300. Staff
- A. Educational psychology
B. Educational sociology
C. Educational administration and supervision
D. Elementary education
E. Secondary education
F. Classroom techniques

- G. History and philosophy of education
and comparative education
- H. Higher education
- I. Curriculum
- J. Guidance and extracurricular
activities
- K. Remedial and special education
- L. Measurements

Thesis. (*) Advanced degree candidates in education working on theses must be registered for "thesis" unless specially exempted by the Dean of the College of Education. The normal allowance for a master's thesis is 9 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*. Sniff

Special Methods Courses in Secondary Subjects

- 375A. Art. (2) Pr., 101, 209, 370, senior standing; permission. Methods of teaching art in the secondary school. Formerly 75A. Johnson
- 375B. Botany. (2) Pr., 101, 209, 370, and 25 hours of Botany. Formerly 75B. Blaser
- 375C. Chemistry. (2) Pr., 101, 209, 370, and at least 20 credits of college chemistry of average "B" grade. Formerly 75C. Cady
- 375D. Civics. (2) Pr., 101, 209, 370. Formerly 75D. Hitchner
- 375E. Business Education: Bookkeeping and General Business. (5) Two credits count as education, 3 credits as business administration. Pr., 101, 209, 370, and 30 credits for a major in business education, including 10 credits in accounting. Formerly 75E. Blackstone
- 375F. Business Education: Typewriting, Shorthand, Transcription, and Business Communications. (5) Two credits count as education, 3 credits as business administration. Pr., 101, 209, 370, and B.A. 120-121, 122, and permission. Formerly 75F. Tidwell
- 375H. English. (5) Two credits count as education and 3 as English. Pr., 101, 209, 370. Formerly 75H. Emery
- 375J. Journalism. (3) Pr., 101, 209, 370; Journ. 200, 201. For teachers in high schools and junior colleges; editorial, advertising, circulation, and mechanical production of school publications. (No credit to those taking Journ. 375J.) Formerly 75G. Brier
- 375K. French. (2) Pr., 101, 209, 370; French 303 and 358, or concurrently. Examination and critical consideration of aims, problems, methods, and modern techniques and devices for teaching French. Formerly 75K. Simpson
- 375L. German. (2) Pr., 101, 209, 370; German 303 or permission. Formerly 75L.
- 375M. History. (5) Pr., 101, 209, 370. Two credits count as education and 3 as history. An exploration of the techniques and methods of history teaching employed on the junior and senior high school levels. Formerly 75M. Boroughs
- 375NA. Home Economics. (3) Two credits count as education and 1 as home economics. Vocational homemaking in Washington high schools, objectives, curricula, and teaching methods. Pr., 101, 209, 370; 25 credits in home economics. Formerly 75NA. McAdams
- 375NB. Methods of Teaching for Institution Administration Students. (5) Planning and organizing courses and procedures for teaching foods and nutrition; for nurses, interns, patients, and employees of hospitals or other institutions. Pr., junior standing, 25 credits in home economics. Formerly 75NB. McAdams
- 375O. Geography. (2) Pr., 101, 209, 370; permission. Formerly 75O. Tennant
- 375P. Latin. (2) Pr., 101, 209, 370; Latin—20 credits in courses numbered above 300. Formerly 75P.
- 375Q. Mathematics. (3) Pr., 101, 209, 370; Math. 309 or equivalent. Two credits count as education, 1 as mathematics. Emphasis upon a more critical understanding of subject-matter relationship of ninth-grade algebra with seventh-grade arithmetic. Formerly 75Q. Jerbert
- 375R. Senior High School Music. (2) Pr., 101, 209, 370; Music 326, 386. Music in the high school, with particular attention to instructional materials. Techniques for the small high school. Formerly 75R. Sorensen
- 375T. Far East. (2) Consideration of instruction about the Far East needed in the preparation of responsible American citizens; its place in the school curriculum; useful publications, audio-visual aids, other materials and special methods. Formerly 75T. Williston
- 375U. Physical Education for Men. (2) Pr., 101, 209, 370; P.E. 358, 361, 363. Formerly 75U. Reeves
- 375V. Health and Physical Education for Women. (2) Pr., 101, 209, 370; P.E. 453, 356, 362, 363, 364; current registration in Educ. 371P-72P. Formerly 75V. Fox
- 375W. Scandinavian. (2) Pr., 101, 209, 370; permission. Formerly 75W. Arestad, Johnson
- 375X. Speech. (3) Two credits count as education, 1 as speech. Pr., 101, 209, 370, and at least 20 hours of speech including Speech 352, or equivalent. Formerly 75X. Nelson
- 375Y. Spanish. (2) Pr., 101, 209, 370; Spanish 303 and 358, or concurrently. Examination and critical consideration of aims, problems, methods and modern techniques, and devices for teaching Spanish. Formerly 75Y. Simpson
- 375Z. Zoology. (2) Pr., 101, 209, 370; 20 credits in zoology. Formerly 75Z. Hatch

*Regular Courses Offered in Summer School—
Not Offered During Regular Year 1950-51*

- 433. Elementary School Organization and Administration. (2½) Formerly 133.
- 477. Teaching of Reading. (5) Formerly 177.
- 547. Seminar in Guidance. (5) Formerly 247.

Business Education

- 476A. Principles and Problems of Business Education. (3) Aims and objectives, history, trends, and issues of business education. Federal participation in vocational education; economic, occupational, and population trends and their implications; leaders in the field; research and problems. Formerly 176A. Tidwell
- 476B. Materials and Methods of Teaching Bookkeeping and General Business Subjects. (3) A study of techniques involved in teaching bookkeeping and general business subjects, the relationship to the curriculum, the standards to be achieved, the content and organization of the subject matter, tests and teaching materials, the trends now apparent in the field, motivational devices, and visual aids. Formerly 176B. Blackstone
- 476C. Field Work in Business Education: Research and Practice in Business and Industry. (4) Internship in business and industry for experienced Business Education teachers. A course which combines work experience, job analysis, and research with specific curriculum building programs. Limited enrollment. Pr., consent of instructor. Formerly 176C.
- 476D. Materials and Methods of Teaching Typewriting. (3) A study of the psychological and physiological factors in the methodology of typewriting; objectives and evaluation; and procedures for developing advanced and applied skills. Formerly 176D. Tidwell
- 476E. Materials and Methods of Teaching Office and Clerical Practice. (3) Objectives and content of office practice and general clerical practice courses. Various plans of organizing classes and methods of teaching specific machines and subject matter. The lab hours provide opportunity to become acquainted with new inventions in office machines. Formerly 176E.
- 476F. Materials and Methods of Teaching Thomas Shorthand and Transcription. (3) An accelerated course for experienced teachers. Complete theory of Thomas shorthand; teaching objectives, materials, standards, methods; and the psychology of skill learning. Formerly 176F.
- 476G. Materials and Methods of Teaching Gregg Shorthand and Transcription. (3) An advanced course for experienced teachers with emphasis on recent research and experimentation in teaching shorthand and transcription; the psychology of skill development; comparison of the various methods of teaching shorthand; evaluation of teaching materials; consideration of standards, objectives, and teaching techniques. Formerly 176G.
- 476H. Workshop in Current Problems of Distributive Education. (2½ to 5) Immediate problems in the field of distributive education; student employment, local, state, and national retailers' clubs, trends in adult training, and special problems of the new coordinator. Recommended for present and prospective coordinators. Formerly 176H.
- 476I. Problems of Distributive Education. (2½) For distributive education supervisors and teachers. Formerly 176I.
- 476K. Coordination of Distributive Education and Diversified Occupational Programs. (2½) For distributive education supervisors and teachers. Formerly 176K.

ENGINEERING

I. AERONAUTICAL ENGINEERING

Professors F. S. Eastman, F. K. Kirsten; Associate Professors V. M. Ganzer, H. C. Martin, R. M. Rosenberg, R. E. Street; Assistant Professors J. H. Dwinell, R. C. Weikel; Instructor R. G. Joppa

Permission must be obtained from the executive officer before registering for courses in aeronautical engineering.

- 200. Introduction to Aeronautics. (2) History, opportunities, specialization, sources of information, nomenclature. Pr., sophomore standing. Formerly 81.
- 300. Aerodynamics. (3) Air properties and their variations with altitude. The continuity and Bernoulli equations. Jets and body pressure distribution. Dimensional analysis and dynamic similarity. Aeronautical nomenclature. The stream function applied to simple problems. Aerodynamic characteristics of airfoils in a perfect and real fluid. Pr., C.E. 342, Phys. 217, 218, 219, and Math. 251. Formerly 101.
- 301. Aerodynamics. (3) Momentum and circulation theory of lift. Induced effects. Airplane efficiency factor. Spanwise lift distribution. Auxiliary lift devices. Pr., A.E. 300. Formerly 102.
- 302. Aerodynamics. (3) Aerothermodynamic relations. Viscosity and compressibility effects on bodies and in pipes. Laboratory facilities. Wind tunnel wall corrections. Parasite drag and power required by an airplane. Pr., A.E. 301, or concurrent with 301; M.E. 320. Formerly 114.
- 303. Aerodynamics. (3) Performance of propeller and jet-driven airplanes as affected by power plants and airplane configuration. Stability and control. Pr., A.E. 302. Formerly 103.
- 311. Airplane Design Loads. (2) The V-g diagram. Air load and dead weight shear, moment, and torsion. CAA requirements. Pr., A.E. 303. Formerly 112.
- 320. Aerodynamics Laboratory. (1) Tests of subsonic and supersonic operating characteristics of wind tunnels and ducts. Pr., A.E. 302. Formerly 120.
- 321. Aerodynamics Laboratory. (1) Pressure distribution, wake, and boundary layer tests of a two-dimensional airfoil. Three-dimensional tests involving complete model build-up. Pr., A.E. 303, 320. Formerly 105.

330. Aircraft Structural Analysis. (4) Analysis of statically determinate plane and space trusses; stresses and deflections of the general beam; introduction to simple monocoque and stressed skin structures. Pr., M.E. 340, M.E. 361. Formerly 171.
331. Aircraft Structural Analysis. (4) Analysis of statically indeterminate plane and space trusses; continuous beams, frames, and rings; complex monocoque and stressed-skin structures; introduction to buckling and instability problems. Pr., A.E. 330. Formerly 172.
340. Aircraft Structural Design. (4) Basic structural design criteria for aircraft; materials and allowable stresses; fundamentals of design of basic components of an airplane. Pr., A.E. 331; to be taken with A.E. 350. Formerly 174.
350. Aircraft Structural Testing. (1) Methods and techniques of aircraft structural testing; laboratory test of typical structural components of an airplane. Pr., to be taken with A.E. 340. Formerly 175.
360. Aircraft Engines. (3) Factors influencing performance and operating characteristics of reciprocating engines at altitude. Different types are considered, including jet engines. Cooling. Pr., M.E. 320. Formerly 100.
380. Aeronautical Engineering Measurements. (2) Problems of instrumentation in the aeronautical laboratory and in flight. Analysis, calibration problems, and use of standard and special aeronautical measuring equipment. Wind tunnel balance systems, strain gages, hot wire anemometer, flexure pivots, flight instruments, cathode-ray oscillograph. Pr., senior standing. Formerly 185.
385. Selected Subjects in Aeronautical Design. (2) Lectures and typical problems will be presented by men with engineering experience in the aeronautical industry. Pr., permission. Formerly 151.
- 390-1-2. Seminar. (0-0-1) Pr., senior standing. Formerly 188, 189, 190.
395. Special Projects. (2 to 5 each qtr.) Pr., senior standing. Formerly 199.
410. Aerodynamic Design. (4) Preliminary design of a modern airplane to satisfy given requirements of performance, stability, and control. Pr., A.E. 303. Formerly 111.
422. Aerodynamic Laboratory. (3) Tests in the 12-foot wind tunnel for determining performance, stability, and control characteristics of a typical two-engine airplane. Pr., A.E. 321. Formerly 106.
441. Advanced Structural Design. (3) Factors influencing structural design; structural design problems; basic design of major structural components of an airplane. Pr., A.E. 340.
461. Propulsion Components. (3) Theoretical and practical aspects of propellers, compressors, and turbines. Pr., A.E. 301. Formerly 141.
462. Propulsion. (3) Theory of operation and practical aspects of ram jets, pulse jets, turbo jets, and rockets. Pr., A.E. 302. Formerly 142.
470. Analytical Problems in Aeronautics. (3) An analytical approach to the solution of various engineering problems. Ordinary differential equations applied to aerodynamics, structures, dynamics. Pr., Math 414 or permission. Formerly 161.

Courses for Graduates Only

- 505, 506. Aerodynamics of Incompressible Fluids. (3, 3) Theory of perfect incompressible fluids. Euler's equations of motion; circulation and vorticity, potential flow, conformal transformations, theory of the two-dimensional airfoil; lifting line theory of the finite wing. Theory of viscous incompressible fluids. The Navier-Stokes equations, dimensional analysis, exact solutions, Prandtl's boundary layer theory, Karman's integral theorem, laminar and turbulent boundary layer over airfoils and bodies of revolution. Pr., A.E. 505 for 506. Formerly 201, 205.
- 508, 509. Aerodynamics of Compressible Fluids. (3, 3) Basic thermodynamics, equations of motion of a nonviscous compressible fluid, flows in one dimension, shock waves, subsonic compressible flows. The theory of characteristics and supersonic flows. Exact solutions, linearized flows over flat plates and delta wings, swept-back wings, bodies of revolution. Pr., A.E. 508 for 509. Formerly 202, 207.
- †512. Internal Aerodynamics. (3) Flow of incompressible and compressible fluids confined by boundaries external to the fluid, two-dimensional cascade theory, applications to wind tunnels, compressors and turbines. Pr., A.E. 505. Formerly 208.
- †513. Heat Transfer in Aeronautics. (3) The fundamental laws of heat transfer. The temperature, boundary layer, effects of high speed upon skin temperatures. Applications to rocket flight at high altitudes, heat exchangers in aircraft, and de-icing of airplane wings. Pr., A.E. 506 and Physics 250, or equivalent. Formerly 209.
516. Stability and Control. (3) Aerodynamics of control. The general problem of dynamic stability. The influence of aerodynamic parameters on flying characteristics. Formerly 203.
- †517. Advanced Aerodynamic Design. (3) Application of theoretical and experimental results to the aerodynamic design of the aircraft. Pr., A.E. 410. Formerly 206.
- †518. Rotary Wing Aircraft. (3) The aerodynamics and dynamics of rotary wing aircraft. Formerly 241.
- 520-1-2. Seminar. (0-0-1) Formerly 294-5-6.
- 530, 531, 532. Theory of Elastic Structures. (3, 3, 3) A basic course as preparation for advanced work in aircraft structures. The fundamental equations of elasticity. Solution of two- and three-dimensional problems. Equilibrium of membranes, plates, and shells. Elastic stability, variational methods. Selected nonlinear problems. Emphasis on basic physical principles and mathematical methods. Formerly 224, 225, 226.
- †533. Theory of Plasticity. (3) Behavior of inelastic structures. Significance of test methods and results; stress-strain relations; conditions for yielding. Plastic bending, torsion, and buckling. Creep. Pr., A.E. 530 or C.E. 572. Formerly 228.

†These courses may not be offered every year.

- †540. **Aircraft Structural Problems.** (3) Application of the methods of elasticity to aircraft structural problems. Original papers and reports used as source material. Unsolved problems of current interest considered and their difficulties discussed. Pr., A.E. 530 or C.E. 572. Formerly 221.
- †541. **Structural Stability Problems in Aircraft.** (3) Study of buckling problems occurring in airplane structural design. Calculation of critical loads for unstiffened and stiffened thin skin structures. Instability effects due to combined loads. Pr., A.E. 530 or C.E. 572. Formerly 222.
- †542. **Aircraft Structural Design.** (3) Design of aircraft structural units with particular reference to the optimum selection of stiffening sections, skin thicknesses, arrangement of parts, etc. Influence of yielding, stress concentrations, fatigue, and dynamic loading effects, taken into account. Pr., A.E. 441 and A.E. 530 or C.E. 572. Formerly 223.
- †545. **Experimental Stress Analysis.** (3) A survey of the experimental methods commonly used in investigating and testing aircraft structures. Lectures supplemented by study of current experimental research projects and facilities. Pr., A.E. 530 or C.E. 572. Formerly 227.
- 550, 551. **Dynamics of the Airplane.** (3, 3) The dynamics of the rigid airplane. General theory of particle motion in space, and the application to problems of airplane flight paths and airplane stability. The dynamics of the elastic airplane. General theory of systems of elastically connected particles, and the application to the dynamics of airplane components; dynamic loads on airplane structural components, gyroscopic propeller vibrations; special problems. Formerly 244, 245.
553. **Aircraft Vibrations.** (3) Short survey of elementary vibration theory. The vibrations of systems with many degrees of freedom, and of elastic bodies with special application to the airplane. Formerly 204.
- †556. **Aero-Elasticity.** (3) The aerodynamics of the elastic airplane. Theory of flutter and divergence phenomena. The influence of elasticity on airplane performance. Formerly 246.
- †557. **Nonlinear Problems in Airplane Dynamics.** (3) The application to aeronautics of nonlinear ordinary differential equations of motion, and the topology of their integral curves in the phase plane. Dynamical interpretation of singular points; existence of periodic solutions; questions of stability. Nonlinear resonance; frequency demultiplication; relaxation oscillations. Formerly 257.
- †560. **Theory of Rocket Flight.** (3) The mathematical theory of rocket flight. The equations of motion of the rocket during and after burning. Formerly 247.
- †561. **Servomechanisms and Automatic Control in Aeronautics.** (3) The principles, theory, stability and application of servo-mechanisms in aircraft. The design of servo-mechanisms. Formerly 248.
- 571, 572, 573. **Analysis in Aeronautics.** (3, 3, 3) Analytical processes for solving problems in the various fields of aeronautical engineering. Formerly 261, 262, 263.
599. **Special Projects.** (2 to 5 each qtr., maximum total 15) Formerly 299.
600. **Nonthesis Research.** (2 to 5) Formerly 300.
- Thesis

II. CHEMICAL ENGINEERING

*Professor Emeritus Benson; Professor Moulton; Associate Professor McCarthy;
Assistant Professors Gerald, West*

271. **Industrial Chemical Calculations.** (2) Application of the laws of chemistry to the solution of problems dealing with gases and gas-vapor mixtures, from the viewpoint of the chemical engineer, techniques of representation of chemical data. Two lectures. Pr., Chem. 107 or 113, Math. 153, or equivalents. Formerly 51. Gerald
272. **Industrial Chemical Calculations.** (2) Material and energy balances of industrial processes for preparation and combustion of gaseous, liquid, and solid fuels. Two lectures. Pr., 271. Formerly 52. Gerald
273. **Industrial Chemical Calculations.** (2) Material and energy balances of typical important chemical processes, crystallization, lime and cement manufacture, production of sulphuric acid and sulphur compounds. Two lectures. Pr., 272. Formerly 53. Gerald
- 371, 372. **Survey of Chemical Engineering.** (2, 2) Problems, methods, and objectives of the chemical engineer illustrated by the study of typical unit operations and cases of scaling up of lab research to commercial production. For nonmajors only. Pr., senior standing in chemistry or permission. Formerly 125, 126. Gerald
375. **Chemical Engineering Thermodynamics.** (3) Pressure-volume-temperature relationships, equations of a state, and thermodynamic laws and properties are discussed with reference to unit operations. Three lectures. Pr., Chem. 355 and 356 or equivalent. Formerly 174. Staff
470. **Unit Operations.** (3) A study of the fundamental unit operations of chemical engineering beginning with the film theory, fluid flow, flow meters, heat transfer, humidification, and drying. Three lectures. Pr., 273. Formerly 170. West
471. **Unit Operations.** (2 or 4) A continuation of Ch. E. 470 in which absorption and distillation are studied from the standpoints of equilibria, operating lines, rates, and size of equipment required. The lab covers the subject matter of Ch. E. 470. Two lectures and two lab periods. Pr., 470. Formerly 171. West
472. **Unit Operations.** (2 or 4) A continuation of Ch. E. 471, with a study of absorption, extraction, crushing and grinding, screening, and laws of settling. The lab covers primarily the subject matter of Ch. E. 471. Two lectures and two lab periods. Pr., 471. Formerly 172. West
473. **Unit Operations.** (2 or 4) A continuation of Ch. E. 472 with a study of evaporation and crystallization and with a comprehensive design problem. The lab covers the subject matter of Ch. E. 472 and 473. Two lectures and two lab periods. Pr., 472. Formerly 173. West
474. **Research in Electrochemistry.** (2 to 5, maximum 5) Pr., permission. Formerly 179. Staff
477. **Advanced Chemical Calculations.** (3) Mathematical study of chemical operations, use of calculus in typical engineering problems. Three lectures. Pr., Math. 251 or equivalent. Formerly 152. Gerald

† These courses may not be offered every year.

481. **Chemistry of Engineering Materials.** (3 or 5) Materials of construction, water conditioning and treatment, solid and gaseous fuels, destructive distillation of coal, industrial carbon, ceramics, cements, glasses, iron, and steel. Three lectures and two lab periods. Pr., Chem. 221 or equivalent. Formerly 121. Moulton
482. **Inorganic Chemical Industries.** (3 or 5) Development and control of inorganic unit processes, instrumentation, fertilizers, electrolytic industries, electrothermal industries, phosphorus industries, sulphur, sulphuric acid, and nitrogen industries. Three lectures and two lab periods. Pr., Chem. 221 or equivalent. Formerly 122. Moulton
483. **Organic Chemical Industries.** (3 or 5) Development and control of organic unit processes, paint industries, oils, fats, waxes, soaps and detergents, sugar and starch, fermentation industries, wood chemicals, pulp and paper, synthetic fibers, plastics, natural and synthetic rubbers, petroleum, and dye industries. Three lectures and two lab periods. Pr., Chem. 221 or equivalent. Formerly 123. Moulton
485. **Industrial Electrochemistry.** (3) Theoretical and applied electrochemistry, units and laws, overvoltage and polarization, analysis, oxidation and reduction, deposition, refining, metallurgy, and electrothermics. Three lectures. Pr., Chem. 356 or permission. Formerly 247. Moulton
498. **Chemical Engineering Thesis.** (1 to 5, maximum 5) An assigned problem in unit operations or applied chemistry is investigated first in the literature and then in the lab and the results are incorporated into a thesis. Formerly 176, 177, 178. Staff

Courses for Graduates Only

520. **Seminar.** (1 to 5) Offered as desired by various members of the staff. Formerly 249. Staff
570. **Advanced Unit Operations.** (3) Heat transfer and fluid flow, measurement of temperature and heat capacity, dimensional analysis, Fourier's law, steady and unsteady state heat conduction, radiant energy, energy transfer, fluid flow mechanisms, energy balances, Bernoulli's theorem, viscosity concepts, Poiseuille's and Fanning's equations, friction factors, convection heat transfer. Reynold's analogy, film coefficient correlations by use of Nusselt, Prandtl, Graetz, and Reynold's numbers, overall heat transfer coefficients, introductory design calculations. Three lectures. Pr., 471. Formerly 241. McCarthy
571. **Advanced Unit Operations.** (3) Diffusion theory, transfer of material between phases, design of absorption equipment, Kremser method, multicomponent systems, performance of absorption equipment, simultaneous absorption and chemical reaction, solvent extraction. Three lectures. Pr., 472. Formerly 242. Moulton
572. **Advanced Unit Operations.** (3) Advanced work in binary and multicomponent distillation, use of activity coefficients, enthalpy-concentration diagrams, plate-to-plate calculations, minimum reflux, estimation of theoretical plates, capacity, prediction of plate efficiencies, H.T.U. concept, azeotropic and extractive distillation, problems in batch distillation. Three lectures. Pr., 473. Formerly 243. West
575. **Advanced Chemical Engineering Thermodynamics.** (3) General equations for phase equilibrium are studied. Applications of thermodynamics to unit operations and to prediction of chemical equilibria are developed in some detail. Three lectures. Pr., Chem. 456 or equivalent. Formerly 240. McCarthy
- 580, 581, 582. **Advanced Unit Operations.** (3, 3, 3) Special problems in advanced unit operations. Three lectures. Pr., 570. Formerly 244, 245, 246. Staff
- 583, 584, 585. **Advanced Unit Processes.** (2, 2, 2) Study of selected chemical process industries. Two lectures. Pr., 483. Formerly 218, 219, 220. Staff
586. **Chemistry of High Polymers.** (2) Fundamentals of substances with high molecular weight, including study of valence consideration, molecular weight determination, polymerization and condensation reactions, cracking, fiber and film formation, glasses, and mechanical properties as related to chemical structure. One lecture and one lab period. Pr., Chem. 232, 356. Formerly 237. McCarthy
587. **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 silicones. Two lectures. Pr., Chem. 232, 356. Formerly 238. McCarthy
600. **Nonthesis Research.** (*) Maximum, 9 credits for master's degree; 45 credits for doctor's degree. Formerly 300. Staff
- Thesis

III. CIVIL ENGINEERING

Professors Van Horn, Farquharson, Harris, Hennes, Miller, Moritz, Sergev, Smith, Tyler, Wessman; Associate Professors Campbell, Chittenden, Hechtman, Rhodes; Assistant Professors Clanton, Collier, Ekse, Jarvis, Mason, Mittet, Meese, Sylvester; Instructors Chenoweth, Colcord, Glick, Horwood, Thompson; Associate Mylroie

256. **Forest Survey.** (8) The use of steel tape, compass, clinometer, level, transit, and plane table. Pack Forest. Formerly 56. Hoag
290. **Mechanics.** (4) Introduction to dynamics and statics. A condensed course for transfer students satisfying the requirements of G.E. 111 and 112. Pr. one year of college math; not a substitute for either 291 or 292. Formerly 90.
291. **Mechanics.** (3) Kinetics, kinematics, and applied dynamics. Pr., 290 or G.E. 112, Math. 151; preceded by or concurrent with Physics 297. Formerly 91. Staff
292. **Mechanics.** (3) Mechanics of materials. Theory, analysis, and design of machine and structural members. Pr., 291 or permission. Formerly 92. Staff
293. **Mechanics.** (3) Dynamics and mechanics of materials, continued. Pr., 291, 292. Formerly 93. Staff

312. **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. 121 or C.E. 256. Formerly 112. Chittenden, Colcord
313. **Location and Earthwork.** (3) Highway and railway grades, profiles, cross sections, earthwork quantities including shrinkage and swell, and application of the mass diagram to the problems of haul; legal description; estimates. Pr., G.E. 121 or C.E. 256. Formerly 113. Chittenden, Colcord
314. **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. 121. Formerly 114. Chittenden, Colcord
315. **Geodesy and Photogrammetry.** (3) Baseline measurement, triangulation, engineering astronomy, photogrammetry, and photo-interpretation. Pr., C.E. 256 or 314. Formerly 115. Chittenden, Colcord

Transportation Engineering

321. **Roads and Pavements.** (3) Road-building methods and materials. Pr., junior standing in engineering. Formerly 121. Ekse, Meese
403. **Principles of Regional Planning.** (3) Land use, development of natural resources, and land settlement. Pr., senior or graduate standing. Formerly 153. Tyler, Horwood
422. **Railway Engineering.** (3) Locomotive performance and train resistances, permanent way, economics of railway location, sidings and terminals. Pr., C.E. 313. Formerly 122. Ekse
423. **River and Harbor Engineering.** (3) Breakwaters, shore protection, channel protection, and channel regulation. Theory of water waves. Pr., C.E. 313, 342. Formerly 123. Meese
424. **Highway Design.** (3) Theories of rigid and flexible pavements; design of bituminous mixtures; intersections and roadway design; culverts. Two lectures and one lab period. Pr., 321. Formerly 124. Ekse
426. **Airfield Design.** (3) Runway layout, paving, lighting, and drainage of airfields. Pr., senior or graduate standing. Formerly 126. Ekse
428. **Highway Administration.** (3) Financing, planning, and operation of highways, traffic engineering. Pr., graduate standing or permission. Formerly 228. Heanes, Horwood

Hydraulic Engineering

342. **Hydraulics.** (5) Flow of water through pipes and orifices, over weirs, and in open channels; energy of jets with application to impulse wheels. Three lectures, 6 hours lab. Pr., 291. Formerly 142. Harris, Moritz, Campbell
343. **Hydraulic Engineering.** (5) Complete projects, hydrometric methods; design of gravity spillway, flume intakes, surge, economic design of pipe line. Pr., 342. Formerly 143. Van Horn, Moritz, Campbell
445. **Hydraulic Machinery.** (3) Development and theory of water wheels and turbine pumps; design of a reaction turbine; hydrostatic machinery and dredging equipment. Pr., 342. Formerly 145. Harris, Moritz
447. **Hydraulic Power.** (3) Investigation of power development; generation of power; penstocks and turbines; types of installation. Pr., 343 and/or 342; senior standing. Formerly 147. Harris, Campbell
448. **Reclamation.** (3) Drainage and irrigation engineering. Soil conservation. Pr., 343 and senior standing. Formerly 157. Van Horn

Sanitary Engineering

350. **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. 112 or equivalent. Two lectures, 4 hours lab. Formerly 150. Sylvester
455. **Water Supply Problems.** (3) Design, cost estimation, construction, operation, and maintenance of water supplies, distribution systems, and purification plants. Pr., 342, 350. Formerly 155. Tyler, Sylvester
458. **Sewerage and Sewage Treatment.** (3) Design, operation, and maintenance. Refuse collection and disposal. Pr., 142, 150. Formerly 158. Tyler, Sylvester
459. **Sanitary Designs.** (3) Sewers, sewage disposal, and water-purification plants. Pr., 455, 458. Formerly 154. Tyler

Engineering Materials

362. **Materials of Construction.** (3) Portland cement and concrete, concrete mixtures. Three hours lab. Pr., 92. Formerly 162. Mason
363. **Materials of Construction.** (3) Strength and physical characteristics of timber, steel, and structural aluminum alloys. Three hours lab. Pr., 292. Formerly 163. Smith, Mitter
466. **Soil Mechanics.** (3) Engineering properties of soils; bearing capacity and settlement of foundations. Two hours lab. Pr., senior standing in engineering. Formerly 166. Meese
467. **Earthwork Engineering.** (3) Design, construction, and analysis of earthwork. Two hours lab. Pr., 466. Formerly 167. Hennes
468. **Engineering Properties of Soils.** (3) Theory and procedures in soil testing and experimentation. Four hours lab. Pr., C.E. 466, senior or graduate standing. Formerly 168. Hennes, Meese

Structural Analysis and Design

371. **Structural Theory.** (3) Introduction to continuous structures. Reinforced concrete members and connections. Elastic-line methods. Pr., 293. Formerly 171. **Mittet, Clanton**
372. **Structural Theory.** (3) Stresses and deflections of beam and girder spans. Wood and steel members and connections. Combined stress members. Pr., 293. Formerly 172. **Jarvi, Mitter**
373. **Structural Theory.** (3) Stresses and deflections of trusses and simple frames. Influence lines. Moving loads. Strain-energy methods. Pr., 372. Formerly 173. **Jarvi, Mitter**
375. **Structural Design.** (3) Reinforced concrete retaining walls and buildings. Rigid frames. Pr., 372. Formerly 175. **Rhodes, Jarvi**
376. **Structural Design.** (3) Reinforced concrete, steel, and wood bridges. Girder and truss spans. Pr., 373, 375. Formerly 176. **Miller, Rhodes**
377. **Structural Design.** (3) Wood and steel frame buildings. Roof trusses. Pr., 376. Formerly 177. **Rhodes, Sergev**
485. **Applied Structural Analysis.** (3) Rigid frames and continuous structures. Statically indeterminate assemblies including space frames. Members of nonuniform section. Pr., 375, senior or graduate standing. Formerly 185. **Miller**

Special Senior and Graduate Courses

- †491. **Advanced Professional Design.** (2 to 5 each qtr.) Formerly 191.
509. **Engineering Relations.** (2) Methods of setting up engineering problems and investigations, written and oral presentation of professional ideas and analyses of current research and investigations, both professional and economic, in the student's major field. Pr., graduate standing. Formerly 209. **Staff**
520. **Seminar.** (2) Formerly 220.
523. **Port Development.** (4) Engineering design of port facilities, river and protective works. Study of tides, currents, wave action, layout of channels and anchorage basins, wharf and other water-front constructions. Pr., 342, senior or graduate standing. Formerly 233. **Hennes, Meese**
547. **Advanced Hydraulic Power.** (4) Investigation of power development, generation of power, penstocks and turbines, types of installation, and special problems in the hydraulic power field. Pr., 343, 345, and graduate standing. Formerly 247. **Harris, Campbell**
560. **Photoelasticity.** (3) Use of photoelectric apparatus with applications in the analyses of common engineering problems in two dimensions, modern photoelastic theory, materials and methods. Pr., graduate standing or permission. Formerly 260. **Sergev**
567. **Advanced Soil Mechanics and Foundations.** (4) Design, construction, and analysis of earth-work. Stress in earth masses; dam foundations; landslide control. Pr., 466 and graduate standing. Formerly 267. **Hennes**
569. **Applied Soil Mechanics.** (3) Soil mechanics in engineering practice; the application of theory to the analysis of footings, piling, retaining walls, tunnels, and other substructures. Pr., C.E. 467, senior or graduate standing. Formerly 268. **Hennes, Meese**
571. **Advanced Strength of Materials.** (3) The solution of more complicated problems in strength of materials, with particular emphasis on the technique of breaking down the problems to fundamentals and solving the resultant mathematical expressions. Formerly 223. **Sergev**
572. **Theory of Elasticity.** (3) The application of more refined methods to beams, disks, curved bars, thick cylinders, and torsion prismatic solids. Study of stress concentration, strain energy, and virtual work. Formerly 221. **Sergev**
573. **Elastic Stability.** (3) The study of buckling phenomenon in columns, beams, plates, and tubes, with practical applications. Formerly 225. **Sergev**
581. **Advanced Structures.** (3) Hinged arches and continuous trusses. Graduates in civil engineering or permission. Formerly 281. **Miller**
582. **Advanced Structures.** (3) Hingeless arches and members of nonuniform section. Graduates in civil engineering or permission. Formerly 282. **Miller**
583. **Advanced Structures.** (3) Multi-story and nonrectangular rigid frames. Graduates in civil engineering or permission. Formerly 283. **Miller**
- †595. **Advanced Professional Design.** (2 to 5) H, M, S, W, or T. Special studies by graduates under direction of members of staff. Maximum credits in any one field, 15. Formerly 295.
- †600. **Nonthesis Research.** (*) H, M, S, W, or T. Special investigations by graduate students under the direction of members of the staff. Formerly 300.
- Thesis.** (Maximum total 9)

IV. ELECTRICAL ENGINEERING

Professors A. V. Eastman, Hoard, Lindblom, Loew, Shuck, G. S. Smith; Associate Professors Cochran, A. E. Harrison, W. R. Hill, L. J. Lewis; Assistant Professors Bergseth, V. L. Palmer, W. E. Rogers, Rustebakke; Instructors A. B. Jacobsen, Robbins, Stout, Swann, Tanner; Associates Blati, Lee, Loomis

220. **Direct-Current Circuits.** (5) Three hours lecture and recitation, four hours problems and laboratory demonstration. Beginning course for E.E. majors on direct-current circuit theory, including Ohm's Law, Kirchhoff's Laws, Thevenin's Theorem, Superposition Theorem, effects of temperature, inductance, capacitance. Pr., Math. 153, G.E. 111 or C.E. 290. Formerly 71.

†Hydraulics (H), Materials (M), Structural (S), Sanitary (W), and Transportation (T).

221. Direct-Current Measurements. (2) Four hours lab and class instruction. Methods of measuring potential, current, resistance, flux, inductance, and capacitance. Pr., E.E. 220. Formerly 72.
225. Direct-Current Machinery. (6) Two hours lecture and recitation, eight hours lab and quiz. Construction, operation, and characteristics of direct-current machinery, including shunt, series, and compound motors and generators. Pr., E.E. 221. Formerly 75.
300. Direct Currents. (5) Three hours lecture and recitation, two hours problems, and three hours lab. Short course in direct-current circuits and machinery for those who are not electrical engineering students. Pr., Physics 218, Math. 153, G.E. 111 or C.E. 290. Formerly 101.
301. Alternating Currents. (5) Three hours lecture and recitation, two hours problems, and three hours lab. Short course in alternating-current circuits and machinery for those who are not electrical engineering students. Pr., 300. Formerly 121.
320. Alternating-Current Circuits. (5) Three hours lecture and recitation, two hours problems, four hours lab on alternate weeks. Theory of single-phase and three-phase circuits including vector notation. Pr., 221. Formerly 159.
340. Alternating-Current Machinery. (4) Two hours lecture and recitation, four hours problems. Theory of transformers, induction motors, alternators, synchronous motors, single-phase motors. To be taken with 341. Pr., 225 and 320. Formerly 161.
341. Alternating-Current Machinery Laboratory. (4) Eight hours lab. Experimental work with alternating-current machinery. To be taken with 340. Formerly 162.
360. Alternating-Current Machinery. (4) Three hours lecture and recitation, two hours problems. A condensation of E.E. 340 and 450 for communication majors covering the theory of transformers, induction motors, alternators, synchronous motors, dielectric phenomena, and other power problems. To be taken with E.E. 361. Pr., E.E. 225 and 320. Formerly 169.
361. Alternating-Current Machinery Laboratory. (4) Eight hours lab. Experimental work with alternating-current machinery. To be taken with E.E. 360. Formerly 170.
400. 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., 301. Formerly 125.
420. Vacuum Tubes and Electronics. (6) Three hours lecture and recitation, two hours problems, four hours lab. Fundamentals of vacuum tubes; theory of rectifiers and amplifiers; photoelectric cells; thyatrons; applications to power and communication fields. Pr., 320. Formerly 181.
425. Electric Transients. (4) Two hours lecture and recitation, two hours problems, four hours lab on alternate weeks. Single and double energy transients in R, L, and C circuits; with either direct or alternating applied emf's; magnetically coupled circuits and circuits with variable parameters. Pr., 320. Formerly 195.
429. Field Theory. (3) Three hours lecture and recitation. A study of dielectric and magnetic fields under both static and dynamic conditions. Development of such basic field equations as Maxwell's and Poisson's. Pr., 320. Formerly 199.
- 430, 431. Individual Projects. (2 to 5 each qtr.) Students registering for these courses are assigned a construction or design project to be carried out under the supervision of the instructor. Formerly 172 and 174.
440. Vacuum Tube Circuits. (4) Three hours lecture and recitation, four hours lab on alternate weeks. A condensation of E.E. 460 especially designed for power majors, with applications in power and related fields. Pr., 420. Formerly 184.
445. Electrical Measurements. (3) Two hours lecture and recitation, three hours lab. Theory and operation of practical and precision measuring apparatus, including bridges, potentiometers, watt-hour meters, demand meters, etc. Pr., 340. Formerly 165.
446. Electrical Machine Design. (3) One hour lecture, six hours lab. Design of a direct-current generator or motor, and of a transformer. Pr., 340. Formerly 176. Lindblom
450. Advanced Alternating Currents. (6) Three hours lecture and recitation, two hours problems, four hours lab. Theory of rotary converters, dielectric phenomena, corona, transmission lines. Pr., 340. Formerly 163.
451. 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 illuminaries. Pr., 320. Formerly 171. Shuck
453. 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. Lab includes some field trips. Pr., 340. Formerly 173. Robbins
457. Industrial Control. (3) Two hours lecture and recitation, three hours lab. Theory and operation of control circuits. Use of vacuum tubes, synchros, amplidyne, saturable reactors, and other circuit components in various types of control circuits. Pr., 340 and 420. Formerly 197. Hoard
460. Vacuum Tube Circuits. (6) Three hours lecture and recitation, two hours problems, four hours lab. Theory of vacuum tube oscillators, modulators, detectors, and amplifiers; applications in radio and other high-frequency fields. Pr., 420. Formerly 183.
470. Communications Networks. (6) Three hours lecture and recitation, two hours problems, four hours lab. Network theorems; series and parallel resonance; theory of transmission lines; theory and design of filters; equalizers; impedance matching. Pr., 320. Formerly 185.
473. 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., 460. Formerly 187. Cochran
479. Radio Design. (2) Four hours lecture and problems. Problems of designing radio receivers and transmitters, and of audio and video amplifiers; selection of suitable components; proper layouts. Pr., 460. Formerly 189. Jacobsen

Courses for Graduates Only

510. **Advanced Circuit Theory I.** (3) Three hours lecture and recitation. Mathematical concepts applied in circuit analysis, including Fourier integrals, matrices, and complex variable. Pr., 340. Formerly 203. **Lewis**
511. **Network Analysis.** (3) Three hours lecture and recitation. Advanced filter theory and applications including the analysis of feedback amplifiers. Pr., 420, 470, 510. Formerly 204. **Lewis**
512. **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., 510. Formerly 205. **Lewis**
514. **Power System Analysis.** (5) Five hours lecture and recitation. Methods of analysis for power systems, with emphasis on the interrelations between generation, transmission and distribution. Analysis by symmetrical components, sequential connections, load division, fault studies, transient and steady state behavior, and elements of system protection. Pr., graduate standing in E.E.
- 520-521-522. **Seminar.** (0-0-2) Required of all candidates for the M.S. degree. Formerly 220-222-224.
541. **Advanced Transients.** (5) Three hours lecture and recitation, four hours lab. Transient phenomena in rotating machinery, transmission lines, corona, lightning; theory and use of impulse generator; precision use of oscillograph. Pr., 425. Formerly 221. **Smith**
543. **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., 450. Formerly 223. **Shuck**
545. **Power Transmission.** (5) Three hours lecture, four hours lab. Theory, design, and operation of electric-power transmission lines. Pr., 450. Formerly 225. **Loew**
547. **Advanced Studies in Power Systems.** (5) Three hours lecture and recitation, four hours lab. Power flow in systems with two voltage sources. General network equations; synchronous machine-power angle characteristics; composite systems. Equivalent reactance of synchronous machines; stability criteria, stability characteristics of turbo-generators; transmission-line electrical loadings and comparative economic study. System design; torque-angle characteristics, two-machine study. Multi-machine problems. Pr., 545. Formerly 227. **Loew**
560. **Wave Phenomena.** (4) Three hours lecture and recitation, two hours problems. Solution of ordinary differential equations as applied to the vibrations of lumped systems. Vector analysis and the solution of the partial differential equations of continuous systems. Fourier series, Bessel's functions, orthogonality. Solution of the field equations for wave guides and radiating systems. Pr., 429. **Tanner**
562. **Advanced Vacuum Tubes.** (4) Four hours lecture and recitation. Emission theory, electron ballistics, electrostatic field distribution and space charge effects. Characteristics of triodes, tetrodes, and pentodes. Electron optics and cathode-ray tubes. Pr., 510. **Harrison**
564. **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., 473. Formerly 251. **Harrison**
566. **Microwave Measurements.** (2) One hour lecture and recitation, three hours lab. Measurements of wavelength, power, admittance, dielectric constant and losses at microwave frequencies. Pr., 460, 470. Formerly 262. **Harrison**
567. **Microwave Vacuum Tubes.** (5) Four hours lecture and recitation, three hours lab. Theory of ultra high-frequency vacuum tubes, klystrons, traveling wave tubes and magnetrons, and their modulation characteristics. Pr., 460. Formerly 263. **Harrison**
570. **Radiation and Propagation.** (4) Three hours lecture and recitation, four hours lab (alternate weeks). Ground-wave and sky-wave propagation; characteristics of the ionosphere; antennas and arrays. Pr., 560. **Palmer**
579. **Wave Propagation.** (6) Five hours lecture and recitation, four hours lab on alternate weeks. Vector analysis; Maxwell's equations; r-f transmission lines; antennas; arrays; wave guides; wave propagation through space. Pr., 470. Formerly 261. **Tanner**
580. **Electroacoustics.** (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., 420. Formerly 241. **Hill**
582. **Servomechanisms in Electrical Engineering.** (4) Three hours lecture and recitation, three hours lab. Function of servomechanisms, analysis of transient and frequency response, components and their characteristics, system synthesis, analytic and experimental techniques. Pr., 510 or permission. Formerly 243. **Stout**
600. **Nonthesis Research.** (2 to 5 each qtr.) Formerly 300.

V. GENERAL ENGINEERING

Professors Wilcox, Brown, Warner; Associate Professors Rowlands, Engel; Assistant Professors Boehmer, Douglass, Gullikson; Instructors Avery, D. R. Douglass, Hammer, Hoag, Macartney, McNeese, Melder, Meiser, Rollins; Lecturer Bliven

101. **Engineering Drawing.** (3) Orthographic projection including three-view drawing and all related views; use of instruments, sections, sketching, isometric and scale practice; stressing readings of drawings and techniques of letter and line-work. Must be preceded or accompanied by solid geometry. Formerly 1. **Boehmer and Staff**
102. **Engineering Drawing.** (3) Training in making acceptable shop drawings; ink and pencil tracings; standards and conventions; practice in reading commercial drawings. Pr., G.E. 101. Formerly 2. **Douglass and Staff**
103. **Drafting Problems.** (3) Applied descriptive geometry. Practical application of descriptive geometry principles to the solution of problems in the different fields of engineering by drafting room methods. Pr., G.E. 101 and 102. Formerly 3. **Warner and Staff**

107. Engineering Drawing. (3) Short course for forestry and art students. Formerly 7. Warner and Hoag
111. Engineering Problems. (3) Training in methods of analyzing and solving engineering problems. Coaching in proper methods of work and study, including training in systematic arrangement and clear workmanship. Deals principally with dynamic problems. Student is assisted in orienting himself in his engineering work. Pr., high school physics and advanced algebra. Formerly 11. Brown and Staff
112. Engineering Problems. (3) Elementary mechanics, statics, and graphics. Continuation of the work in 111. Pr., 101, 111, and Math. 151. Formerly 12. Gullikson and Staff
121. Plane Surveying. (3) Surveying methods, use of instruments, computations, mapping, U.S. public land surveys. Pr., 102 and trigonometry. Formerly 21. McNeese and Staff
351. Inventions and Patents. (1) Law and procedure for patenting inventions, employer-employee relationship, trademarks. Pr., junior standing. Formerly 151. Bliven

VI. HUMANISTIC-SOCIAL STUDIES FOR ENGINEERS

Associate Professor S. W. Chapman; Professor A. V. Hall; Assistant Professors Hemenway, Naiden; Instructors Rupp, Skeels, Southern; Associates White, Bechtel, Cowles, Rustad

- Econ. 211. General Economics for Engineers. (3) Formerly 66.
- Bus. Law 207. Business Law. (3) Formerly 57.
- B.A. 365. Industrial Relations for Engineers. (3) Formerly 166.
- Psychology 336. Industrial Psychology for Engineers. (3) Formerly 122.
- N10. Rudiments of Writing. (0) A 3-hour course taken without credit by students who fail in the entrance test in spelling, punctuation, grammar. Formerly B.
140. Engineering Report Writing. (1) Background of communication; practice in accurate and concise presentation of data through the various forms of technical reports. Pr., passing of admission test or Rudiments of Writing. Formerly 40.
261. Techniques of Communication. (1) Studies in subordination and coordination; analysis of lucidly written expository articles; techniques of reading and use of a reference library. Pr., 140. Formerly 61.
262. Techniques of Communication. (1) Studies in adaptation of material to readers of unlike levels, with emphasis on analysis of argument and propaganda; the newspaper and public address as media of social control; letter of application, recommendation report. Pr., 261. Formerly 62.
263. Techniques of Communication. (1) Studies in successful communication: the novel, poetry, drama; newspaper, radio, cinema; analysis of unlike media as employed by individual artists; an attempt to develop the student's individual style. Pr., 262. Formerly 63.
265. Techniques of Communication. (3) A substitute for 261, 262, 263, when student schedules are irregular. Pr., 140. Formerly 65.
301. Modern Reading. (3-5) Weekly analysis and critical comment upon informative writings, fiction or drama, and current articles, acquainting the student with the main types of literature and art. Taken either in class or by conference alone. Pr., 263 or equivalent. Formerly 101.
302. Technical Writing. (3) Practice in writing; brief readings with analysis and critical comment. Taken either in class or by individual conference alone. Pr., 263 or equivalent. Formerly 102.
331. Humanities. (3) Broad survey of the fields of knowledge, with stress on basic human outlooks evidenced in science, the great religions, and developing democracy. Pr., 263 or 265. Formerly 131.
332. Humanities. (3) Influence of technology on society; studies in great thinkers, artists, and men of action. Pr., 331. Formerly 132.
333. Humanities. (3) Relationship of technology to contemporary social, intellectual, and artistic trends. Pr., 332. Formerly 133.
491. Nontechnical Reading. (1) Literary and informational material, planned to meet the most obvious needs of the individual student; weekly conference. Pr., 263 or equivalent. Formerly 191.
492. Nontechnical Reading. (1) Great works in literature, and their interpreters and critics; weekly conference. Pr., 491. Formerly 192.
493. Nontechnical Reading. (1) Current views, new outlooks, contemporary world development. Pr., 492. Formerly 193.

VII. MECHANICAL ENGINEERING

Professors McMinn, McIntyre, Mills, Schaller, Winslow; Professor Emeritus Eastwood; Associate Professor Hendrickson; Assistant Professors Cooper, Crain, Day, Morrison, Nordquist, Philbrick, Snyder; Instructors Campbell, Foote, Gersbun, Gilbert, Guidon, Krause, Moltrecht, Owens, Watson

201. Metal Castings. (1) Theory and application of the science of producing metal castings. Three-hour period. Formerly 53. Snyder
202. Welding. (1) Fundamentals of electric arc, gas and resistance welding, brazing. Flame cutting, heat bending, and weldment design. Three-hour period. Formerly 54. Gilbert
203. Metal Machining. (1) Theory of metal-cutting machine-tool operation. Three-hour period. Formerly 55. Moltrecht

220. Heat Engines. (3) Various apparatus used in modern power plants; construction, use and reason for installation. Not open to freshmen. Three lectures. Pr., G.E. 102. Formerly 82. Campbell, Cooper, Foote, Krause
221. Mechanical Engineering Laboratory. (3) Calibration of instruments; tests of heat engines and mechanical equipment. Two lectures, three hours lab. Preceded or accompanied by M.E. 220. Formerly 83. Campbell, Krause, Owens
260. Mechanism. (3) Velocity analysis of linkages and other mechanisms; geometry of gearing; transmission of motion by links, gears, cams, and flexible couplings. Three lectures. Pr., G.E. 103, Math. 152. Formerly 81. Day, Foote, Gershun, Watson
305. Tooling for Production. (1) Applied tooling and production of a mechanical project. Three-hour period. Pr., M.E. 203. Formerly 105. Moltrecht
306. Production Techniques. (1) Machining, heat treatment, forging, metal-stamping, techniques. One-hour lecture. Pr., M.E. 305. Formerly 106. Schaller, Moltrecht
307. Production Planning. (1) Design and equipment of a representative manufacturing plant. Three hours lab. Pr., M.E. 305. Formerly 107. Schaller, Moltrecht
320. Thermodynamics. (5) Fundamental principles underlying the transformation of heat into work. Special application to engineering. Five lectures. Pr., M.E. 220, junior standing in engineering. Formerly 118. McMinn, Nordquist
- 322, 323. Experimental Engineering. (3, 3) Continuation of M.E. 221 involving more extended and complete investigations. Six hours lab. Pr., preceded or accompanied by M.E. 320. Formerly 141, 142. McIntyre, Campbell, Cooper, Crain
340. Engineering Materials. (3) Properties of the various materials used in engineering construction. Two lectures, three hours lab. Pr., C.E. 292. Formerly 102. Mills, Cooper, Day
341. Aircraft Materials. (2) Fabrication, processing and heat treatment of nonferrous, ferrous, and nonmetallics in aircraft construction. Three hour period. Pr., M.E. 201, 202, 203. Formerly 104. Schaller
342. Industrial Materials and Processes. (3) Studies of the properties and uses of wood, metals, glass, and plastics in the manufacture of products of interest to industrial designers. Pr., junior standing in industrial design, or permission. Not open to engineering students. Formerly 131. Mills, Philbrick
- 361, 362. Machine Design. (3, 3) Six hours lab. Pr., C.E. 292, preceded or accompanied by M.E. 340. Formerly 111, 112. Cooper, Day, Foote, Watson
- 365, 366. Dynamics of Engines. (2, 2) Investigation of governors, fly wheels, and balancing. Two lectures. Pr., C.E. 291, M.E. 320. Formerly 123, 124. Winslow, Cooper, Nordquist
410. Production Management. (3) Surveying of the organizational, operating, and management problems of industrial enterprises. Three lectures. Pr., junior standing. Formerly 108. Schaller
411. Production Cost Analysis. (3) Economy studies, estimating and cost analysis. Three lectures. Pr., junior standing. Formerly 109. Philbrick
415. 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. Formerly 161. Philbrick, Schaller, Owens
417. 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. Formerly 162. Philbrick, Schaller, Owens
424. Power Plants. (5) Selection of prime movers and auxiliaries for steam power plants. Theory of turbine operation. Five lectures. Pr., 366, senior standing. Formerly 184. Winslow, Cooper
425. Air Conditioning. (3) Theory and practice of temperature and humidity control for industrial and comfort purposes. Three lectures. Pr., M.E. 220. Formerly 182. Hendrickson, Crain
428. Refrigeration. (3) Two lectures, three hours lab, field trips. Pr., 320. Formerly 189. McMinn
433. Marine Engineering. (3) Application of mechanical engineering to ships, including propulsion. Three lectures. Pr., 491. Formerly 188. McMinn
- 463, 464. Machine Design. (2, 2) Advanced problems. Six hours lab. Pr., 362. Formerly 165, 166. Winslow, Morrison
481. Internal Combustion Engines. (3) Analysis and practice; stationary, marine, automotive, and airplane engines. Three lectures. Pr., 320. Formerly 170. Cooper, Guidon
482. Internal Combustion Engine Laboratory. (3) Tests and investigations of various internal combustion units. Four hours lab. Pr., 481. Formerly 172. McIntyre, Guidon
483. Internal Combustion Engine Design. (3) Six hours lab. Pr., 481. Formerly 171. Cooper, Guidon
490. Naval Architecture. (3) Theory of naval architecture. Displacement, stability, strength, construction. Two lectures, three hours lab. Pr., junior standing. Formerly 185. Rowlands
491. Naval Architecture. (3) Theory of naval architecture. Displacement, stability, strength, performance. Six hours lab. Pr., 490. Formerly 186. Rowlands
492. Naval Architecture. (3) Applications of principles of naval architecture. Calculations and design. Six hours lab. Pr., 362, 491. Formerly 187. Rowlands
499. Undergraduate Research. (2 to 5 each qtr.) Formerly 199.

Courses for Graduates Only

541. Advanced Engineering Materials. (3) Their properties, including physical, magnetic, and X-ray methods of inspecting and testing. Two lectures, three hours lab. Pr., 304. Formerly 202. McMinn, Mills
543. Experimental Mechanics of Materials. (3) Pr., graduate standing in engineering or permission. Two lectures, three hours lab. Formerly 206. Day

544. Engineering Instrumentation. (3) Pr., graduating standing in engineering or permission. Formerly 208.
 568. Vibrations of Machinery. (3) Mathematical investigation of vibration phenomena, with emphasis on applications to operating conditions of machines. Three lectures. Pr., permission. Formerly 200. Winslow, Mills
 584. Advanced Internal Combustion Engines. (2) Two lectures. Pr., 481. Formerly 204. Guidon
 600. Nonthesis Research. (2 to 5 each qtr.) Formerly 300.

VIII. MINERAL ENGINEERING

Professor Pifer (Director); Dean Emeritus Roberts; Professor Daniels; Associate Professors Poole, Rowe; Assistant Professors Johnson, Mueller; Instructors Finley, Pechet

Prospector's Course, see page 178

- Mining 10. Prospecting and Mining. (0) Four hours lecture, eight hours lab; field trips. Pechet
 Mining 11. Advanced Prospecting and Mining. (0) Pechet
 Mining 20. Milling. (0) Two hours lecture, five hours lab. Poole, Pechet
 Mining 21. Advanced Milling. (0) Poole, Pechet
 Metallurgy 30. Metals. (0) Three hours lecture, two hours lab. Daniels

Ceramic Engineering

201. Introduction to Ceramics. (2) The history and scope of the ceramics industries; industrial growth; scientific development; economic importance; place in modern civilization. Johnson
 202. Ceramics Raw Materials. (2) Rocks and minerals used in ceramics industries; their mineralogy, physical properties, compositions, sources and origins. Mueller
 203. Process Ceramics: Preparation. (3) The production and preparation of raw materials and outlines of manufacturing procedures for ceramic products. Formerly 95. Mueller
 302. Process Ceramics: Forming. (2) Principles and practices; casting from slips, hand and mechanical forming of unfired bodies; forming from melts. Mueller
 303. Process Ceramics: Coatings. (2) Glazes and colors; their preparation, compositions, application; color theory; solution, colloidal, transition, and stain coloring. Pr., 202. Formerly 122. Johnson
 304. Process Ceramics: Drying and Firing. (3) Drying principles; evaporation, fluid flow through particles, solid-liquid system structure, heat and humidity requirements, air circulation, time relationships; methods. Firing: time-temperature concepts, reaction rates and physical-chemical changes, type of reactions, firing techniques, heat requirements. Pr., junior standing. Formerly 105. Mueller
 N306. Ceramic Engineering Excursion. (0) Plant inspection trip for five days in spring vacation of junior year. Formerly 106.
 N307. Ceramic Engineering Excursion. (0) Plant inspection trip; senior year spring vacation. Formerly 107.
 308. Pyrometry. (2) Principles, methods, and equipment in high temperature instrumentation. Pr., permission. Formerly 108. Johnson
 311. Physical Ceramics: Structure and Reactions. (3) The laws of chemistry and physics applied to ceramic research and production control; crystalline and glassy state; physical-chemical reactions of ceramic materials. Pr., Chem. 357 or permission. Formerly 115. Johnson
 312. Physical Ceramics: Colloids and Rheology. (3) Structural chemistry, colloidal, and rheological phenomenon and their effects on ceramic materials. Pr., Cer. 311. Formerly 100. Johnson
 331. General Ceramics, Pottery Techniques. (3 to 5) (For 3 hrs. credit, 6 hrs. lab; 5 hrs. credit, 10 hrs. lab) Craftsmanship methods of forming ceramic bodies; slab, hand molding, slip casting, turning and jiggering; drying and small kiln firing. Formerly 131. Mueller, Staff
 332. General Ceramics. (3 to 5) Simple glazes; their application to ware; practice in firing; fitting glazes to bodies; textures. Formerly 132. Mueller, Staff
 333. General Ceramics. (3 to 5) Glaze studies; methods of color production; practice in color production with test tiles; methods of decorating ware. Pr., 332. Formerly 133. Mueller, Staff
 402. Dryer and Kiln Design. (2) Application of theory of drying and firing to the calculation and design of dryers and kilns. Pr., senior standing in ceramics engineering. Formerly 124. Mueller
 403. Ceramic Plant Design. (2) Equipment selection, layout plans and economics applied to specific problems. Pr., senior standing in ceramics engineering. Formerly 125. Mueller
 411. Physical Ceramics: Ceramics Equilibria. (2) Equilibrium diagrams and their application to ceramic research and control problems. Pr., Cer. 312 or permission. Formerly 110. Johnson, Mueller
 420. Abrasives. (2) Production, preparation, products and uses; natural and manufactured abrasives; physical properties characteristic of kinds. Pr., junior standing and permission. Staff
 430. Foundry Sands. (2) Physical properties and testing; compositions and compounding; uses and special applications; sources; technology of use. Pr., junior standing and permission. Staff
 440. Glass Technology. (2) Raw materials; chemistry and physics of glass; batches and calculations; melting and fabrication practices; physical properties; special glasses. Pr., junior standing and permission. Formerly 117. Staff
 441. Undergraduate Seminar. (1, maximum 3) Staff
 450. Cements, Limes, and Plasters. (2) Composition, reactions, plant control, grinding and burning, manufacture, chemistry, and physics of processes. Pr., junior standing, permission. Formerly 119. Staff

460. **Ceramic Coatings for Metals.** (2) Production techniques for porcelain and other ceramic coatings; enamels, insulation coatings, refractory coatings. Pr., junior standing and permission. Formerly 162. Staff
470. **Refractories.** (3) Physical and chemical composition; properties under service conditions; testing; utilization. Pr., senior standing in engineering. Formerly 163. Johnson
498. **Undergraduate Thesis.** (*, maximum 5) Special problems for senior thesis. Pr., senior standing. Total of 5 credits required. Formerly 191. Staff
- Not offered 1950-51: Cer. 421, Ceramic Bodies Laboratory (3); Cer. 423, Ceramic Products Laboratory (5); Cer. 464, Heavy Clay Products (3).

Courses for Graduates Only

511. **Theoretical Physical Ceramics.** (3) The theory and application of colloidal phenomenon to the use of ceramic raw materials; colloidal state; colloidal crystal structure; surface phenomena; electrokinetics; base exchange. Pr., Cer. 312. Formerly 231. Johnson
512. **Theoretical Physical Ceramics.** (3) Theory and measurement of physical properties of ceramics; reactions of ceramic materials; surface area determinations; zeta potentials; particle size measurement; thermal analysis. Lab measurements. Pr., Cer. 511. Johnson
513. **Applied Physical Ceramics.** (3) Application of physical ceramics principles to the control of ceramic production; instrumentation studies. Lab and lecture. Pr., Cer. 512. Johnson
520. **Seminar.** (1, maximum 3) Lectures and discussions. Required of all fellowship holders.
521. **Identification of Ceramic Materials.** (3) Theory and use of X-ray diffraction techniques for qualitative identification. Lecture and lab. Pr., Physics 355 or equiv. Mueller
522. **Structure and Analysis of Ceramic Materials.** (3) Theory and lab practice in use of X-ray diffraction for quantitative analysis; structure determinations. Pr., 521 or equiv. Mueller
523. **Identification and Structure Problems.** (3) Lab practice in X-ray diffraction techniques applied to ceramic research. Pr., 522 or equiv. Mueller
590. **Industrial Minerals Research.** (*) Formerly 241. Staff
600. **Nonthesis Research.** (*) Special problems investigated under staff direction; new products or processes; ceramic resources of Pacific Northwest. Staff

Metallurgical Engineering

201. **General Metallurgy.** (1) Fundamental principles used in production and treatment of metals and alloys; constitution of ferrous and nonferrous alloys; development of metallurgical industry and applications to industry. Rowe
202. **General Metallurgy.** (1) Relation between the constitution and structure of metals and alloys from the concepts of modern physical metallurgy; significance of static and dynamic properties of metallic materials. Pr., Met. 201. Finley
203. **Elements of Metallurgy.** (3) Technology of basic unit process in smelting and refining; roasting, calcining, smelting in reverberatory and blast furnace; fluxing; oxidizing, elementary fuels, and refractories. Formerly 53. Finley
301. **Fire Assaying.** (3) Quantitative determination of gold and silver in ores and mill products; testing of reagents; sampling methods; problems of slagging, fluxing, refractory reactions and furnace conditions are considered. Pr., Chem. 221 or 325. Formerly 101. Finley
302. **Wet Assaying.** (3) Commercial and industrial methods of technical analysis of ores, metals, and furnace products; rapid control methods stressed. Pr., Chem. 221 or 325. Formerly 154. Finley
306. **Metallurgy Excursion.** (1) Five-day trip for plant inspection in spring vacation of junior year. Formerly 106. Staff
307. **Metallurgy Excursion.** (1) Senior year, spring vacation inspection trip. Formerly 107. Staff
321. **Nonferrous Metallurgy.** (3) Principles and technology of the extractive metallurgy of copper, lead, zinc, aluminum, and magnesium. Pr., Chem. 221 and Met. 203. Formerly 104. Finley
322. **Metallurgical Calculations.** (3) Physical chemistry of extractive metallurgy; thermodynamics and reaction principles in smelting and allied processes. Pr., Met. 321. Formerly 165. Finley
323. **Advanced Nonferrous Metallurgy.** (3) Electro-metallurgy. Hydro-electric principles and applications to copper, zinc, cadmium, recovery; electrothermal refining and smelting practice; dust recovery systems; plating and electro-forming. Pr., Met. 322. Formerly 166. Finley
361. **Physical Metallurgy.** (3) Fundamental principles and theory, construction and interpretation of equilibrium diagrams, plastic deformation, stress relief, recrystallization and grain growth, solid state reactions, general and cooling properties of alloys. Lab practice in physical testing, temperature measurement, alloy preparation, and introduction to metallography. Pr., Physics 219. Formerly 162. Rowe
362. **Physical Metallurgy.** (3) Fundamentals of phase transformations in ferrous alloys; correlation of resulting structures with properties, iron-carbon constitution diagram; annealing, normalizing, quenching and tempering ferrous alloys; surface treatments and metallurgy of cast irons. Metallographic lab practice in preparation and examination of specimens. Pr., Met. 361 or 441. Formerly 163. Rowe
363. **Physical Metallurgy.** (3) Modern concepts in metallurgy of alloys; high temperature metallurgy of metals and alloys, stress analysis, principles of corrosion; gas-metal equilibria and controlled atmospheres. Applications of physical metallurgy to industrial problems. Lab practice in physical and metallographic examination and interpretation. Pr., Met. 362. Rowe
403. **Elements of Metallurgy.** (3) Same as 203. Pr., upper-division standing. Not open to those who have had 203. Term paper required. Formerly 153. Finley

431. **Light Metal Alloys.** (2) Detailed study of aluminum, magnesium, beryllium, and their alloys; constitution, microstructure, heat treatment, physical properties, and industrial application. Pr., Met. 363. Finley
441. **Engineering Physical Metallurgy.** (4) Elementary physical metallurgy and metallography for nonmajors. Properties and engineering applications of important metals and their alloys. Relation of constitution and structure to properties; equilibrium diagrams; influence of composition, heat treatment, recrystallization and grain growth, deformation and finish on structure and properties; phase transformations in the solid state; selection of metals for specialized engineering interest as high strength-weight ratio alloys, bearing metal, corrosion resistance, magnetic alloys, etc. Lab practice in metallographic examination and testing. Open to upper-division engineering students. Pr., Physics 219. Formerly 141. Finley, Rowe
451. **Powder Metallurgy.** (2) Production of metallic powders by physical and chemical methods; consolidation and subsequent treatment of powder compacts; properties of powder metallurgical products as related to processing conditions; fundamentals relating to powder size, diffusion, adhesion, recrystallization, grain growth and impurity effects; applications to industrial problems. Pr., Met. 362 or Met. 441. Finley
455. **Iron and Steel.** (3) Their metallurgy and manufacture; raw materials; furnaces; melting practices; forming; irons, plain carbon and alloy steels; properties and uses in engineering work. Pr., junior engineering standing. Formerly 155. Daniels
461. **Foundry Metallurgy.** (2) Chemistry, metallurgy, and technology of cast alloys; raw materials, equipment, molding, and casting practices; effect of melting practices, composition, and heat treatment upon physical and mechanical properties of ferrous and nonferrous alloys. Pr., M.E. 201, Met. 441, or equivalent. Rowe
464. **Metallurgical Analysis.** (2) Industrial methods of iron and steel analysis for carbon, sulphur, manganese, silicon, phosphorus, and special alloying elements; constituents of nonferrous alloys, slags, and furnace products. Pr., Chem. 221 or 325. Formerly 160. Rowe, Finley
465. **Metallurgical Inspection of Metals.** (3) Elements of industrial X-ray and gamma-ray radiography; magnetic, magnaglo, zygo, and cyclographic methods. Lab practice in application and interpretation. Pr., Met. 362 or 441. Rowe
466. **Ferrous Alloy Technology.** (2) Constitution, microstructure, heat treatment, and properties of alloy steels in relation to the mechanism by which alloying elements function in low and medium alloy steels. Pr., Met. 363. Rowe
467. **Alloy Steels.** (2) Theoretical study of steels containing chromium, tungsten, nickel, cobalt, silicon, manganese, molybdenum, vanadium, and other metals as definite alloy systems; heat treatment of complex steels; special purpose alloys such as high speed tool, corrosion resistant, high temperature steels especially considered. Pr., Met. 466. Rowe
471. **Fuel Technology.** (3) Primary and manufactured fuels; coals, oils, gases, and chemicals as fuels; their sources, production, and manufacture; their combustion properties; methods of utilization and elements of applied thermodynamics; specifications and economics of fuel use. Pr., junior standing. Formerly 103. Daniels
472. **Fuel Technology Laboratory.** (1) Proximate and thermal analysis of solid, gaseous, and liquid fuels. Pr., Met. 471 concurrently. Formerly 113. Finley
- 481J. **Mineral Industry Economics.** (3) Mineral resources, distribution, utilization, depletion; government policies, taxation, tariffs; industrial organization, cartels, international control; markets and prices; financial provisions in mineral industry; elements of costs in production and equipment replacement. Pr., upper-division standing or permission. Formerly Min. 181. Pifer
498. **Undergraduate Thesis.** (*) Special problems in metallurgy; lab investigations and bibliographic research. Completed thesis due three weeks before graduation. Maximum total of 5 credits required. Formerly 191. Staff

Courses for Graduates Only

520. **Seminar.** (1, maximum 3) Review of research problems and recent articles in the literature. Required of all fellowship holders. Staff
521. **X-Ray Metallography.** (3) Theory and use of the diffraction X-ray in the study of metals. Physical properties, generation and diffraction of X-rays; diffraction equipment; diffraction crystallography, single crystals and powders; interpretation and qualitative analysis. Pr., Physics 355 or equiv. Mueller
522. **X-Ray Metallography.** (3) Precision diffraction methods and their application to simple crystal structure and parameter determinations; chemical composition, grain size and distortion measurements; single crystal orientation; determination of preferred orientation in polycrystalline metals; stress measurements. Pr., 521 or equiv. Mueller
523. **X-Ray Metallography.** (3) Lab practice on specific problems; application technique studies; research methods. Pr., 522. Rowe
531. **Advanced Metallurgy.** (*) Special problems and research. Formerly 221. Staff
561. **Theory of Metals and Alloys.** (3) Modern concepts of metallurgy. Atomic arrangement in metals; metallurgical periodic tables; strain vs. solid state reactions; substitution and interstitial alloys; phase transformations; physical form of alloys; crystal elasticity; plasticity of single and polychrystalline media and alloys; creep and secondary plastic effects; twinning. Pr., 363. Formerly 231. Rowe
562. **Theory of Metals and Alloys.** (3) Internal friction; rupture and fatigue; metal diffusion; solubility of gases in metal; theory of the iron-carbon system; electron theory of solids and its metallurgical applications; band theory; cohesion of solids; electrical and magnetic properties of metals. Pr., 561. Formerly 232. Rowe

563. **Theory of Metals and Alloys.** (3) Crystal structure and phase boundaries; order-disorder transformation, nucleation and grain growth; precipitation phenomena; orientation and shape of new phases; causes of phase change by electronic and potential energy. Pr., 562. Rowe
571. **Fuels and Combustion.** (*) Advanced studies in combustion technology; physics and chemistry of combustion; combustion calculations; technology of coal, oil, and gaseous fuel burning. Pr., Met. 471. Formerly 261. Daniels

Mining Engineering

221. **Elements of Mining.** (3) Prospecting, boring, drilling, explosives, rock breaking, shaft sinking, hoisting, development, and fundamentals of mining methods. Pr., G.E. 102. Formerly 51. Daniels
222. **Methods of Mining.** (3) Working of placer, metal, coal and nonmetallic deposits; haulage, air compression, ventilation, sampling and estimating, organization, safety. Pr., Min. 221. Formerly 52. Daniels
223. **Mine Rescue Training.** (1) Instruction and practice in use of oxygen rescue apparatus; first aid; safety; U.S. Bureau of Mines course. Physical examination required. Formerly 103. Daniels
306. **Mine Excursion.** (1) Five-day trip in spring of junior year to a neighboring mining region. Formerly 106. Daniels
307. **Mine Excursion.** (1) Five-day trip in spring of senior year, similar to 306. Formerly 107. Daniels
421. **Elements of Mining.** (3) Same as 221. Pr., junior standing. Not open to those who have had 221. Formerly 151. Daniels
422. **Methods of Mining.** (3) Same as 222. Pr., 421 and junior standing. Not open to those who have had 222. Formerly 152. Daniels
423. **Coal-Mining Methods.** (3) Prospecting, development, and operation of coal and stratified deposit mines. Principles of mechanized breaking, loading, and transportation. Formerly 152. Daniels
430. **Mine Surveying.** (2) Practice in underground methods, use of special instruments, slope measurements, underground curves, shaft surveying, solar observations, carrying of meridian underground, mine surveying at Independence Mine, Silverton. Pr., C.E. 314. Formerly 108. Pechet
432. **Mining Engineering.** (4) Principles and application; mechanisms in mine machinery, foundations and erection of equipment; conveyor belt design; air compression thermodynamics, practice and distribution; pumping plant and hydraulics; electrical equipment and distribution systems in mines; plant design and construction. Studies at nearby mines and plants. Two hours lecture, six hours lab. Pr., Min.E. 222, E.E. 301. Formerly 163. Pifer
433. **Mine Ventilation.** (3) Principles and practices. Physical and chemical aspects of mine atmospheres, gases, and dusts; physiological considerations, air flow and measurement; mechanical ventilation, equipment, and systems. Pr., Min.E. 222. Formerly 171. Daniels
461. **Mineral Dressing: Preparation.** (3) Elementary principles of mineral dressing. Technology, equipment, and costs for unit process operations: comminution, sizing, classification, thickening, dewatering, filtration, and related auxiliary processes. Pr., junior standing. Formerly 101. Poole
462. **Mineral Dressing: Concentration.** (4) Fundamental principles of ore concentration. Flotation, gravity, magnetic, electrostatic, sink and float methods, and related methods of mineral separation. General concentrator arrangements and flow diagrams. Pr., 461. Formerly 161. Poole
463. **Mineral Dressing: Flotation.** (3) Flotation theory and practice. Applied surface chemistry and technology of flotation concentration for sulfide and nonmetallic minerals. Pr., 461, Chem. 221. Formerly 164. Poole
464. **Mineral Dressing: Leaching.** (3) Cyanidation of gold and silver ores; sand and slime leaching of copper ores; leach-precipitation-flotation methods. Chemical principles; plant detail, operation and control; economics. Pr., 461, Chem. 221. Poole
465. **Mineral Dressing: Microscopy.** (2) Elements of quantitative mineragraphy, microchemistry, mineral liberation studies of polished ore sections. Index liquid determinations for industrial minerals and grain count studies of mineral dressing products. Pr., 461, Geol. 323. Pechet, Poole
466. **Mineral Dressing Practice.** (2) Study of plant flowsheets for the principal sulfide, oxide, and industrial mineral operations. Pr., 462 or 463. Poole
467. **Mineral Dressing Design.** (2) General arrangement planning of beneficiation plants on a project basis. Pr., 466. Poole
476. **Coal Preparation.** (3) Dry and wet cleaning processes; control by float-and-sink methods; characteristics of coal and associated impurities; economics of preparation; market requirements. Pr., Min.E. 461, Met. 471. Formerly 176. Daniels
478. **Coal Preparation Machinery.** (2) Lab work in float-and-sink methods; screening, classification, tabling, jigging, and other cleaning methods. Pr., Min.E. 461, 476, Met. 471. Formerly 178. Daniels
480. **Mineral Land Valuation.** (2) Mine examination methods, estimation of mineral deposits and reserves, financial calculations, reports, professional ethics, mineral land laws. Pr., senior standing. Formerly 180. Pifer
- 481J. **Mineral Industry Economics.** (3) Mineral resources, distribution, utilization, depletion; government policies, taxation, tariffs; industrial organization, cartels, international control; markets and prices; financial provisions; elements in cost of plant and production. Pr., upper-division standing or permission. Formerly 181. Pifer

482. **Mineral Industry Management.** (3) Administrative methods; personnel selection; methods of payment; labor relations; scientific management; social and economic aspects. Pr., senior engineering standing. Formerly 182. Daniels
485. **Industrial Minerals.** (3) Nonmetallic mineral industry; sources of raw materials; processing technology and product specifications; marketing; economics and utilization. Pr., Mining 461 or equivalent. Formerly Cer.E. 90. Poole
498. **Undergraduate Thesis.** (*) Special problems in mining or mineral dressing; laboratory studies and bibliographic research. Total of 5 credits required. Formerly 191. Staff

Courses for Graduates Only

520. **Seminar.** (1, maximum 3) Lectures and discussions. Required of fellowship holders in the School of Mineral Engineering. Formerly 201. Staff
521. **Metal Mining.** (*) Production methods, mining control, support, subsidence, pressure burst control, applied efficiency methods, administration, equipment and machinery, deep level mining, health and safety, special problems. Arranged in accord with student's major interest. Formerly 221. Pifer
522. **Mine Shafts.** (3) Location and design, surface plant, collar preparation; sinking, support, stations and bottoms, equipment and maintenance, safety, costs; rectangular, square, and circular shafts are studied. Pifer
523. **Coal Mining.** (*) Studies in coal mining, preparation or coking with particular reference to Pacific Northwest. Pr., graduate standing. Formerly 251. Daniels
560. **Mineral Dressing.** (*) Special problems and research. Formerly 231. Poole
561. **Advanced Mineral Dressing Preparation.** (*) Unit process studies in comminution, sizing, classifying, auxiliary processes. Poole
562. **Advanced Mineral Dressing Laboratory.** (*) Poole
563. **Advanced Mineral Dressing Theory.** (*) Physics and chemistry of beneficiation; micrometrics. Poole
564. **Advanced Mineral Dressing Design.** (*) Plant layout studies, economics, equipment design. Poole
571. **Cooperative Research with U. S. Bureau of Mines.** (6) Formerly 271.

ENGLISH

Professors Heilman, Blankenship, Eby, Griffith, Harrison, Lawson, Perrin, Roethke, Stirling, Taylor, Wintber; Professors Emeriti Benham, Cox; Associate Professors Adams, Bostetter, H. Burns, Cornu, Maibews, Savage, Stein, Zillman; Assistant Professors S. Anderson, Beal, Brown, Burgess, W. Burns, Colton, Davis, Emery, Eibel, Hall, M. Harris, Hart, Hilten, Kaufman, Kuhn, Nix, Pellegrini, Person, Redford, Trueblood, Vickner, Walters, Willis; Instructors V. Anderson, Burnam, Duckett, Gould, Guberlet, Huston, Jackson, McKinlay, Mark, Mason, Phillips, Stahl, Stocks, Thorpe, Yaggy; Associates Hager, G. Harris, Miller, Rivenburgh, Stevens, Van Vactor; Librarians Gilchrist, Young, Valentine

- English 101 or equivalent is prerequisite to all literature courses except 267, 269, 272, 273.
50. **Elementary Composition.** (No credit) For those who fail in entrance tests for 101. Formerly A. Lawson in Charge
- 50R. **Elementary Composition.** (No credit) For foreign undergraduate students who fail in entrance tests for 101. Formerly AJ. Lawson in Charge
90. **English for Foreign Graduate Students.** (No credit) Formerly S. Lawson in Charge
- 101, 102, 103. **Composition.** (3, 3, 3) Fundamentals of effective exposition; collecting, organizing, and evaluating materials for writing; reading contemporary writings for meaning and form. Formerly 1, 2, 3. Lawson in Charge
- 251, 252, 253. **Factual Writing.** (3, 3, 3) Pr., 101, 102, 103, or equivalent. Biographical and informational writing, 251; Opinion writing, 252; Scholarly and technical writing, 253. Formerly 51, 52, 53.
257. **Introduction to Poetry.** (5) Formerly 57. Zillman
258. **Introduction to Fiction.** (5) Analysis of short stories and novels. Formerly 58.
- 261, 262, 263. **Verse Writing.** (5, 5, 5) Pr., 101, 102, 103, and permission. Formerly 61, 62, 63. Roethke
- 264, 265, 266. **Literary Backgrounds.** (5, 5, 5) The most important English classics, their content, literary forms, and historical relations. Formerly 64, 65, 66.
- 267, 269. **Survey of American Literature.** (3, 3) Not open for credit to students who have taken or are taking 361, 362, or 363. Formerly 67, 69. Davis, Hilten, Phillips
- 272, 273. **Introduction to Modern Literature.** (3, 3) Essays, poetry, novels, plays. Not open for credit to students who are taking or have taken 404, 406, or 466. Formerly 72, 73. Brown
- 277, 278, 279. **Narrative Writing.** (3, 3, 3) Pr., 101, 102, 103, or equivalent. Formerly 77, 78, 79.
301. **The Bible as Literature.** (5) Formerly 101. Trueblood
320. **Modern Poetry.** (5) Backgrounds and tendencies of the period 1900 to 1920. Formerly 120. Zillman
- 328, 329, 330. **Dramatic Composition.** (3, 3, 3) Experimental creative work. Pr., 101, 102, 103, or equivalent. Formerly 128, 129, 130. Redford
- 344, 345. **Eighteenth-Century Literature.** (5, 5) 344, Swift, Pope, Defoe, Addison, and Steele; 345, Doctor Johnson and his circle; the preromantics. Formerly 144, 145. Cornu, Hart

- 350, 351, 352. Old and Middle English Literature. (5, 5, 5) 350, Old English literature in translation; 351, Chaucer and contemporaries; 352, Romances and folk literature. Formerly 150, 151, 152. Ethel, Griffith, Kaufman, Person
- 353, 354. English Literature: 1476-1642. (5, 5) 353, The Renaissance; 354, Non-Shakespearean Elizabethan drama. Formerly 153, 154. Adams
- 361, 362, 363. American Literature. (5, 5, 5) 361: To 1830; 362, Emerson, Thoreau, Hawthorne, Melville, Whitman; 363: Twain, Howells, James. Formerly 161, 162, 163. Blankenship, H. Burns, Davis, Harrison, Hilen, Phillips
- 367, 368, 369. Seventeenth-Century Literature. (5, 5, 5) 367, Bacon, Burton, Brown, the Spenserians, the cavalier poets, the metaphysical poets; 368, Milton; 369, Dryden, Bunyan, Locke, the dramatists, the lyric poets. Formerly 167, 168, 169. Stein, Ethel
- 370, 371, 372. Shakespeare. (5, 5, 5) 370, Introduction; 371, Comedies and histories; 372, Tragedies and romances. Pr., 370 for 371 and/or 372. Formerly 170, 171, 172. Adams, Kaufman, Pellegrini, Stirling, Taylor
- 374, 375, 376. Late Nineteenth-Century Literature. (5, 5, 5) Pr., 374 for 375. Formerly 174, 175, 176. Brown, Winther
- 377, 378, 379. Early Nineteenth-Century Literature. (5, 5, 5) Pr., 377 for 378. Formerly 177, 178, 179. Bostetter, Trueblood, Zillman
- 380, 381, 382. Old English Language. (5, 5, 5) Anglo-Saxon classics in the original. Formerly 180, 181, 182.
387. English Grammar. (3) Formerly 187. Emery
388. Current English Usage. (3) Formerly 188. Perrin
- 390, 391, 392. Major Conference. (3, 3, 3) Formerly 190, 191, 192.
404. Modern European Literature. (5) Formerly 104. Harrison, Hall
406. Modern English Literature. (5) Formerly 106. Harrison, Hall
- 410, 411, 412. Advanced Verse Writing. (5, 5, 5) Pr., 261, 262, 263, and permission. Formerly 110, 111, 112. Roethke
- 413, 414, 415. Types of Contemporary Poetry. (5, 5, 5) Pr., permission. Formerly 113, 114, 115. Roethke
417. History of the English Language. (5) Growth and development of the English language from Anglo-Saxon times to the present. Open to sophomores. Formerly 117. Person
- 424, 425. Types of Dramatic Literature. (5, 5) Analysis of dramatic structure. Tragedy and comedy. Formerly 124, 125. Heilman
- 431, 432, 433. Advanced Factual Writing. (5, 5, 5) 431, Biographical and historical writing; 432, Opinion writing in a variety of fields; 433, Criticism of literature and the arts. Pr., 251, 252, or permission. Formerly 131, 132, 133. Harris
- 437, 438, 439. Advanced Short Story Writing. (5, 5, 5) Pr., 277, 278, 279, or permission. Formerly 137, 138, 139. Harris, Redford, Thorpe
- 440, 441. Social Ideals in Literature. (5, 5) Model commonwealths. Literature and society. Formerly 140, 141. Adams
- 447, 448, 449. The English Novel. (5, 5, 5) Formerly 147, 148, 149. Heilman, Winther, W. Burns
- 456, 457, 458. Novel Writing. (5, 5, 5) Pr., 277, 278, 279, or permission. Formerly 156, 157, 158. Savage
466. Modern American Literature. (5) The beginning of realism; tendencies from 1900 to 1915; contemporary fiction and poetry. Formerly 166. Blankenship, Harrison, Davis, Hall
- 484, 485, 486. Advanced Writing Conference. (3 to 5 each qtr.) Revision of manuscripts. Student entering this course should have the preliminary work on his writing project completed. Pr., permission. Formerly 184, 185, 186. Savage, Redford, Harris
489. English Prose Style. (5) Formerly 189. Perrin
- Teachers' Course. (See Educ.)
- For descriptions of courses in foreign literatures in translation, see departments of Classical, Far Eastern, Germanic, Scandinavian, and Romance Languages.

Courses for Graduates Only

505. Graduate English Studies. (5) Required of candidates for the M.A. and Ph.D. Formerly 201. Griffith
- 507, 508. Literary Criticism. (5, 5) 507 required of candidates for the M.A. and Ph.D. 508 is required of candidates for the Ph.D. Formerly 202, 203. Winther, H. Burns
509. Methods of Contemporary Criticism. (5) Formerly 200. Bostetter, Mathews, Stein
- 510, 511, 512. The Renaissance and Spenser. (5, 5, 5) Formerly 210, 211, 212. Adams, Stirling
513. Shakespeare's Dramatic Contemporaries. (5) Formerly 213. Adams
- 514, 515, 516. Chaucer. (5, 5, 5) Formerly 204, 205, 206. Griffith
- 517, 518, 519. Shakespeare. (5, 5, 5) Formerly 217, 218, 219. Taylor
- 521, 522, 523. Seventeenth-Century Literature. (5, 5, 5) Formerly 221, 222, 223. Stein
- 524, 525, 526. American Literature. (5, 5, 5) Formerly 224, 225, 226. Eby
- 527, 528, 529. Fifteenth-Century Literature. (5, 5, 5) The Post-Chaucerians; Malory's *Morte D'Arthur*, its sources and influence; the fifteenth-century lyric; English liturgical drama and the morality play. Formerly 207, 208, 209.
530. History of the English Language. (5) Formerly 230.
- 531, 532. Old English. (5, 5) Anglo-Saxon grammar; Old English prose and poetry; Beowulf. 531 and 532 required of candidates for the doctor's degree. Formerly 231, 232. Person, Reed

- 538, 539, 540. Early Nineteenth-Century Literature. (5, 5, 5) Formerly 238, 239, 240. Bostetter
 541, 542, 543. Victorian Literature. (5, 5, 5) Formerly 241, 242, 243. Brown, W. Burns, Winther
 544, 545, 546. Eighteenth-Century Literature. (5, 5, 5) Formerly 244, 245, 246. Cornu, Hart
 547. Rhetoric. (5) Formerly 247. Perrin
 553. Current Rhetorical Theory. (5) Formerly 253. Perrin
 600. Nonthesis Research. (*) Formerly 300.

Thesis. (*) Candidates for advanced degrees in English who are working on theses should register for "English Thesis" instead of 600. The normal allowance for a master's thesis is 6 credits and for a doctor's thesis, 45 credits.

General Literature

- 300, 301, 302. Masterpieces of European Literature. (5, 5, 5) Reading of great works from Homer to the present in several genres, mainly the long poem, drama, and the novel. Formerly 151, 152, 153. Mathews
 350, 351, 352. Romanticism and the Nineteenth Century in Europe. (5, 5, 5) Mathews
 400. European Literary Criticism since 1900. (5) Mathews
 450. The Art of Translation. (5) Mathews
 480, 481, 482. The Symbolist Movement. (5, 5, 5) Mathews
 510, 511. Studies in General Literature. (5, 5) Mathews

FAR EASTERN AND RUSSIAN INSTITUTE

and

DEPARTMENT OF FAR EASTERN AND SLAVIC LANGUAGES AND LITERATURE

Professors Taylor, Ballis, Michael, Williston, Wittfogel; Professor Emeritus Gowan; Visiting Professors Li, Poppe, Hsiao; Associate Professors Reiser, Spector, Takumi; Assistant Professors Chu, Erlsch, Ewing, Gershevsky, Maki, Shih, Treadgold; Lecturers Hsia, Wilhelm; Instructors Kastner, Lavaska, Lee, Novikow, Pahn; Research Associates Ho, Wu; Associates Iland, Lantos, Longwell, Matsushita, Namkung, Roebitz, Yang

The Far Eastern and Russian Institute

110. Survey, Problems of the Pacific. (5) Social, economic, and political problems of the countries of the Far East: China, Japan, Korea, The Philippines, Indonesia, and Southeast Asia. It includes the development of Russia as an Asiatic power as well as the rule of the Western powers in the Far East. (Juniors and seniors take 310 rather than 110.) Formerly 10. Taylor, Michael, Williston, Maki
 113. Introduction to the Soviet Union. (5) An introduction to the land, people, institutional development, economy, social organization, government, and foreign relations of the Soviet Union. Formerly 15. Ballis
 221. History of Russia. (5) Survey of Russia's history from the earliest times to the present, with emphasis on the development of Russian society. Formerly 93J. Treadgold
 240. Chinese Civilization. (5) Survey of China's material civilization, fine arts, literature, religion, and thought in relation to the general development of Chinese society. Formerly 40. Shih
 241. Japanese Civilization. (3) Survey of Japan's material civilization, fine arts, literature, religion, and thought in relation to the general development of Japanese society. Formerly 41. Maki
 242. Korean Civilization. (3) Survey of Korea's material civilization, fine arts, literature, religion, and thought in relation to the general development of Korean society. Formerly 42. Williston
 243. Russian Civilization. (5) Survey of Russia's material civilization, fine arts, literature, religion, and thought in relation to the general development of Russian society. Formerly 43. Spector
 290. History of China. (5) Survey of China's history from the earliest times to the present, with emphasis on the development of Chinese society. Formerly 90. Williston
 291. History of Japan. (5) Survey of Japan's history from the earliest times to the present, with emphasis on the development of Japanese society. Formerly 91. Williston
 292. History of Korea. (5) Survey of Korea's history from the earliest times to the present, with emphasis on the development of Korean society. Formerly 92. Williston
 310. Problems of the Pacific. (5) Social, economic, and political problems of the countries of the Far East: China, Japan, Korea, The Philippines, Indonesia, and Southeast Asia. It includes the development of Russia as an Asiatic power as well as the role of the Western powers in the Far East. (Juniors and seniors are advised to take this course in place of 110 if possible. Credit cannot be received for both 310 and 110.) Formerly 110. Taylor, Michael, Williston, Maki
 313. Civilization of Southeastern Asia. (5) A study of the impact of India, China, and the West upon native cultures of Burma, Siam, Indo-China, British Malaya, Indonesia, and the Philippines. The evolution of social, political, and economic institutions. Formerly 113. Kastner
 415. Literature of China in Translation. (5) Formerly 155. Shih
 420, 421, 422. Russian Literature. (5, 5, 5) In translation; 420, the great masters of the Golden Age; 421, contemporary literature from Gorky to Sholokov; 422, Russian drama—a survey of representative Russian plays, 1782-1948. Formerly Russian 150, 151, 152. Spector

- 423J. Modern Russian History. (5) Survey of the development of the Soviet Union from the Russian Revolution to the present. Formerly 167J. Treadgold
- 424J. Russian Revolutionary Movement. (3) Survey of intellectual and political aspect of Russian opposition to Tsarism from 1828 to 1917. Treadgold
426. Mongol Literature. (3) History of Mongol literature. Poppe
430. Survey of Mongol Culture. (3) Introduction into Mongol nomadic culture, tribal organization in ancient times. Present state of Mongolia and its cultural life. Poppe
443. Chinese Social Institutions. (5) Formerly 143. Hsiao
444. Chinese History—Earliest Times to 221 B.C. (5) History of pre-imperial China. Pr., 290 or upper-division standing. Formerly 144. Wilhelm
445. Chinese History—221 B.C. to 906 A.D. (5) History of the development of the imperial Chinese state. Pr., 290, 444, or upper-division standing. Formerly 145. Wilhelm
446. Chinese History—906 A.D. to 1840 A.D. (5) History of the Wu Tai, Sung, Yuan, Ming, and early Ch'ing periods. Pr., 290, 444, or upper-division standing. Formerly 146. Wilhelm
447. Modern Chinese History. (5) Survey of modern Chinese society from 1840 to the present. Pr., 110 or upper-division standing. Formerly 147. Taylor
448. History of Republican China. (3) Formerly 148. Michael
457. Modern Japanese History. (5) Survey of the beginnings and development of modern Japan, and Japan's transformation under American rule. Formerly 157. Maki
478. Russia in Asia. (3) Survey of the relations of Tsarist Russia and the Soviet Union with Eastern Asia. Formerly 168. Ballis
490. Undergraduate Seminar on China. (3) Survey of the principal literature of China in Western languages, introduction to the methodology of Chinese studies and Chinese historiography. Pr., permission. Formerly 190. Williston
499. Undergraduate Research. (3 to 5, maximum 15) For Far Eastern majors. Pr., permission. Formerly 199. Staff

Courses for Graduates Only

510. Methodology in Far Eastern Studies. (3) Required of all graduate students taking degrees or writing theses in Far Eastern subjects, other than languages. Formerly 200. Staff
- 519J. Seminar on Asia. (3) The continent will be taken in large cultural regions. Formerly 224J. Staff
- 521, 522, 523. Seminar on Eastern Asia. (4, 4, 4) Formerly 220, 221, 222. Taylor, Wittfogel, Michael
524. Seminar on Dostoyevsky. (3) A study of Dostoyevsky, his ideology, and influence on Russian and European thought, based primarily upon his major novels. Formerly Russ. 285. Spector
- 525, 526. Seminar on Far Eastern Diplomacy. (3, 3) Formerly 225, 226. Williston
- 530, 531, 532. Seminar on China. (3, 3, 3) Chinese historiography. Pr., permission. Formerly 210, 211, 212. Wilhelm
- 540J. Seminar on the Soviet Union: Government and Diplomacy. (4) May be repeated once for credit. Pr., permission of the instructor. Formerly 230. Ballis
600. Nonthesis Research. (*) Pr., permission. Formerly 300. Staff
- Not offered in 1950-51: 453, Japanese Social Institutions; 449, Contemporary China; 428, Literature of Japan in Translation.
- Courses offered in other departments for which Far Eastern credit is given: Anthropology 310, 311, 312; 414, 542; Art 382, 383, 384; Economics 492, 493; Geography 403, 432, 433, 436, 503, 513, 515, 517; Philosophy 428, 429; Political Science 310, 329, 332, 342, 344, 345, 420, 440, 441.

Department of Far Eastern and Slavic Languages and Literature

Chinese

101. Chinese Language. Intensive A. (10) Formerly 1. Li, Staff
206. Chinese Language. Intensive B. (10) Pr., 101 or equivalent. Formerly 3. Li, Staff
301. Chinese Language. Intensive C. (10) Pr., 206 or equivalent. Formerly 101. Li, Staff
- 402, 403, 404. Advanced Modern Chinese. (5, 5, 5) Pr., 301 or equivalent. Formerly 102, 103, 104. Staff
- 405, 406, 407. Introduction to Classical Chinese. (5, 5, 5) Syntactical analysis, translation from literary Chinese into English and vice versa. Pr., 301 or equivalent. Formerly 105, 106, 107. Reifer
408. Chinese Reference Works and Bibliography. (3) Introduction to the methodology of Sinology. Pr., 301 or equivalent. Formerly 108. Chu
499. Undergraduate Research. (3-5, maximum 15) For Far Eastern majors. Pr., permission. Formerly 199. Staff

Courses for Graduates Only

- 522, 523, 524. Readings in Classical Chinese. (5, 5, 5) Formerly 202, 203, 204. Reifer
 525. Structure of Chinese Characters. (5) Formerly 205. Reifer
 526, 527, 528. Studies in Chinese Literature. (5, 5, 5) 526, Literature of the Chou and Han periods; 527, Literature from Wei to T'ang times; 528, Literature since the end of T'ang. Formerly 206, 207, 208. Shih
 529. Chinese Phonology. (3) Formerly 209. Li
 531. Studies in Chinese Poetry. (5) Dealing with the origin, development, and technique of Chinese versification. Pr., Chinese 407. Formerly 211. Wilhelm
 532. Studies in Chinese Drama and Novel. (5) A study of the origin and development of the Chinese drama and novels. Pr., Chinese 407. Formerly 212. Li, Shih
 550. Seminar on Chinese Literature. (4) May be repeated once for credit. Formerly 250. Shih
 555. Seminar on Chinese Linguistics. (3) Advanced phonology, problems of Archaic Chinese, dialectology; descriptive and historical treatment of the language. Pr., 529 or permission. Li
 Not offered in 1950-51: 455, Chinese Lit., Earliest Times to End of Han; 456, Chinese Lit., End of Han to End of T'ang; 457, Chinese Lit. Since T'ang Times; 510, Morphology and Syntax of Literary Chinese; 521, Chinese Bibliography; 526, Studies in Chinese Lit., Chou and Han Periods; 527, Studies in Chinese Lit. from Wei to T'ang Times; 530, Studies in Chinese Prose.

Hungarian

- 102-103, 104. Elementary Hungarian Language. (5-5, 5) Oral analytic method will be used, modified so as to serve toward a reading knowledge. Formerly 1-2, 3.
 302. Intermediate Hungarian Language. (5) Reading, vocabulary, and composition. Pr., permission. Formerly 101.
 303, 304. Advanced Hungarian Language. (5, 5) Reading, vocabulary, and composition. Pr., 302 or permission; 303 or permission for 304. Formerly 102, 103.

Japanese

101. Japanese Language. Intensive A. (10) Formerly 1. Tatsumi, Staff
 206. Japanese Language. Intensive B. (10) Pr., 101 or equivalent. Formerly 3. Matsushita, Staff
 301. Japanese Language. Intensive C. (10) Pr., 206 or equivalent. Formerly 101. Tatsumi, Staff
 402, 403, 404. Advanced Japanese Language. (5, 5, 5) Pr., 301 or equivalent. 402 for 403; 403 for 404. Formerly 102, 103, 104. Staff
 405, 406, 407. Readings in Japanese Sources. (5, 5, 5) (May be repeated for credit.) Pr., 404 or equivalent. Formerly 105, 106, 107. Tatsumi
 408. Elements of Soshō. (3) Pr., 301 or equivalent. Formerly 108. Tatsumi
 409. Elementary Japanese Composition. (5) Pr., instructor's permission. Formerly 109. Staff
 499. Undergraduate Research. (3-5, maximum 15) For Far Eastern majors. Pr., permission. Formerly 199. Staff

Courses for Graduates Only

510. Morphology and Syntax of the Japanese Language. (5) Formerly 200. Tatsumi
 521. Japanese Reference Works in Bibliography. (3) Pr., permission. Formerly 201. Maki
 Pr., permission. Formerly 201. Maki
 522, 523, 524. Readings in Documentary Japanese. (5, 5, 5) May be repeated for credit. Formerly 202, 203, 204. Tatsumi
 525, 526. Advanced Composition in Documentary Japanese. (5, 5) Formerly 205, 206. Tatsumi

Korean

- 302-303. Elementary Spoken Korean Language. (5-5) Formerly 1A, 1B. Lee
 304. Intermediate Korean. (5) Pr., 303 or equivalent. Lee, Staff
 405. Korean Grammar. (5) Formerly 105. Lee
 406, 407, 408. Advanced Korean Reading. (5, 5, 5) Korean composition, literature, and advanced reading. Pr., permission. Formerly 106, 107, 108.
 499. Undergraduate Research. (3-5, maximum 15) For Far Eastern majors. Pr., permission. Formerly 199. Staff
 Not offered in 1950-51: 301, Korean Language, Intensive A; 306, Korean Language, Intensive B; 401, Korean Language, Intensive C; 404, Advanced Korean.

Mongolian

302. Introduction to Mongolian. (5) Formerly 101. Poppe
 303. Classical Mongolian. (5) Systematical course of the grammar, syntax, and styles of the Mongolian written language of the seventeenth to twentieth centuries. Pr., 302. Formerly 102. Poppe
 304. Colloquial Mongolian. (5) Grammar of colloquial Mongolian spoken in Outer and Inner Mongolia. Reading of colloquial texts with translation into English; conversation in Mongolian. Pr., 303. Formerly 103. Poppe

406. Comparative Grammar of Mongol Language. (5) History of sounds and grammatical forms of written Mongol and colloquial language. Pr., 304. Poppe
 499. Undergraduate Research. (3-5, maximum 15) For Far Eastern majors. Pr., permission. Formerly 199. Staff

Courses for Graduates Only

521. Ancient Mongol: hPhagspa Script. (3) Script and grammar of hPhagspa texts, reading and translation. Pr., 304. Poppe
 522. Mongol Ancient Texts. (3) Grammar and reading of Mongol texts of the fourteenth to seventeenth centuries. (Mainly historical texts.) Pr., Mong. 303. Poppe
 580. Comparative Mongol and Turkic Languages. (3) Comparative phonology and morphology of Mongol and Turkic (and other related) languages. Pr., 522. Poppe

Russian

101. Russian Language. Intensive A. (10) Formerly 1. Gershevsky
 102-103. Elementary Russian Language. (5-5) Formerly 1A, 1B. Novikow, Lavaska
 204. First-Year Elementary Russian. (5) Pr., 103 or equivalent. Formerly 2. Lavaska
 206. Russian Language. Intensive B. (10) Pr., 101 or equivalent. Formerly 3. Pahn
 301. Russian Language. Intensive C. (10) Pr., 206 or equivalent. Formerly 101. Novikow
 302, 303. Russian Grammar and Composition. (5, 5) 302, Emphasis on grammar; 303, Emphasis on composition—oral and written. Pr., 301, 302 for 303. Formerly 102, 103. Pahn
 304. Advanced Russian Language. (5) Pr., 303. Can be repeated once for credit. Formerly 104. Gershevsky
 407, 408, 409. Advanced Russian Reading. (5, 5, 5) Covers progressively: (a) industrial Russia, (b) introduction to Russian classics, (c) modern Russian literature. Pr., 301 or equivalent. Erlich, Staff
 410. Advanced Russian Grammar and Composition. (5) Pr., 303 or equivalent. Formerly 110. Erlich
 455. Modern Russian Poetry. (3) A study of Russian poetry in its Renaissance (from 1890 to 1925). Pr., 409 or equivalent. Formerly 155. Erlich
 475. Soviet Press Translations. (5) Pr., 410 or equivalent. Formerly 175. Longwell
 485. History of Russian Standard Language. (3) Historical outline of the Russian literary tongue from its inception to our time. Pr., 410. Formerly 185. Erlich
 491. Introduction to Slavic Philology. (3) Examination of the common origin of Slavic languages. Pr., 410. Formerly 191. Erlich
 499. Undergraduate Research. (3 to 5, maximum 15) For Far Eastern majors. Pr., permission. Formerly 199. Staff

Courses for Graduates Only

521. Advanced Russian Syntax. (3) Pr., 410. Formerly 201. Poppe
 522. Phonetic Structure of Slavic Languages. (3) Pr., 410. Formerly 202. Poppe
 523. Morphological Features of Slavic Languages. (3) Pr., 410. Formerly 203. Poppe
 531. Old Church Slavonic. (3) Descriptive study of the phonology and grammar of old church Slavonic. Pr., 410. Formerly 221. Erlich
 532. Readings in Old Church Slavonic. (3) Reading and grammatical interpretation of old church Slavonic texts. Pr., 410. Formerly 194. Erlich
 557. Seminar in Russian Language. (3) Examination and discussion of Russian masterpieces. Pr., 410. Formerly 257. Erlich, Gershevsky
 559. Russian Oral Epic Tradition. (3) Introduction to Russian folklore. Pr., 410. Formerly 259. Erlich
 560. Studies in Early Russian Literature. (3) Pr., 410 or equivalent. Formerly 260. Staff

Serbo-Croatian

- 102-103, 104. Elementary Serbo-Croatian Language. (5-5, 5) Formerly 1, 2, 3. Rochlitz

FISHERIES

Professors Chapman, Donaldson, Lynch, Van Cleave; Associate Professor Hastings; Assistant Professors DeLacy, Welander; Curator of Fishes Herre

- 108, 109, 110. General Survey of Fisheries Work. (1, 1, 1) Lectures by eminent speakers from the game and fish agencies, the commercial fisheries agencies, and the commercial fishing industry designed to provide the student with early vocational orientation. Required of all majors. Formerly 108, 109, 110. Staff
 401. Comparative Anatomy and Physiology of Fishes. (5) A general survey of the morphology, exclusive of the skeleton, and the bodily functions of fishes. Pr., Zool. 111, 112. Formerly 101. Welander
 402. Phylogeny of Fishes. (5) Skeletal morphology of fishes; survey of the system of fish classification; distribution of fishes. Pr., 401. Formerly 102. Welander
 403. Identification of Fishes. (5) An introduction to the research methods and techniques of ichthyological systematics with particular attention paid to the identification of food and game fishes. Pr., 402. Formerly 103. Welander

A student with
 101, 102, 103, 206 (10)
 301, 302, 303, 407, 408, 409
 410, 455, 475, 485, 491, 499
 may take 206 (10)

405. **Economically Important Mollusca.** (5) The classification, life histories, distribution, methods of cultivation, and economic importance of oysters, clams, abalones, pearl shells, octopi, squids, and related molluscs. Pr., Zool. 111, 112. Formerly 105. Lynch
406. **Economically Important Crustacea.** (5) The classification, life histories, distribution, methods of capture, and economic importance of crabs, shrimps, lobsters, crawfish, and the smaller Crustacea, which are fished commercially or are important as food for fishes and other vertebrates. Pr., Zool. 111, 112. Formerly 106. Lynch
407. **Aquatic Invertebrates of Minor Economic Importance.** (5) Classification, life histories, occurrence, and utilization of invertebrates of economic importance such as sponges, corals, annelid worms, starfish, sea cucumbers, sea urchins, and other aquatic invertebrates fished or cultivated on a commercial scale. Pr., Zool. 111, 112. Formerly 107. Lynch
425. **Migrations and Races of Fishes.** (5) Marking and other methods of determining migrations of fishes and homogeneity of fish populations; implication of these factors to the management of both fresh water and marine fisheries. Pr., 401, 402. Formerly 125. DeLacy
426. **Early Life History of Marine Fishes.** (5) Reproduction, larval and post-larval life of economically important marine fishes; dispersion and survival rates; implications of these factors to management of food fisheries; methods of investigation used in this field of research. Pr., 401, 402. Formerly 126. DeLacy
427. **Ecology of Marine Fishes.** (5) Effect of variations in hydrographic conditions, availability of food, type of bottom, geographic location, and other environmental conditions on distribution of fishes, their segregation into homogeneous stocks, their variation in abundance and availability to the fisheries, and research techniques in this field. Pr., 401, 402. Formerly 127. DeLacy
451. **Propagation of Salmonoid Fishes.** (5) Methods of hatching and rearing; collection and incubation of salmon eggs; design, structure and maintenance of hatcheries, pond systems, and aquaria. Pr., 401, 402; Chem. 111, 112 or 115, 116. Formerly 151. Donaldson
452. **Nutrition of Fishes.** (5) Feeding and efficiency of diets; food costs and supplies; basic nutritional requirements of fish; nutritional diseases of fish. Pr., 401, 402; Chem. 111, 112 or 115, 116. Formerly 152. Donaldson
453. **Freshwater Fisheries Management: Biological.** (5) Creel census methods; stocking policies, lake poisoning; pond fish propagation; determination of the productive capacities of streams, lakes, and ponds and their suitability for particular kinds of fishes. Pr., 401, 402; Chem. 111, 112 or 115, 116. Formerly 153. Donaldson
454. **Communicable Diseases of Fishes.** (5) Organisms causing diseases in fishes; prevention of fish diseases and treatments where known. Pr., 401, 402; Microbiology 301. Formerly 154. Lynch
456. **Age and Growth of Fishes.** (3) Principles of growth; methods of determining age and rates of growth in freshwater and marine fishes. Pr., 401, 402. Formerly 156. Van Cleve
457. **Population Enumeration.** (3) Methods of enumerating animal populations; availability; dominant age groups, gear selectivity. Pr., Math. 113; Zool. 111, 112; Fish. 456. Formerly 157. Van Cleve
458. **Population Dynamics.** (3) Influence of natural and artificial factors on variation in abundance and yield from animal populations. Pr., Math. 113; Zool. 111, 112; Fish. 457. Formerly 158. Van Cleve
- 480, 481. **Introduction to Commercial Fishing Industry.** (3, 3) Lectures, demonstrations, and trips conducted by qualified persons from the industry on commercial fishing operations, marketing, processing, reduction, organization, and labor relations within the industry. Formerly 180, 181. Staff
484. **Canning and Curing of Fish.** (5) Application of physical, chemical, and biological sciences to fish and shellfish preservation; processing engineering, quality control, commercial methods. Pr., Chem. 232; Microbiology 301. Formerly 184. Hastings
485. **Refrigeration of Fish.** (5) Application of refrigeration to processing and marketing of fishery products; refrigeration engineering. Pr., Chem. 232; Microbiology 301. Formerly 185. Hastings
486. **Preparation of Fish By-products.** (5) Production of fish by-products, industrial oils, meals, and pharmaceutical products; utilization of fish wastes. Pr., Chem. 232; Microbiology 301. Formerly 186. Hastings
495. **Introduction to Fisheries Literature.** (2 per qtr.; maximum total 6) Directed training in searching bibliographic sources. Six hours' credit required of all fisheries majors. Pr., 15 credits in fisheries. Formerly 195. Staff
499. **Undergraduate Research.** (3 per qtr.; maximum total 9) Permission of staff. Individual research within the School of Fisheries or on-the-job training in governmental or industrial fisheries organization. Pr., permission. Formerly 190. Staff

Courses for Graduates Only

501. **On-the-Job Training.** (3 per qtr.; maximum total 9) Guided on-the-job training in governmental or industrial fisheries organizations. Permission. Formerly 201. Staff
 520. **Graduate Seminar.** (2 per qtr.; maximum total 6) Six credits required of all graduates. Training in methods of searching fisheries literature. Formerly 205. Staff
 604. **Nonthesis Research.** Maximum total credit: for Master of Science degree, 3 credits; for Doctor of Philosophy degree, 10 credits. Formerly 304. Staff
- Not offered in 1950-1951: 460, **Freshwater Fisheries Management: Hydraulic**; 461, **Freshwater Fisheries Management: Water Uses**; 482, **World Fisheries**; 483, **Commercial Fisheries Management**.

FORESTRY AND LUMBERING

Professors Marchworth, Grondal, Pearce; Associate Professors Brockman, Erickson, Robertson; Assistant Professors DeMoisey, Haddock, Macdonald; Instructors Baker, Bryant, Covington, Gessel, Stenzel

101. Development of Forestry. (3) Orientation course required of all freshmen. Formerly 3. Macdonald
- 102, 103. Forestry Problems. (2, 3) Methods of attack, emphasizing accuracy, analysis, and interpretation of forestry data. Pr., Math. 154, 155. Formerly 8 and 9. Macdonald
- 106, 107. Dendrology. (3, 3) Identification, classification, distribution of the trees of North America. Pr., Bot. 114. Formerly 1a and 1b. Brockman
130. Elementary Forest Fire Control. (3) Factors influencing their spread, methods of presuppression, detection, and suppression. Pr., 101 or 301. Formerly 4. Macdonald
201. First Aid to the Injured. (2) Formerly 5.
205. General Lumbering. (3) Comparative methods in different regions of the U. S. Prerequisite to all courses in logging and milling. Pr., 106, 107. Formerly 15. DeMoisey
220. Silviculture Field Studies. (2) Field studies and nursery practice. Given at Pack Forest. Pr., 106. Formerly 40. Haddock, Gessel, Covington
260. Forest Mensuration. (5) Theory of scaling, volume and taper tables, sample-plot methods, determination of contents of stands, growth, yield. Pr., 101, 103; Math. 156. Formerly 60. Stenzel
261. Field Problems in Forest Mensuration. (6) Given at Pack Forest. Pr., 107, 260; G.E. 107. Formerly 62. Stenzel
301. Survey of Forestry. (3) For nonmajors. Formerly 6. Brockman
303. Forest Geography. (3) Economic geography of the forest regions of the world. Pr., junior standing. Formerly 171. Grondal
306. Wood Technology. (4) Identification, taxonomy, physical and chemical properties of wood. Pr., 106, 107; Physics 103 or 106; 10 credits in chemistry; Bot. 116. Formerly 109. Erickson
307. Wood Structure. (3) Identification, xylotomy, and elementary microtechnique. Pr., 306. Formerly 111. Erickson
310. General Forest Soils. (3) The physical, chemical, biological, and profile characteristics of soils as related to soil formation. Soil classification and soils of the United States. Three field trips required. Pr., Bot. 116; Chem. 112 or 116; Geol. 215; Physics 101 or 104; Math. 156. Formerly 130. Gessel
320. Elements of Silviculture. (3) The natural basis of silviculture; methods of controlling growth and reproduction of forests. For forest products majors only. Pr., Bot. 116; For. 106, 107; Geol. 215. Formerly 125. Haddock
321. Silvics. (3) Relation of trees and forests to soil, moisture, light, and temperature; forest ecology. Pr., 101, 106, 107; Bot. 116; Geol. 215. Formerly 121. Haddock
322. Silvicultural Methods. (3) Type and site classification; intermediate and final cuttings; natural and artificial regeneration. Pr., 220, 321. Formerly 122. Haddock
335. Forest Insect Control. (3) Forestry practice in the control of insect attacks. Pr., 320 or 322. Formerly 115. Brockman
350. Wild-Life Management. (3) Interrelations between forests and wild life; life histories and habits of animals involved. Pr., junior standing. Formerly 154. Brockman
353. Range Management. (3) Fundamentals of range management; the interrelations of plants, animals, and man. Methods and economics of proper management. Two Saturday field trips required. Enrollment by permission of the instructor. Pr., junior standing, Bot. 114, 115, 116. Formerly 155. Gessel
356. Forest Recreation. (3) Recreational needs, values, resources, and objectives; planning and development of outdoor recreational resources. Pr., 101 or 301; junior standing. Formerly 156. Brockman
370. Wood Preservation. (3) Classification and control of wood-destroying agencies; mechanical properties of treated wood. Pr., 307. Formerly 105. Erickson
371. Wood-Preservation Laboratory. (2) Evaluation of preservatives; methods of testing and inspection of treated material. Must be preceded or accompanied by 370. Formerly 106. Erickson
373. Forest Utilization. (5) Secondary and derived forest products. Pr., 306. Formerly 158. Bryant
380. Lumber Grading. (2) Study and practice of regional grading rule and American lumber standards of sizes and patterns. Pr., 205, 306, 403 or 404. Formerly 182.
401. Safety Practices in Forest Industries. (2) Frequency and cost of accidents; methods of accident prevention. Pr., senior standing. Formerly 170. Pearce
403. Timber Physics. (3) The mechanical properties of wood. For forest management majors only. Pr., 103, Math. 156, and Physics 101 or 104.
404. Timber Physics. (5) General mechanics, stresses, tests, theory of flexure, moisture and strength; mechanical properties of wood. Pr., 102, Math. 156; Physics 101 or 104. Formerly 104. Baker
406. Microtechnique. (3) Preparation, sectioning, staining, and mounting of woody tissues and fibers. Pr., 307. Formerly 190. Grondal
408. Forest Economics and Finance. (5) Position of forests in the economic structure; cost of growing timber; valuation of land for forest production. Pr., 260; Econ. 211. Formerly 151. Robertson
409. Forest Policy and Administration. (3) Development of forest policies; forest laws. Pr., senior standing. Formerly 119. Marchworth

410. Advanced Forest Soils. (3) Relations of soils to plant growth. Laboratory study of those physical, chemical, and biological properties of soils affecting plants. Pr., 310. Formerly 131. Gessel
420. Artificial Regeneration. (3) Establishment of forests by artificial methods. Biological and economic aspects of forest plantation. Pr., 310, 320. Haddock
423. Application of Silvicultural Methods. (4) The application of silvicultural methods in the forest regions of the United States. Pr., 322. Formerly 123. Haddock
430. Advanced Forest Fire Control. (3) Presuppression, suppression, training methods, analysis of protection facilities, proper methods of slash disposal and hazard removal, fire behavior, and organization for large fires. Formerly 124. Macdonald
440. Construction. (4) Roads, trails, wood bridges, telephone lines; land clearing; design of wood structures. Pr., 403 or 404; G.E. 107; C.E. 256. Formerly 140. Pearce
441. Forest Engineering. (5) Logging plans and costs; correlation of logging-engineering methods with condition of stand, topography, forest management, etc. Pr., 322, 440. Formerly 185. Pearce
442. Logging Engineering. (5) Machinery, equipment, and problems. Pr., 441. Formerly 186. Pearce
- 446, 447, 448, 449. Logging-Engineering Field Study. (3, 5, 5, 3) 446, Logging plans; 447, Topographic and timber surveys; 448, Road location surveys; 449, Logging cost analysis. Development of a complete logging plan and cost analysis in a large operation. Pr., 442. Formerly 191, 192, 193, 194. Pearce
460. Forest Management. (5) Sustained-yield management; forest working plans. Pr., 408, 423. Formerly 152. Robertson
- 466, 467, 468, 469. Senior Management Field Studies. (5, 5, 4, 2) 466, Surveys; 467, Inventory; 468, Studies; 469, Report. The courses lead to development of a working plan for a large operation. Pr., 460. Formerly 164, 165, 166, 167. Robertson
470. Forest-Products Industries. (3) Secondary forest industries; production and marketing of forest products other than lumber, plywood, and pulp. Pr., 306. Formerly 157. Bryant
471. Timber Design. (3) Beams, columns, trusses, timber connectors and fastenings; design, fabrication, and erection of timber structures. Pr., 403 or 404. Formerly 108. Baker
472. Plywood, Lamination, and Glues. (4) Manufacture of plywood and laminated wood; glues and their proper employment; utilization of glued wood products. Pr., 404, 470. Formerly 159. Bryant
476. Wood Pulp. (5) Design of waste conversion plants; wood-pulp manufacture. Pr., 306; 373 or 470. Formerly 189. Grondal
481. Milling. (5) Organization, planning, operation, and administration of timber conversion plants. Pr., 403 or 404, 470 or 373; M.E. 220. Formerly 183. Grondal
482. Manufacturing Problems. (5) Lumber-producing regions; economics and geography of utilization; selling and distribution of lumber; financing methods. Pr., 481; Acctg. 150. Formerly 184. Grondal
483. Theory and Practice of Kiln Drying. (3) Wood-liquid relationships and hygrometry; application of gas laws. Problems in the design of dry kilns. Pr., 306, 373, or 470. Formerly 188. Grondal
- 490, 491, 492. Undergraduate Studies. (1 to 5 each 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. Formerly 160, 161, 162.

Courses for Graduates Only

520. Graduate Seminar. (1, maximum 3) Required of graduate students. Formerly 208. Staff
540. Advanced Forest Engineering. (5) Logging management, cost analysis, stumpage and logging appraisal, financial reports. Pr., 446, 447, 448, 449. Formerly 220. Pearce
560. Forest History and Policy. (3) Forestry policy of the U. S.; the rise of forestry abroad. Pr., 409, 460. Formerly 221. Marckworth
562. Forest-Management Plans. (3 to 5 each qtr.) Pr., 469. Formerly 204. Robertson
570. Advanced Wood Preservation. (3) Theory of penetrance; design of treating plants. Fireproofing and fireproofing compounds. Pr., 370, 371. Formerly 203. Grondal
- 590, 591, 592. Graduate Studies. (2 to 5 each qtr.) In fields for which there is not sufficient demand to organize regular courses. Formerly 210, 211, 212.
600. Nonthesis Research. (*) Formerly 300.

GENERAL LITERATURE

(See English, page 261)

GENERAL STUDIES

Advisory Committees: W. G. Lutey (General Studies), Chairman; H. T. Buechel (Economics); D. E. Emerson (History); B. Pauline Johnson (Art); Dixy Lee Ray (Zoology); H. E. Wheeler (Geology); Frank Williston (Far Eastern)

391. Supervised Study in Selected Fields. (*, maximum 6) For use of any student wanting to do special supervised study in a field represented in the College of Arts and Sciences. Pr., permission from major department, supervisor of study, and General Studies office. Formerly 191.

451. 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. Formerly 151. Interdepartmental Staff
- 455-456. 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. Formerly 155-156. Interdepartmental Staff
493. Thesis. (1 to 5) Required course for General Studies majors. Pr., permission of supervisor of study and General Studies office. Formerly 193. Not offered in 1950-1951: 121-122, American Social Trends.

GEOGRAPHY

Professor H. H. Mertin; Associate Professors Earle, Lawton, Williams; Assistant Professors Garrison, Sherman; Acting Instructors Chapman, Heintzelman, Tennant; Lecturer Rankin; Acting Associates Herman, Miller, Thomson

100. Survey of World Geography. (5) World regions; man's relation to his habitat. Not open to students who have had 107. Formerly 1. Heintzelman, Lawton
102. Physical Geography. (5) Land forms, soils, waters, mineral products, topographic maps. Formerly 2. Chapman, Williams
107. Economic Geography. (5) Regions and resources; factors locating industries; commodities in international trade. Not open to students who have had 100 or 300. Formerly 7. Martin, Staff
111. Weather and Climate. (5) World distribution of temperature, pressure, winds, precipitation. Weather maps. Not open to students who have had Meteorology 101. Formerly 11. Chapman
115. Mountain Geography. (2) Highland areas of the world, agriculture, pastoral, and industrial; mountain communities; recreational values; barrier and boundary theories. Formerly 15.
170. World Geography. (5) Economic-political; for journalism students only. Formerly 70. Martin, Staff
202. Geography of the United States. (5) Regional and industrial. Formerly 102. Sherman, Williams
210. Resources of the Pacific Northwest. (2) Rural and urban development; industry; regional problems. Formerly 110.
300. World Regional Geography. (5) Not open to those who have had 100 or 107. Pr., junior standing. Formerly 101. Lawton, Tennant, Heintzelman
325. Geographic Background of American History. (3) The role of geography in settlement and development. Pr., 10 credits in history or geography. Formerly 125. Martin
395. Readings in Geography. (*) Pr., permission. Formerly 195. Staff
403. Geography of Asia. (5) Countries and natural regions; resources; population; transportation; trade. Pr., 100, 107, 300, or permission. Formerly 103. Earle
404. Geography of Europe. (5) Countries and regions; manufacturing; commercial relationships. Pr., 100, 107, 300, or permission. Formerly 104. Martin, Williams
405. Geography of South America. (5) Regions; resources, economic activities, and relations. Pr., 100, 107, 300, or permission. Formerly 105. Rankin
406. Geography of Africa. (5) Colonization and development. Resources; plantation agriculture; tropical problems. Pr., 100, 107, 300, or permission. Formerly 106. Earle, Sherman
407. Geography of Australia and New Zealand. (5) Colonization and development; land use; mining; industry. Pr., 100, 107, 300, or permission. Formerly 107. Lawton
408. Geography of Canada and Alaska. (3) Regions, resources, economic and social development. northern settlement. Pr., 100, 107, 300, or permission. Formerly 108. Lawton
409. Geography of Caribbean America. (5) Economic and culture regions; peoples and politics. Pr., 100, 107, 300, or permission. Formerly 109. Rankin
- 419J. Australia: Its Peoples, Environment, and Institutions. (5) Joint course with anthropology and history. Pr., 15 credits in anthropology, geography, or history. Formerly 179J. Lawton
421. Climates of the Continents. (5) Climatic types and their geographic distribution. Pr., 111, or permission. Formerly 121. Sherman
432. Islands of the Pacific. (5) Climate, resources, peoples, colonial problems. Pr., 100, 107, 300, or permission. Formerly 132. Earle
433. Geography of the U. S. S. R. (3) Agriculture, resources, industrial development; national planning. Pr., 100, 107, 300, or permission. Formerly 133. Williams

† President R. B. Allen (Medicine), Right Reverend S. F. Bayne (Religion), L. D. Carlson (Physiology and Biophysics), S. Chapple (Music), H. B. Densmore (Classics), S. C. Dodd (Sociology), L. R. Donaldson (Fisheries), M. D. Glickfeld (Economics), J. B. Harrison (English), M. H. Hatch (Zoology), J. R. Huber (Economics), F. S. Hulse (Anthropology), M. Jacobs (Anthropology), W. G. Lutey (General Studies), L. A. Mander (Political Science), A. W. Martin (Zoology), Max M. Levin (Psychology), A. I. Melden (Philosophy), V. A. Mund (Economics), J. R. Naiden (Humanistic-Social), H. L. Nostrand (Romance Languages), R. W. O'Brien (Sociology), R. Penington (Art), L. E. Powers (Public Health and Preventive Medicine), M. Rader (Philosophy), G. Sabagh (Sociology), M. Saville (History), V. Sivertz (Chemistry), A. F. Smullyan (Philosophy), D. W. Treadgold (History), R. G. Tyler (Civil Engineering), E. A. Uehling (Physics), C. T. Williams (Education), F. Williston (Far Eastern).

436. **Geography of China.** (3) Regional divisions; agriculture, home industry, the industrial pattern; village and city development. Pr., 100, 107, 300, or permission. Formerly 171. Herman
455. **Influences of Geographic Environment.** (5) Theory of occupancy; urbanization; human adjustment. Pr., 20 credits of geography or permission. Formerly 155. Earle
460. **Cartography.** (5) Map projections, symbols, scales, sketch mapping, block diagrams. Formerly 160. Williams, Sherman
461. **Intermediate Cartography.** (3) Projections; relief representation; field mapping. Pr., 460 and permission. Formerly 161. Williams, Sherman
462. **Advanced Cartography.** (2-5) Pr., 460 and permission. Individual projects. Formerly 162. Williams, Sherman
470. **Conservation of Natural Resources.** (5) Public policy; land reclamation; resource utilization. Pr., 100, 107, 300, or permission. Formerly 170. Sherman
475. **Political Geography.** (3) Geographic basis of national and international problems. Pr., 10 credits of geography. Formerly 175. Williams
477. **Urban Geography.** (3) Major cities of U. S. Formerly 177. Martin
499. **Undergraduate Research.** (3-5, maximum 10) Research methods; presentation of paper. Pr., permission. Formerly 199. Martin
- Teachers' Course in Geography.** (See Educ. 3750)

Courses for Graduates Only

500. **Geographic Theory.** (5) Formerly 200. Earle
501. **Seminar in Source Materials.** (3) Formerly 201. Earle
502. **Seminar, Writing and Critique.** (3) Formerly 202. Martin, Sherman
503. **Seminar in Asia.** (3) Formerly 203. Earle
504. **Seminar in Europe.** (3) Formerly 204. Martin, Lawton
505. **Seminar in Latin America.** (3) Formerly 205.
513. **Seminar on China.** (3) Formerly 213.
515. **Seminar on Japan.** (3) Formerly 215. Martin, Earle
517. **Seminar on Southeast Asia.** (3) Formerly 217. Earle
537. **World Resources and Industries.** (*, maximum 10) Formerly 207. Garrison, Staff
540. **Land Utilization.** (5) Formerly 220. Lawton, Sherman
550. **Advanced Regional Studies.** (*) Staff
551. **Readings and Conferences.** (*) Formerly 295. Staff
555. **History and Theory of Geography.** (*, maximum 6) Formerly 255. Earle
- Thesis.

GEOLOGY

Professors Goodspeed, Barksdale, Coombs, Fuller, Mackin, Misch; Professor Emeritus Weaver; Associate Professor Wheeler; Assistant Professor Vesonen; Acting Instructors Willis, Scott; Acting Associate Oles

101. **Survey of Geology.** (5) Formerly 1. Coombs, Barksdale, Oles
102. **Geology in World Affairs.** (5) Geological occurrence, world distribution and production of coal, petroleum, and the important industrial materials. Pr., 101 or 205. Formerly 2. Barksdale
103. **Earth History.** (5) Geology from a chronological standpoint including the elements of stratigraphy and paleontology. Pr., 101 or 205. Formerly 3. Scott
205. **Rocks and Minerals.** (5) Pr., high school chemistry. Formerly 5. Goodspeed
206. **Elements of Physiography.** (5) Processes and agencies affecting the earth's surface; relation of topography to structure, etc. Pr., 101 or 205. Formerly 6. Mackin
207. **Historical Geology.** (5) Origin and evolution of the earth, with emphasis on the general history of North America. Pr., 205 and 206, or permission. Formerly 7. Wheeler
215. **Soils and Water Resources.** (3) Basic physical geology in relation to soils and water resources. Primarily for foresters and sanitarians. Formerly 115. Wheeler
221. **Mineralogy.** (5) Determinative crystallography and blowpipe analysis. Pr., 205 and high school chemistry. Formerly 121. Willis
300. **History of Geology.** (3) Required of all majors in geology. Pr., 15 credits in geology. Formerly 100. Barksdale
308. **Structural Geology.** (5) Interpretation of rock structures and their genesis. Pr., 205, 206, 207; G.E. 101, 102, 103. Formerly 8. Barksdale
310. **Engineering Geology.** (5) Elements of geology for civil engineers. Pr., civil engineering or permission. Formerly 10. Mackin
323. **Optical Mineralogy.** (5) Petrographic microscope and recognition of common minerals in thin section. Pr., 205, 221 (except for upper-division chemistry students). Formerly 123. Coombs
324. **Petrography and Petrology.** (5) Systematic study of rocks with the petrographic microscope. Pr., 323. Formerly 124. Coombs

325. Petrography and Petrology. (5) Metamorphic rocks, petrogenesis. Pr., 324. Formerly 125. Misch
 330. General Paleontology. (5) Systematic study of fossils. Pr., 207 or permission. Formerly 130.
 332. Invertebrate Paleontology. (5) Pr., 207. Formerly 132.
 344. Field Methods. (5) Geologic and topographic surveying and recording. Pr., 308, G.E. 121. Barksdale
 Formerly 144.
 361. Stratigraphy. (5) Sedimentation and facies; rock and time units; evaluation of boundaries; principles of correlation. Pr., 205, 206, 207; suggested 330/332. Formerly 131. Wheeler

Summer Field Course

400. Advanced or Field Work in General Geology. (*) An approved summer field course or approved field experience is a requirement for all advanced degrees in geology. Formerly 200S.
 412. Physiography of Eastern United States. (5) Pr., 205, 206, 207. Formerly 112. Mackin
 413. Physiography of Western United States. (5) Pr., as for 412. Formerly 113. Mackin
 414. Map Interpretation, Constructional Landforms. (5) Pr., 205, 206, 207. Formerly 114. Mackin
 426. Sedimentary Petrography. (3) Correlation of sedimentary rocks by their mineral constituents. Pr., 324. Formerly 126. Willis
 427. Ore Deposits. (5) Their form, structure, mineralogy, petrology, and mode of origin. Pr., 221, 324. Formerly 127. Goodspeed
 429. Advanced Ore Deposits. (3) Pr., 427. Formerly 129. Goodspeed
 433. Mesozoic Geology. (5) From a world standpoint with special emphasis upon Europe. Pr., 330, 332. Formerly 133. Weaver
 443. Advanced Structural Geology. (5) Pr., 308. Formerly 143. Misch
 450. Elements of Seismology. (5) Pr., senior standing in geology. Formerly 150. Vesanen
 481. Preparation of Geologic Reports and Publications. (3) Pr., senior in geology. Formerly 181. Coombs
 498. Undergraduate Thesis. (5) Thesis must be submitted at least one month before graduation. Pr., senior in geology. Formerly 190.

Courses for Graduates Only

Two modern foreign languages are necessary for graduate work in geology, but only one foreign language is required for the master's degree.

501. Advanced Petrography and Petrology of Igneous Rocks. (*) Formerly 201. Goodspeed
 503. Advanced Petrography and Petrology of Sedimentary Rocks. (*) Formerly 203. Coombs
 510. Advanced Studies, Research or Field Work in Physiography. (*) Formerly 312. Mackin
 516. Glacial Geology. (5) Formerly 116. Mackin
 520. Seminar. (*) Formerly 200. Staff
 521. Metamorphic Minerals. (5) Misch
 522. Regional Metamorphism and Granitization. (5) Formerly part of 202. Misch
 523. Static Granitization. (5) Formerly part of 202. Goodspeed
 530. Advanced Work in Paleontology. (*) Formerly part of 330. Wheeler
 532. Stratigraphic Paleontology. (3) Formerly part of 200. Wheeler
 534. Tertiary Geology. (5) Formerly 134.
 537. Tertiary Faunas of Washington. (5) Formerly 137.
 540. Advanced Studies or Research in Structural Geology. (*) Formerly 340. Barksdale, Misch
 545. Regional Structural Geology. (5) Formerly part of 245 and 340. Misch
 560. Advanced Work in Stratigraphy. (*) Formerly part of 330. Wheeler
 565. Paleozoic Stratigraphy. (5) Formerly part of 200. Wheeler
 568. Mesozoic Stratigraphy. (3) Wheeler
 570. Advanced or Research Work in Mineralogy, Petrography, and Petrology. (*) Formerly 320. Goodspeed, Coombs, Misch
 580. Advanced or Research Work in Economic Geology. (*) Formerly 327. Goodspeed, Coombs
 600. Nonthesis Research. (*) Formerly 300.

GERMANIC LANGUAGES AND LITERATURE

Professors Vail, Eckelman, Lauer, Meisnest: Associate Professors Meyer, Sauerlander; Assistant Professors Anhele, Reed, Rey, Schertel, Wesner, Wilkie; Instructors Buck, Kahn, Rabel, Richeimer, Sommerfeld

Students of mathematics and the applied sciences should take German 101-102, 103, and additional courses in second-year German, 260 and the upper-division scientific courses for specialized reading.

Students of history and the social sciences should elect German 210 and the courses listed in the 310's.

Credit is allowed for any quarter in any course except German 101-102.

- 101-102. First Year. (5-5) Formerly 1-2.
 103. First-Year Reading. (5) Pr., 101-102 or one year of high school German. Formerly 3.
 110-111, 112. First-Year Speaking German. (5-5, 5) Formerly 1S-2S, 3S.
 121, 122. First-Year Reading German. (5, 5) Formerly 1R, 2R.
 204. Second-Year Reading. (5) Pr., 103 or two years of high school German. Formerly 4.
 205. Second-Year Reading. (3) Pr., as for 204; not open to those who have had 204. Formerly 5.
 206. Second-Year Reading. (2) Pr., as for 204; not open to those who have had 204. Formerly 6.
 207. Second-Year Grammar Review. (3) Pr., 103 or 2 years high school German. Formerly 7.
 210. Advanced Second-Year Reading. (3) Pr., 204 or 205 or 206. Formerly 10.
 230. Conversation Based on Rapid Reading. (3) For students interested primarily in acquiring a speaking knowledge. Pr., 204 or 205 or 206. Formerly 30. Sauerlander, Sommerfeld
 260. Lower-Division Scientific German. (3) Pr., 204 or 205 or 206. Formerly 60. Staff
 300. Phonetics. (2) Speech sounds, stage pronunciation, phonetic transcription. Formerly 128. Meyer, Reed
 301, 302, 303. Grammar and Conversation. (2, 2, 2) Primarily for majors and minors. The materials used in this course aim not merely at the increase in the ability to speak, write, and understand German, but also to broaden the student's understanding of the culture of the German-speaking countries. Open only to juniors. Pr., 8 credits of second-year German including German 207. German 230 is recommended, but not required as a prerequisite to this course. Kahn
 310, 311. Introduction to the Classical Period. (3, 3) Lessing, Goethe, and Schiller. Biographical studies. Pr., 8 credits of second-year German or equivalent. Formerly 130, 131. Ankele
 312. Introduction to the German Novelle. (3) Representative writers, such as Keller, Meyer, and Storm; theory of the *Novelle*. Pr., as for 310. Formerly 132. Sauerlander
 320, 321, 322. Upper-Division Scientific German. (2 or 3). Each student reports on reading in his own field in weekly conferences. Pr., 260 or equivalent. Formerly 113, 114, 115.
 325. Upper-Division Scientific German for Premedics. (3) Pr., as for 320. Formerly 116.
 401, 402, 403. Grammar and Composition. (2, 2, 2) Primarily for majors and minors. Open only to seniors. Pr., completion of German 301, 302, 303. Formerly 120, 121, 122. Vail, Meyer, Key
 404. 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. Formerly 129. Meyer, Reed
 410, 411, 412. History of German Literature. (3, 3, 3) From the earliest times to the Age of Goethe. Pr., 310 or equivalent. Formerly 183, 184, 185. Buck, Wilkie
 422. The German Lyric. (3) Pr., 310 or equivalent. Formerly 149. Sommerfeld
 431. Lessing's Life and Dramatic Works. (3) Pr., 310 or equivalent. Formerly 160. Vail
 436, 437. Goethe's *Faust* I and II. (3, 3) Pr., 310 or equivalent. Formerly 166, 167. Sommerfeld, Vail
 450J. Introduction to General Linguistics. (5) Description and historical techniques in the analysis of languages. Given in conjunction with anthropology. Jacobs, Reed
 497. Studies in German Literature. (1 to 5) Pr., 310 or equivalent. Formerly 199.
 498. Studies in German Philology. (1 to 5) Pr., 310 or equivalent. Formerly 198. Teachers' Course in German. (See Educ. 375L.)

Courses in English Translation

No knowledge of German required. Open to all students.

351. German Literature of the Nineteenth Century. (3) Formerly 101. Sommerfeld
 462. Goethe. (3) Formerly 102. Sauerlander
 464. Thomas Mann. (3) Trends in German thought and letters during the twentieth century; social and economic backgrounds. Formerly 104. Key

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.

Literature Courses

500. Bibliography and Methodology. (2) Required of all majors and Ph.D. minors. Formerly 200.
 510. Literature of the Middle Ages. (5) Formerly 210.
 511. Reformation and Renaissance. (3) Formerly 211.
 512. Baroque. (3) Formerly 212.
 513. Eighteenth-Century Movements. (3) Formerly 213.
 515. The Romantic Movement. (4) Formerly 230.
 516. The Literature of the Mid-Nineteenth Century. (4) Formerly 231.
 517. The Literature of the Later Nineteenth Century. (4) Formerly 232.
 518, 519. The Literature of the Twentieth Century. (3, 3) Formerly 235, 236.

530. Survey of the Classical Period. (3) Formerly 214.
 531. Lessing. (3) Formerly 222.
 534. Goethe's Leben und Werke 1775-1788. (4) Formerly 215.
 535. Goethe im Zeitalter der Vollendung. (4) Formerly 216.
 538. Schiller. (4) Formerly 221.
 540. History of the Novel. (3) Formerly 240.
 541. History of the German Drama. (3) Formerly 241.
 590. Seminar in Literary History: E.T.A. Hoffman. (1-5) Formerly 290. Sommerfeld
 591, 592. Seminar in Literary History. (1 to 5) Formerly 291, 292.

Philology Courses

- 501, 502, 503. Advanced Syntax and Synonymy. (2, 2, 2) Required of all majors and minors. Formerly 201, 202, 203.
 505. Introduction to Linguistics. (3) Formerly 204.
 550. Gothic. (5) Formerly 255.
 552. Old High German. (5) Formerly 256.
 555. Old Saxon. (5) Formerly 257.
 556. Middle High German. (5) Formerly 250.
 557. Middle High German Literature in the Original. (5) Formerly 251.
 560. Modern Dialects. (3) Formerly 260.
 570. Sanskrit. (3-5) Formerly 270.
 595, 596, 597. Seminar in Germanic Philology. (1 to 5) Formerly 295, 296, 297.
 Not offered in 1950-51: 131, 132: First-Year Intensive Reading (10, 10); 350: Masterpieces of German Literature (3); 415, 416, 417: Nineteenth-Century Literature (3, 3, 3); 418, 419: Naturalism, Expressionism, and Twentieth-Century Realism (3, 3); 433: Goethe, The Early Years (3); 434: Goethe, Life and Works 1775-88 (3); 438: Schiller's Historical Dramas (3).

HISTORY

Professors Holt, Costigan, Katz, Levy, Lucas, Savelle; Associate Professors Dobie, Gates; Assistant Professors Emerson, Lytle, Pressly, Treadgold

101. Medieval European History. (5) The history of Europe from the disintegration of the Roman Empire to 1500 viewed as the evolution of the basic values and assumptions of Western civilization. Emphasis is placed upon the aspects of this history which led to the development of law, the maintenance of order, and the growth of ideas with their expression in political, economic, and social institutions and in literature and art. Formerly 1. Dobie, Katz, Lytle
 102. Modern European History. (5) Political, social, economic, and cultural history of Europe from 1500 to the present time, including evolution of nationalism, democracy, and imperialism, and their interrelation with the results of the industrial revolution. Formerly 2. Dobie, Emerson, Lytle, Treadgold
 201-202. Ancient History. (5-5) Ancient Near East, Greece, and Rome, with emphasis on political, social, economic, and cultural development. Special attention to elements of ancient civilization contributing most vitally to the civilization of the medieval and the modern world. Formerly 72-73. Katz
 221J. History of Russia. (5) Survey of Russia's history from the earliest times to the present, with emphasis on the development of Russian society. Formerly 93J. Treadgold
 241. Survey of the History of the United States. (5) Supplies the knowledge of American history which any intelligent and educated American citizen should have. Object is to make the student aware of his heritage of the past and more intelligently conscious of the present. Formerly 7. Holt, Pressly, Savelle
 271-272. English Political and Social History. (5-5) From earliest times down to the present day. Emphasis is chiefly on political and social developments, with consideration also of general cultural interest. The origins in English history of American political institutions and social patterns are also stressed. Formerly 5-6. Costigan
 341. Foundations of American Civilization. (5) A study of the history of the founding of Anglo-Saxon society in the western hemisphere, with particular attention to the earliest colonial establishments, the growth of a new culture, independence, and the organization of the American union. This is a basic course. Open to sophomores and up. Formerly 140. Savelle
 342. The Development of American Civilization to 1877. (5) A study of the growth of the new nation, and the political, economic, and cultural activities of its people to the liquidation of the problems attending the Civil War. History 241 may not be taken after this course. Gates
 343. American Civilization from 1877. (5) A study of the emergence of modern America after the Civil War and of the interrelations of economic, social, political, and intellectual history. History 241 may not be taken after this course. Pressly
 403. The Roman Republic. (3) A study of the political, social, economic, and cultural history, with special emphasis on the last century of the Republic, the period of Cicero and Caesar. Formerly 103. Katz

410. *The Byzantine Empire.* (5) A study of the political, institutional, and cultural history of the Eastern Roman Empire from the fourth to the fifteenth centuries. Special emphasis is given to the relations of the Byzantine Empire with the Latin West and the Slavic and Moslem worlds. Formerly 110. Katz
413. *Medieval Civilization.* (5) Art, letters, religion, science, and thought in Europe outside Italy from 1200 to 1500. Formerly 120. Lucas
414. *Culture of the Renaissance.* (5) Art, literature, politics, philosophy, science, and religion in Italy from 1300 to the death of Michelangelo. Formerly 114. Lucas
415. *The Reformation.* (5) Political and religious crisis. Lutheranism, Zwinglianism, Anglicanism, Anabaptism, Calvinism, Catholic reform. Beginnings of Baroque art. Formerly 115. Lucas
- 416J. *Introduction to Roman Law.* (5) Open to qualified sophomores. Formerly 116J. Levy
- 419J. *Australia: Its Peoples, Environment, and Institutions.* (5) An integrated study of geographic and cultural patterns, of economic and political development and its relations with the Commonwealth of Nations. Pr., 15 credits of anthropology, geography, or history. Formerly 179J. Davidson, Dobie, Lawton
- 423J. *Modern Russian History.* (5) Survey of the development of the Soviet Union from the Russian Revolution to the present. Formerly 167J. Treadgold
- 424J. *Russian Revolutionary Movement.* (3) Survey of intellectual and political aspects of Russian opposition to Tsarism from 1825 to 1917. Treadgold
430. *The French Revolution and Napoleonic Era.* (5) Formerly 129. Lytle
431. *Europe, 1814-1870.* (5) The reorganization of Europe after Napoleon's fall. The impact of the industrial revolution and the problems of a society in flux. Bureaucratization and politics in the European states. The revolutions of 1848 and the nationalist wars for the reorganization of Europe. Formerly 130. Lytle
432. *Europe, 1870-1914.* (5) The impact of Bismarckian Germany. The significance of the Paris Commune. The Eastern Question and the Bismarckian organization of the European state system. Politics: people, bureaucracies, and parliaments. Problems of economic change. Imperialism and the problems of the state system. The moral crisis and its challenge to the West. The collapse of the Bismarckian system and the new alliances. Policies leading to war. Formerly 131. Emerson
- 433J. *Europe, 1914-1945.* (5) Broad outline of history from World War I to the end of World War II. Formerly 133J. Levy
437. *Germany, 1916-1945.* (5) A survey of the political history of Germany from the collapse of the Bismarckian empire in 1916 to the collapse of Hitler's empire in 1945. Formerly 137. Emerson
447. *History of the Civil War and Reconstruction.* (5) A study of sectional conflict and the struggle between rival nationalisms in mid-nineteenth century America. Formerly 147. Pressly
450. *Twentieth-Century America.* (5) A study of political, social, economic, and intellectual developments in the United States since 1900. Formerly 150. Pressly
457. *The Diplomatic History of North America, 1492-1763.* (5) Formerly 157. Savelle
458. *The United States in World Affairs, 1776-1865.* (5) The relation of the United States to world politics and the balance of power will be studied as well as the historical events attending the major episodes in American foreign relations. Formerly 158. Holt
459. *The United States in World Affairs, 1865 to the Present.* (5) A continuation of 458 into the period when the United States entered the balance of power as a major factor. Formerly 159. Holt
461. *History of American Liberalism Since 1789.* (5) A comparative study of the aims and the accomplishments of four major reform movements in the history of the United States: Jeffersonian democracy, Jacksonian democracy, the progressive movement, and the New Deal. Pressly
463. *The Westward Movement.* (5) Territorial and economic expansion of the United States from the Revolution to World War I; conditions affecting settlement and development of the West; political and social institutions; interregional relations. Formerly 165. Gates
464. *History of Washington and the Pacific Northwest.* (5) Exploration and settlement; economic development; growth of government and social institutions; the period of statehood. Formerly 164. Gates
472. *England in the Nineteenth Century.* (5) A study of political, social, economic, and cultural development. The Agrarian, Industrial, and French Revolutions; rise of parliamentary democracy, the Victorian age; thought from Utilitarianism to Fabianism; Irish Home Rule. Formerly 183. Costigan
474. *Modern Irish History.* (5) Growth of Irish national feeling in the nineteenth century, through the Home Rule and Sinn Fein movements, down to the establishment of the Irish Free State and later the Republic of Eire. Special relation of this to the Irish Literary Renaissance. The problem of Ulster and the government of Northern Ireland. Formerly 185. Costigan
475. *History of Canada.* (5) A study of the struggle for unity and nationhood as determined by geographical conditions, by racial antagonism, by the impact of modern commercial and industrial society upon an old-world culture, and by pulls toward both Europe and the United States. Formerly 155. Dobie
481. *History of the Commonwealth of Nations.* (5) A survey of the advancements and dependencies of Great Britain to the status of independent nations associated with Great Britain. Formerly 181. Dobie
499. *Undergraduate Research.* (1 to 5) Formerly 199.

Courses for Graduates Only

501. **Historiography: Ancient, Medieval, and Early Modern Europe.** (5) Required of all graduate students majoring in history. Graduate students taking a minor in history may take either 501 or 502. Formerly 201. Katz and Staff
502. **Historiography: Modern European and American.** (5) Required of all graduate students majoring in history. Graduate students taking a minor in history may take either 501 or 502. Formerly 202. Katz and Staff
503. **Philosophy of History.** (5) Formerly 203. Costigan
504. **Philosophy of History.** (5) Formerly 204. Costigan
600. **Nonthesis Research.** Formerly 300. Staff

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.

510. **Greek and Roman History.** (5) Formerly 210. Katz
514. **Medieval and Renaissance History.** (5) Formerly 214. Lucas
516. **Roman Law.** (5) Formerly 234. Levy
531. **Modern European History: Russia.** (5) Formerly 231. Treadgold
532. **Modern European History.** (5) Formerly 232. Emerson
533. **Modern European History.** (5) Formerly 233. Lytle
541. **American History.** (5) Formerly 221. Savelle
542. **American History.** (5) Formerly 222. Gates
543. **American History.** (5) Formerly 223. Holt
575. **English History.** (5) Formerly 215. Costigan
576. **British Empire History.** (5) Formerly 216. Dobie

Seminars

- 517-518-519. **Seminar in Ancient or Medieval History.** (5-5-5) Formerly 237-238-239. Lucas
- 521-522-523. **Seminar in Modern European History.** (5-5-5) Formerly 240-241-242. Emerson
- 553-554-555. **Seminar in American History.** (5-5-5) Formerly 243-244-245. Gates, Savelle
- 590-591-592. **Seminar in History.** (5-5-5) Formerly 251-252-253. Staff
- 593-594-595. **Advanced Seminar.** (*) Formerly 246-247-248. Holt

Not offered in 1950-51: 291-292, Latin-American History; 371, English Constitutional History; 401, Greece in the Age of Pericles; 402, Alexander the Great and the Hellenistic Period; 404, The Roman Empire; 429, France from the Reformation to the French Revolution; 436, Germany from 1648 to 1914; 441, American Revolution and Confederation; 442, The Colonial Mind; 443, The Intellectual History of the United States; 457, The Diplomatic History of North America, 1492-1763; 471, England in the Eighteenth Century; 473, England in the Twentieth Century; 480, History of the British Empire Since 1783.

HOME ECONOMICS

Professors Rowntree, Denny, Payne, Terrell; Associate Professor Dresslar; Assistant Professors Bonnell, Johnson, Johnston, McAdams, Warning; Instructors Bishop, Parks, Rose, Smith, Thorson, Wade, Wybourn; Acting Instructor Hosmer

101. **Introduction to Home Economics.** (1) Orientation; personal budgeting and account keeping. Educational needs of homemakers; opportunities in professional fields of home economics. Formerly 7. Rowntree
110. **Food and Nutrition.** (5) For nonmajors. Food preparation and selection and family meal planning and service with emphasis on nutritive and economic values. Formerly 83. Bishop, Rose
115. **Food Preparation.** (3) Cookery techniques presented in lecture-demonstrations followed by laboratory experience. Food selection, basic cookery, simple meal planning, service, and cost calculation. Formerly 15. Dresslar
119. **Nutrition and Food Preparation.** (5) For student nurses. Laboratory experience in preparation of food and planning and serving meals with study of nutritive needs of different age groups and types. Formerly 9. Johnson
120. **Textiles.** (2) For nonmajors. Comparative study of staple fabrics in cotton, wool, and rayon. Weaves, yarns, fibers, dyes, finishes, textile tests. No credit to those having 125 or 127. Formerly 24. Denny
125. **Textiles.** (3) Relation of raw materials, construction and finish to quality and cost. Identification of fibers, yarns, fabrics. Microscopic and chemical tests. Economic development of textile industry. No credit to those having 120 or 127. Formerly 25. Denny

127. **Institution Textiles.** (3) Textile supplies for hospitals, hotels, and clubs. Specifications for quantity purchasing, laboratory testing of goods. Observation of marking, storage, laundry, and wear in various institutions. No credit to those having 120 or 125. Formerly 26. Denny
130. **Clothing and Textiles.** (5) For nonmajors. Construction using commercial patterns. Planning and selecting a wardrobe. No credit to those having 134. Formerly 84. Warning
134. **Clothing Construction and Selection.** (5) Analysis of student. Selection of clothing and accessories. Wardrobe inventory. Planning and construction of cotton or linen dresses. No credit to those having 130. Formerly 12. Thorson, Warning, Wybourn
215. **Meal Planning and Preparation.** (3) Advanced study of factors involved in food purchasing. The preparation and service of nutritious and attractive meals for families on different economic levels. Pr., 115. Formerly 116. Rose
231. **Clothing Selection.** (2) Choice of clothing, emphasizing appropriateness to personality and occasion as well as judgment of quality and cost. No credit to those who take 130 or 134. Formerly 131. Payne
234. **Costume Design and Construction.** (3) Flat-pattern designing and wool techniques. Original muslin pattern made into wool dress. Study of clothing for children. Pr., 134; Art 109. Formerly 112. Warning, Wybourn
240. **Home Furnishing.** (3) For nonmajors. Color and design; selection and arrangement of furniture and furnishings. Study of fabrics, floor coverings, wall and window treatment and accessories. No credit to those having 343 or 347. Formerly 41. Hosmer
248. **The House, Its Equipment and Management.** (3) The management of time, energy, and equipment in the home as a factor in successful family living. Formerly 141. Johnston
300. **Nutrition.** (2) For nonmajors. Relation of food to the maintenance of health, and its importance to the individual and society. Nutritive values and human needs emphasized. Adaptation of subject matter to needs of school children. Formerly 104. Rowntree
305. **Diet in Health and Disease.** (3) For student nurses. Practical applications of nutrition principles to feeding problems and to dietary modifications necessitated by disease. Pr., 119, organic chemistry. Formerly 105. Johnson
307. **Nutrition.** (5) Chemistry of digestion and metabolism. Food values; human requirements and ways of meeting them at different cost levels. Pr., general chemistry. Formerly 107. Rowntree
315. **Advanced Food Selection and Preparation.** (5; 2 credits for qualified transfer students) Relation of science to cookery. Food preservation. Simple experimental cookery. Meal preparation and service; food budgeting and purchasing. Pr., 215, general chemistry. Formerly 115. Dresslar
316. **Demonstration Cookery.** (3) Techniques and methods adapted to teaching and business. Pr., 215 or permission. Formerly 126. Dresslar
321. **Needlecraft.** (2) Italian embroidery and its application to table and other household linens. History of lace. Pr., 134, Art 109. Formerly 101. Payne
322. **Needlecraft.** (2) National and historic embroideries with application to modern use in the home and in costume. Pr., 134, Art 109. Formerly 102. Payne
329. **Hand Weaving.** (2) Mechanism of looms, warping techniques, designing and weaving with various yarns. Survey of handwoven fabrics and contemporary designers. Formerly 189. Rossbach
332. **Costume Design by Draping.** (2) For art majors. Fabric used as medium to give better understanding of three dimensional aspect of clothing with consideration of texture and motion. No clothing construction. Pr., Art 111. Not offered 1950-51. Formerly 132. Payne
334. **Costume Design and Construction.** (3) Design by draping. Study of clothing production at all price levels. Silk and rayon technique. Pr., 234, junior standing. Formerly 113. Payne, Wybourn
338. **Clothing for the Family.** (3) Based on the needs of the high school clothing teacher. The study of family clothing problems from the standpoint of income, occupation, and health as well as aesthetic and psychological factors; handling of silk and synthetic fabrics; construction to include renovation and children's garments. Pr., 234. Formerly 117. Wybourn
343. **Home Furnishing and Textiles.** (5) For interior design majors. Textiles, their construction, use and care; microscopic and chemical tests. Wall treatments; floor coverings; furniture finishes; accessories; techniques of professional slip cover and curtain construction. No credit to those having 125, 240, or 347. Formerly 146. Hosmer
347. **Home Furnishing.** (5) Selection and arrangement of house furnishings to contribute to family living; wall treatment, floor coverings, fabrics, furniture, accessories, furnishings, budgets. Field trips and special laboratory projects. No credit to those having 240 or 343. Pr., 125, Art 109. Formerly 147. Hosmer
348. **Home-Management House.** (3 for prospective teachers; 2 for all others) Residence in House with opportunity to apply principles of homemaking in money management, keeping of records, care of house, group relationships, food buying, preparation and service. Pr., junior or senior standing. Advance reservation required. Formerly 148. Bishop
350. **Managing Family Finances.** (3) For nonmajors. Planning the use of financial and other resources to further the goals of the family. The connection between outside social and economic conditions and personal financial problems. Formerly 109. Johnston
354. **Family Economics and Finances.** (5) Economic and social conditions affecting the consumer, such as credit, marketing practices; managing family finances in relation to these conditions. Pr., Econ. 200. Formerly 144. Johnston
356. **Family Relationships.** (3) Principles underlying good family relationships, wholesome adjustment of home to changing society. Formerly 145. Rowntree
372. **Institution Food Preparation.** (5) Laboratory and institution practice in large-quantity food preparation and cost control. Pr., 315. Formerly 121. Terrell, Smith

407. **Advanced Nutrition.** (3) Recent research on vitamins, minerals, amino acids and their interrelationships. Methods of utilizing knowledge in public health work and in teaching. Pr., 307, organic chemistry. Formerly 108. Rowntree
408. **Diet Therapy.** (3) Nutrition as curative and preventive factor in disease. Primarily journal readings. Pr., 407. Formerly 191. Johnson
415. **Experimental Cookery.** (3) Food experiments illustrating science applications. Subjective and objective testing of food. Pr., organic chemistry, 315, or permission. Formerly 187. Dresslar
425. **Advanced Textiles.** (3) Tests for textile strength, sunfading, washing, weight, thread count, water repellency, quantitative analysis, microanalysis. Survey of developments in synthetics and finishes, distributive education, research centers, technical and trade organizations, legislation, standardization. Pr., 125, Econ. 200. Formerly 188. Denny
426. **Historic Textiles.** (3) Survey of fabrics through the centuries; their relation to political, religious, economic, and social life of the time. The collections in the department and at Seattle Art Museum furnish material for study. Pr., 347, Art 109, 110, 111, or equivalent. Formerly 198. Denny
433. **History of Costume.** (5) Relationship of fashion of each historic period to its esthetic and social background. National costume collection available for study. Source material for professional designers. Pr., 234, Art 369. Formerly 133. Payne
434. **Costume Design and Construction.** (3) Basic principles of coat and suit construction; comparative costs of ready-to-wear. Pr., 334 or 338, junior standing. Formerly 114 Payne, Wybourn
435. **Advanced Costume Design and Construction.** (5) Flat-pattern drafting, grading, and designing. Pr., 434, Art 369. Formerly 160. Payne
436. **Advanced Costume Design and Construction.** (5) Advanced designing by draping, and custom work. Pr., 435. Formerly 161. Payne
454. **Advanced Family Economics and Finances.** (2) Family adjustment to differing social and economic conditions. Social and other legislation in relation to consumers. Interaction of production, distribution, and consumption of consumer goods. Pr., 350 or 354. May carry graduate credit. Formerly 181. Johnston
457. **Child Nutrition and Care.** (3) Study of physical, mental, and emotional health of children. Experience with parents and children in the Child Nutrition Service and in the Child Health Center. Pr., 300 or 307 or permission. Formerly 190. Rowntree, Wade
472. **Institution Food Purchasing.** (3) Market organization, buying procedures, payment and credit; food selection and care, and inspection of merchandise for those who plan to do institution buying. Pr., 315. Formerly 122. Terrell
473. **Institution Management.** (3) Principles of organization, executive qualifications, characteristic responsibilities for an institution manager. Types of institutions, personnel administration, management controls, planning of work and equipment layout, budget analysis. Professional organizations and ethics presented from standpoint of managers of food service institutions. Open to students in institution administration or by permission. Formerly 123. Terrell
474. **Institution Management.** (5) Food and food service accounting problems. Recording financial transactions; cost controls; profit and loss statements. Pr., 215. Formerly 124. Terrell, Parks
475. **Institution Equipment.** (3) Institution kitchens and serving units; routing of work; equipment selection, operation, and care; repair and depreciation records. Pr., or parallel, 474. Formerly 175. Terrell
495. **Special Problems in Home Economics.** (3) May carry graduate credit. Individual study and research in a chosen area of home economics. Pr., permission. Formerly 195. Staff

Courses for Graduates Only

507. **Readings in Nutrition.** (*) Library research. Pr., 407 or equivalent. Formerly 214. Rowntree, Johnson
515. **Readings in Food Selection and Preparation.** (*) Recent development from professional literature. Formerly 200. Dresslar
554. **Social and Economic Problems of the Consumer.** (3-5) Study of selected topics in the family economics field. Pr., 454 or equivalent, and permission. Formerly 245. Johnston
562. **Home Economics Education.** (*) Critical study of achievements, trends, functions, and relationships. Formerly 202. McAdams
- 576, 577. **Supervised Field Work.** (7, 8) Twelve months of practice and organized classwork for graduates in institution management and dietetics. An administrative dietitian internship approved by the American Dietetic Association. Incidental fee of \$12.50 per quarter. Formerly 196, 197. Terrell
600. **Nonthesis Research.** (*) Field of interest should be indicated by letter when registering. Pr., permission. Formerly 300.
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|--------------------------------|----------|
| A. Costume Design. | Payne |
| B. Institution Administration. | Terrell |
| C. Nutrition. | Johnson |
| D. Textiles. | Denny |
| E. Family Economics. | Johnston |
| F. Foods. | Dresslar |
| G. Education. | McAdams |

Thesis. (9)

JOURNALISM

Professors Everest, Benson, Christian, McKenzie, Mansfield; Associate Professors Frost, Kennedy; Assistant Professors Astel, Brier, Jermain, LaFromboise, Ryan; Director of Laboratories Root; Associates Mohl, Murton; Lecturers Pearson, Jenkins; Instructor Sethria

200. Preliminary News Writing. (5) Structure of the news story, types of news leads, feature stories. Formerly 51. Staff
201. Copyreading. (3) Editing news copy, writing of cutlines and captions, headline writing, newspaper make-up. Pr., 200 or permission. Formerly 84. Staff
220. Fundamentals of Advertising. (3) Survey, fundamentals of strategy, layout, attention devices, appeals, copy, and media. Formerly 130. Frost, Staff
300. Laboratory Work on University Daily. (2-5) Practical work on editorial staff of University of Washington Daily. Journalism majors or permission. (May be repeated for credit to maximum of 15 hours.) Formerly 181, 182, 183. Astel
303. Public Relations. (3) Principles and practice of public relations in business, industry, government, and social agencies. Stresses policy and conduct as fundamentals in good relationships. For upper-division students; for lower-division students with permission. Formerly 165. Christian
304. Magazine Article Writing. (3) Professional nonfiction writing for national magazines, trade journals, and specialized publications. Pr., upper-division standing or permission. Formerly 171. Mansfield, Brier
- †306. Printing Processes. (3) Basic principles of the graphic arts and newspaper make-up. Everest
- †310. Photographic Laboratory. (1) Basic news photography; the photographic process, news camera technique; darkroom practices; planning news pictures. Root
- †311. Printing Laboratory. (1) Use and application of printing materials and techniques, layout of the type case, point system, composing stick, imposition, lock-up, make-up. Root
320. Radio News Writing. (3) Techniques of gathering, writing, and editing news for radio; building news programs. Formerly 136. Ryan
- †326. Contemporary Affairs. (2) Background and significance of international, national, and local newsworthy events. Primarily a discussion course. (May be repeated for credit to maximum of 8 hours.) Formerly 90, 91, 92. McKenzie
- †327. Court Reporting. (3) Covering the courts for the press; legal terminology; legal forms; trial procedures. *
- †328. History of Journalism. (3) Growth and development of the press, with emphasis on journalism in the United States. Jermain
- †329. Law of the Press. (3) Legal regulations governing editorial content of publications. Libel, copyright, rights of access and publication. *
- †330. Reporting. (4) Covering the principal news beats for the press; operations of local government and institutions. Supplemented by downtown assignments. Christian
- †333. Social Implications of Journalism. (3) Comparative study of contemporary dailies from the standpoint of editorial techniques. Study of the editorial and discussion of agencies of communication. Christian
340. Advertising Campaigns and Media. (3) Steps involved in planning and preparing an advertising campaign. Each student will make layouts, write copy, and set up a budget for campaigns. Open only to students taking junior journalism advertising sequence, and to B.A. majors in advertising and marketing, and commercial art majors. Pr., 220 or Marketing 391. Formerly 133. *
341. Advertising Regulation. (2) National, state, and city laws regulating advertising; provisions governing trademarks; rulings of F.T.C., F.C.C., and other official bodies. Pr., or concurrent, 220 or Marketing 391. Formerly 134. *
342. Radio Advertising. (3) Principles of radio broadcasting as they apply to the advertiser; planning a radio campaign; writing announcements and commercial copy. Formerly 135. Ryan
- †346. Advertising Production. (2) Identification and use of physical materials of advertising; production techniques. Murton
- †347. Business Office. (2) Organization and promotion of noneditorial departments of publications; management problems. Frost
- †348. Advertising Layout. (3) Elements of attention, arrangement of the visual elements of display to achieve effective layout—"The advertisement as a picture." Daily assignments. Frost
- †349. Advertising Copy Writing. (2) A companion course to †348. This class considers the wording of the message proceeding from original strategy to the writing of effective advertising copy. Considerable attention to retail copy. Frost
- †350. Advertising Laboratory. (2) Supervision of student efforts in layout, copy-fitting, production specifications. Murton
- †351. Advertising Selling Techniques. (1) Elements of salesmanship applied to advertising space and media selling. Instruction and lab. Frost
- †352. Advertising Selling Laboratory. (2) Experience selling space for University Daily and other campus publications. (May be repeated for credit to maximum of 4 hours.) Staff
- †355. Advanced Advertising Copy Writing. (3) Refinements of basic copy writing, with additional attention to direct-mail and certain retail systems. Frost
- †356. Advanced Advertising Layout. (2) Professional standards applied from rough visuals through finished layouts. Murton

†Courses so marked are open only to majors in Journalism enrolled in the unified third year curriculum or to those enrolled in specific minors in Journalism requiring individual courses within the group. Exceptions to this rule are made only in rare instances and then only with the written permission of the Director of the School of Journalism.

360. *Techniques of Public Relations.* (5) The use of surveys, publicity, advertising, and special events in public relations. Practical work assignments. Pr., 303 and permission. Formerly 167. Christian
370. *Display Advertising.* (3) Layouts and copy writing. Open only to majors in journalism or B.A. majors in advertising and marketing, and commercial art majors. Pr., 220 or Marketing 391. Formerly 131. Frost
371. *Advertising Typography.* (3) Lab course in display advertising. Pr., 370. Formerly 132. *
- 375J. *Principles of High School Journalism.* (3) For teachers in high schools and junior colleges, and School of Education majors taking teaching majors or minors in Journalism. Not open to students who have had Educ. 75J. Pr., 200, 201. Formerly 125. Brier
- 400, 401. *Editorial Problems.* (2, 2) Senior group discussion of current problems in communications; guest lecturers. Pr., completion of Editorial Junior Journalism year. Formerly 190, 191. Everest
440. *Publishing Problems.* (2) Senior group discussion of current problems in advertising and management; guest lecturers, field trips. Pr., completion of Advertising and Management Junior Journalism year. Formerly 192. Frost
460. *Problems in Public Relations.* (2) Each student will do a case study of the public relations of some local business or agency and make a report. Pr., 303 and permission. Formerly 166. Christian
471. *Problems in Magazine Article Writing.* (3) Advanced work in professional nonfiction writing for national magazines, trade journals, and specialized publications. Pr., 304 or permission. Formerly 176. Mansfield
- 473, 474-475. *Short Story Writing.* (5, 5-5) Professional fiction writing for national magazines. Admission only to upper-division students with permission of instructor. Must be taken in sequence, starting in Fall Quarter. Formerly 173, 174-175. Mansfield
480. *Propaganda.* (5) Propaganda as a social and political force; development of propaganda and techniques in nineteenth and twentieth centuries. Emphasis on post-1914 period, and on international propaganda as it affects U.S. Formerly 116. McKenzie
498. *Problems of Journalism.* (2-5, maximum 15) Research and individual study. Upper-division students only. Formerly 199. Staff

Courses for Graduates Only

- 525, 526, 527. *Seminar in Short Story Writing.* (2-4 each qtr.) Advanced professional fiction writing for national magazines. Limited to eight students. Instructor's permission required. (These three seminars may be repeated for credit at discretion of department.) Formerly 225, 226, 227. Mansfield
580. *Seminar in Propaganda.* (5) Study of the crystallization of public opinion and of propaganda techniques. Pr., 460 and permission. Formerly 201. McKenzie
600. *Nonthesis Research.* (3-5) Formerly 301. Staff

LAW

Professors Falknor, Cross, Gose, M. D. Green, Hartsch, Levy, C. E. Martin, Nottelmann, Richards, Shattuck, Sholley, R. L. Taylor; Professor Emeritus O'Bryan; Associate Professor Gallagher; Assistant Professors Hawley, Rieke, Rutledge, Wollett; Lecturer Shofelman; Associate Judges of the Practice Court Hodson, Meahim, Roney, Shorett, Wilkins; Associate Lecturers in Estate Planning Allison, Bernbaum, Cooper, Edwards, Graves; Judson, Karr, Larson, Osburn, Ransom, Redman, Stone

Law courses are taken only by students who have been admitted to the Law School. However, law courses may, with permission, be taken by graduate students for graduate credit.

First Year

All first-year subjects are required

- †100. *Contracts.* A.W.S. (3-3-3) Shepherd, Cases on Contracts. A study of the formation, incidents, and termination of contracts, including mutual assent, consideration, parol, evidence rule, statute of frauds, assignments, beneficiaries, conditions, breach, and remedies. Formerly 101. Shattuck, Rieke
110. *Judicial Administration.* A. (2) Materials to be announced. A study of the judicial system, its structure and operation, including common law pleading, introductory material on equity jurisdiction, and development of code pleading. Gose
120. *Personal Property.* A. (3) Bigelow, Cases and Other Materials on the Law of Personal Property, 3rd ed. First five weeks—study of cases on possession, finders, and satisfaction of judgments as a vehicle of orientation to the study of law; balance of quarter—study of confusion, accession, and fixtures, with continuing emphasis on case preparation and comparison. Formerly 100. Rutledge, Hawley, Cross
- †121. *Real Property.* W.S. (3-3) McDougal and Haber, Property, Wealth, Land: Allocation, Planning, and Development. Real property including estates in land, waste, emblements, easements, licenses, concurrent ownership, and introductory future interests. Formerly 104. Cross, Hawley

† No examination for credit until completion of entire course.

122. **Gratuitous Transfers.** A.W. (1-3) Bigelow, Cases and Other Materials on the Law of Personal Property, 3rd ed.; Mechem and Atkinson, Cases on Wills and Administration, 2nd ed. A study of gifts, wills, intestate succession with emphasis on statutory materials, and basic concepts of the law of trusts. Hawley, Rutledge
130. **Criminal Law.** A.W. (2-2) Harno, Cases on Criminal Law, 2nd ed., and Green, Washington Materials on Criminal Law. A study of the origin and purposes of criminal law; the elements of criminal liability; mental states bearing upon criminal responsibility; such as negligence, specific intent, insanity, and intoxication; solicitation; attempts; and a study of the major crimes. Formerly 105. Green
- †140. **Torts.** A.W.S. (3-3-3) Seavey and Thurston, Cases on Torts. Intended interference with the person or tangible things: the wrong, the defenses, unintended interference with the person or tangible things: negligence, the extent of liability, effect of special relationships, contributory fault, liability without fault; interference with intangibles: misrepresentation, defamation, interference with advantageous relations. Formerly 120. Richards, Wollert
141. **Agency.** S. (3) Keedy and Schiller, Cases on Agency. A general study of the relative status, rights and liabilities of master, servant, principal, agent, and third person arising in consequence of the agency relationship, actual or apparent. Formerly 112. Taylor
160. **Legal Research and Writing.** A.W. (1-1) Materials to be announced. Organization of the library, research technics, preparation of letters, office briefs, and simple legal documents. Gallagher

Second Year

All second-year subjects are required

200. **Sales.** S. (4) Bogert, Cases on Sales, 2nd ed. Transfer of the property interest in goods; subject matter, price and legal formalities; divided property interests; sellers' warranties; remedies of buyer and seller. Formerly 110. Taylor
201. **Bills and Notes.** W. (4) Britton, Cases on Bills and Notes, 3rd ed. Requisites of negotiability; methods of transfer; holder in due course; equities and defenses; liability of parties. Formerly 116. Taylor
- †210. **Evidence.** A. W. (4-4) McCormick, Cases on Evidence. Preparing and presenting evidence; examination of witnesses; admission and exclusion; competency of witnesses; privileges; relevancy; demonstrative evidence; writings; the hearsay rule and exceptions; burden of producing evidence, burden of persuasion, presumptions; judicial notice. Formerly 115. Falknor
211. **Code Pleading.** S. (3) Cathcart and Howell, Cases on Code Pleading, supplemented by the Washington Code and Washington Cases. A study of the nature and function of the code; parties to the code action; general rules of pleading; the complaint; demurrers; the answer; and the reply. Formerly 127. Green
- †212. **Equity.** A. W. (4-4) Walsh, Cases on Equity. Nature of equitable jurisdiction, powers of equity courts, principles governing exercise of equitable powers, injunction against torts, specific performance of contracts, law of vendor and vendee, reformation and rescission for mistake, equitable servitudes on land and chattels. Formerly 114. Nottelmann
220. **Wills.** A. (3) Mechem and Atkinson, Cases on Wills and Administration, 2nd ed. The law of intestate succession, the making and revoking of wills, including testamentary capacity and inducement, the execution of wills, the integration of wills, testamentary character and intent, the revocation of wills, and the operation of wills as affected by subsequent events. Formerly 111. Hawley
- †230. **Constitutional Law.** A. W. S. (3-3-3) Sholley, Cases on Constitutional Law. A study of basic doctrines of American constitutional law as developed by the United States Supreme Court, considered historically, with special emphasis upon the contract, commerce, and due process clauses. Formerly 119. Sholley
240. **Domestic Relations.** S. (3) Shattuck, Washington Materials on Domestic Relations. Marriage, divorce, and annulment; the personal and economic relations of the spouses; and the effect of marriage on the ordinary rules relating to contracts, torts, and crimes. Formerly 113. Rieke

Third Year

All third-year subjects are required

- †300. **Credit Transactions.** A. W. (3-3) Shattuck, Washington Materials on Security Transactions, revised ed., 1947. A study of personal and property security including suretyship, accommodation parties and instruments, pledges, conditional sales, trust receipts, chattel mortgages, real property mortgages, and security assignments of choses in action. Formerly 145. Shattuck
- †301. **Business Associations.** W. S. (4-4) Gilmore, Cases on Partnership, 3rd ed.; Berle and Warren, Cases on Business Organization. A general study of the law of partnerships, corporations, and related forms of business organizations with special attention devoted to the Uniform Partnership Act, the Uniform Limited Partnership Act, the Uniform Business Corporations Act, and other applicable statute laws of the State of Washington and to Washington cases. Formerly 149. Gose
- †310. **Trial and Appellate Practice.** A. W. (3-3) Sunderland, Cases and Materials on Trial and Appellate Practice, 2nd ed., supplemented by Washington Code of Procedure and Washington Cases. Proceedings in the trial of a civil action from the discovery procedure prior to trial to the judgment. Discovery techniques; pretrial hearings; continuances; selection of the jury; conduct of counsel; nonsuits and directed verdicts; instructions; verdict; motion for new

† No examination for credit until completion of entire course.

trial; and judgments. Appellate practice, including methods of review, parties, laying a foundation for review, transferring the case to the appellate court, record on appeal, assignment of errors, briefs, disposition of the case upon review. Each student must participate in the trial of a case in moot court. Formerly 142.

Green, Falknor, Gose, Hodson, Meakim, Roney, Shorett, Wilkins

311. Probate Practice. S. (3) Mechem and Atkinson, Cases on Wills and Administration, 2nd ed., supplemented by the Washington Probate Code and Washington Cases. A study of the practice, procedure, and substantive law involved in the probate of wills and the administration of decedents' estates. Each student is required to draft all papers necessary to carry a typical estate through the entire course of probate or administration and to participate in moot probate hearings conducted in accordance with the Probate Code of the State of Washington. Formerly 144. Gose
- †320. Trusts. A. W. (3-3) Scott, Cases on Trusts, 2nd ed. Nature of a trust, its creation and elements; transfer of interest of beneficiary; resulting and constructive trusts; charitable trusts; administration of trusts; termination and modification; liabilities to, and liabilities of, third persons; business utilization of trust. Formerly 126. Nottelmann
- †321. Property III. W.S. (3-3) Aigler, Bigelow, and Powell, Cases on Property, Vols. 1 and 2. Study of covenants running with the land, adverse possession and prescription, types of conveyances, execution of deeds, descriptions in deeds, covenants for title, estoppel by deed, and recordation. Formerly 123. Cross
330. Administrative Law. S. (4) Gellhorn, Cases on Administrative Law. Legislatures, courts, and administrative discretion. Investigation: contempt power; right to be heard, requisites of a fair hearing. Determination: deciding officers, sub-delegation; findings. Powers: types of action; effect of action. Judicial intervention: timeliness; scope; methods; effect. Promulgation of program, methods of disseminating information and communicating notice; informal dispositions, consent action. Formerly 121. Rutledge
340. The Legal Profession. S. (3) Cheatham, Cases and Materials on the Legal Profession. Examination of the history, nature, and purpose of law, courts, and the legal profession. Problems, obligations, and duties of the lawyer, with special attention to the practice of law, the work of the lawyer in his office and in court, the relationship between lawyer and client, standards and conduct, ethics of the legal profession, and the selection of judges. Formerly 117. Shefelman

Fourth Year

Required Courses

420. Community Property. W. (3) Marsh, Cases on Washington Law of Community Property. Nature and types of community property; management and control, liabilities, power of disposition; effect upon agreements and dissolution. Special emphasis upon Washington law. Formerly 124. Hawley
430. Taxation. A. (5) Griswold, Cases on Federal Taxation, 2nd ed. Federal estate, gift, income and miscellaneous taxes; federal tax procedure. Formerly 146. Harsch
431. Legislation. W. S. (2-2) Read and MacDonald, Cases and Materials on Legislation. Formulation of legislative policy; legislative organization and procedure; statutes and their interpretation. Formerly 135. Harsch
440. Conflict of Laws. A. (5) Cheatham, Dowling, Goodrich and Griswold, Cases and Materials on Conflict of Laws. Domicile, jurisdiction of courts, substance and procedure, choice-of-law rules. Formerly 118. Sholley
- 470 to 498. Seminars and Individual Research Courses. Ten credits required of the following seminars, each carrying 5 credits. Formerly 199.
471. Corporation Practice. A. W. (*, maximum 5) Problems which must be dealt with by the practicing lawyer in forming corporations and in legal supervision of the conduct of their internal affairs. Individual research problems in the field, including forms of capital structure, corporate finance, and general concepts of corporate accounting. Each student must prepare a complete set of corporate papers covering the typical problems which may arise from the time of organization to dissolution. Formerly 199F. Gose
473. Problems in Insurance. A. (*, maximum 5) Selected individual research problems in the field of insurance. Individual reports and group discussion at the seminar meetings, and submission of written paper in final form. Taylor
481. Estate Planning. W. S. (*, maximum 5) A study of the use of wills, trusts, and insurance devices in planning an individual's estate, the impact of federal and state taxation on such devices. Local attorneys, trust officers, insurance underwriters, and accountants discuss the problems arising in their various fields. Each student must prepare an entire estate plan and draft a will solving a designated problem. Formerly 199P. Harsch, Hawley, Allison, Bernbaum, Cooper, Edwards, Graves, Judson, Karr, Larson, Osborn, Ransom, Redman, Stone
484. Social Legislation. W. S. (*, maximum 5) Workmen's compensation, unemployment compensation, Fair Labor Standards Act. Formerly 199C. Sholley
485. Law of Income Taxation. A. W. (*, maximum 5) Selected problems of contemporary significance in the field of federal income taxation. Individual research upon assigned topics. Oral presentation and discussion in seminar meetings followed by preparation of paper embodying results of research. Formerly 199D. Harsch
486. Administrative Law. A. W. (*, maximum 5) Selected problems designed to explore activity on the administrative level and relate it on a comparative legal basis among various types of agencies. Formerly 199E. Rutledge
487. Government Regulation of Business. A. W. (*, maximum 5) Selected problems in the judicial and administrative regulation of unfair competition. Formerly 199H. Rutledge

† No examination for credit until completion of entire course.

488. Labor Relations. A. (*, maximum 5) Special problems involved in the resolution of labor-management disputes, with emphasis on the negotiation and administration of collective bargaining agreements. Formerly 199N. Wollett
489. Labor Law. S. (*, maximum 5) Selected problems concerning the formation and operation of labor organizations assigned for investigation, report, group discussion, and submission of final paper in written form. Formerly 199R. Nottelmann
494. Advanced Problems in Torts. A. W. (*, maximum 5) Problems in torts, selected primarily by the individual student, for investigation, report, and submission of written paper. Formerly 199M. Richards
497. Comparative Law. W. S. (*, maximum 5) Selected problems in the field of private law to be discussed under American and English, French and German laws as the chief representatives of the common and civil law systems respectively. Each student has to report on his specific research problem, submit a final paper, and participate in group discussion concerning other problems. Formerly 199G. Levy

Elective Fourth-Year Courses

410. Damages. S. (3) McCormick, Cases and Materials on Damages. A study of the money judgment as a remedy, with particular emphasis on the principles which control the computation of damages for breach of contract, and for invasion of person or property. Formerly 128. Shattuck
422. Landlord and Tenant. A. (4) Casebook to be announced. Study of farm, residential, and commercial leaseholds, including regulation and taxation problems, special protections for landlord and tenant, use of long-term leases. Cross
432. Labor Law. W. (4) Cox, Cases on Labor Law. Common law theories applied to the formation and operation of trade unions; the use of economic force by unions to attain their objectives, with specific reference to the Sherman Act, the Clayton and Norris-LaGuardia Acts, and relevant sections of the Taft-Hartley Act; the right of the employees to organize and to select a representative for the purpose of collective bargaining as implemented by the National Labor Relations Act (as amended); the duty to bargain collectively; the terms and administration of the collective agreement; the relationship between the bargaining agent and the members of the bargaining unit. Formerly 151. Wollett
433. Municipal Corporations. W. (4) Tooke, Cases on Municipal Corporations, 2nd ed. A study of the law governing the nature, organization, powers, and duties of local governmental units, including both municipal and quasi-municipal corporations and their relation to the state, with special attention to the problems of police power, revenue, indebtedness, property rights, city planning and zoning, and liability in contract, quasi-contract, and tort. Formerly 147. Sheffelman
- †441. International Law. A. W. (3-3) Briggs, The Law of Nations. International law as developed by custom and agreement and as exhibited in decisions of international tribunals and municipal courts. Formerly 122. Martin
442. Admiralty. S. (4) Lord and Sprague, Cases on Admiralty. The admiralty jurisdiction; maritime liens; rights of maritime workers; carriage of goods; charter parties; salvage; general overage; pilotage; towage; collision; limitation of liability. Formerly 141. Richards
450. Modern Civil Law. A. (4) Textbook to be announced. A systematic survey of some fundamental features of that legal system which underlies the present civil codes in practically all civilized countries except Anglo-American jurisdictions. Particular attention will be given to the law of contracts, sales, and negotiable instruments in civil law jurisdictions. Formerly 152. Levy
498. Research Problems in Law. A. W. S. (1-3 each 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 1 to 3 credits for individual research in any of the major fields covered by the curriculum. Formerly 199K. Staff

Not offered in 1950-1951: 400, Insurance; 401, Administration of Debtors' Estates; 411, Restitution; 412, Federal Jurisdiction and Procedure; 421, Future Interests; 434, Trade Regulation; 435, Public Utilities; 451, Roman Law; 460, Drafting of Legal Instruments; 470, Advanced Problems in Security; 472, Corporate Reorganization; 477, Civil and Criminal Procedure; 480, Property Law.

LIBERAL ARTS

Assistant Professor Lutey

101. Introduction to Modern Thought. (5) Man's place in the universe; cosmic origins; origin and nature of life; mind and behavior; values. Formerly 1. Lutey
111. 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. Formerly 11. Lutey

†No examination for credit until completion of entire course.

LIBRARIANSHIP

Associate Professor Gitler; Professor H. C. Bauer; Associate Professor Gallagher; Assistant Professors Bevis, Boughton, Groves, Turner; Associate Stokke; Supervisor, Instructional Materials Center, James W. Brown

All-University Course

100. **The Use of Books and Libraries.** A.W.S. (2) Lectures and discussions with assigned problems illustrating the use of libraries, general reference materials and aids, and reference books of various subject fields. Open to any student but designed primarily for freshmen, sophomores, and new students. Formerly 1. Bevis, Groves, Gitler

Preprofessional Courses †

- †451. **Children's Books.** W.S. (3) 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. Formerly 151. Groves
- †461. **School Library Materials.** A.S. (3) Study of reference materials and basic books in subject fields, with special attention to their use in correlation with the school curriculum. Primarily for teacher-librarians. Formerly 161. Turner
- †463. **Elementary Classification and Cataloging.** A.W. (4) Simple cataloging techniques suitable for the school or small library. Formerly 163. Boughton, Turner
- †464. **Elements of Technical Processes.** W.S. (3) Techniques of acquisition, processing and circulation of library materials. Includes practice in cataloging. Pr., 463. Formerly 164. Boughton, Turner

Professional Courses

Foundations of Librarianship

500. **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. Formerly 200. Gitler
501. **Libraries, Librarians, and Society.** (Part II) S. (2) Continuation of 500. Pr., 500. Formerly 204. Gitler
509. **Directed Field Work.** S. (4) Four weeks—forty hours a week—of field work in varying types of libraries of the Northwest. Professionally supervised. Formerly 209. Gitler

Library Resources and Their Users

- †452. **Story Telling.** A.S. (3) The art and materials of story telling in public libraries, schools, and recreational centers. Folk and fairy tales, myths, epics, picture books, and realistic materials are studied, evaluated, and adapted. Open to undergraduates and nonlibrary school students Autumn Quarter only; for School of Librarianship students Spring Quarter. Formerly 252. Groves
- †462. **Reading of Young People.** A.W.S. (3) Principles of evaluation and selection of books for young people. Study of available materials, sources of information about books and reading interests. Formerly 262. Turner
- †470. **History of the Book.** W. (3) The history of the written and printed book from pre-alphabet days to the present time, including a survey of modern presses and publishing. Formerly 270. Bevis
510. **Evaluation of Library Materials.** A. (4) Sources of information about books, criteria of evaluation for selection, evaluation of general reference materials, procedures of reader's services. Formerly 210. Bevis, Turner
511. **Library Materials in the Humanities and Social Sciences.** W. (3) Survey and evaluation of library resources in the fields noted. Includes reference tools, bibliographies, landmark books, and contemporary literature with reference to the needs of different kinds of readers. Pr., 510. Formerly 211. Bevis
512. **Library Materials in Science and Technology.** S. (3) Continuation of 511. Pr., 510. Formerly 212. Bevis
513. **Government Publications.** S. (2) Study of the government publications of the United States and foreign countries, their acquisition, organization, and use. Formerly 213. Bevis

† Admission to the School of Librarianship is granted only to graduate students except for courses marked †, which are open as electives to upper-division students from other divisions of the University and particularly to those who wish to qualify for teacher-librarian positions in accordance with requirements established by the State Department of Public Instruction.

514. **The Library and Audio-Visual Materials.** A.S. (3) Study of the types, cost, utility, and characteristics of modern sensory aids employed in communicating ideas. Includes organization for handling films, film-strips, recordings and transcriptions, slides, pictures, exhibits, and similar materials in the library; experience in operating various types of equipment; techniques in extending the use of audio-visual materials by community groups and sources of information about materials and equipment. Formerly 214. Brown
540. **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, cooperative bibliographies of law collections. Formerly 240. Gallagher
554. **Children's Literature.** W. (3) Reading and discussion of children's books of all levels; examination of tools and review media for selection with practice in selection for various fields of interest. Pr., 550. Formerly 254. Groves

Methodology, Technical Processes, and Research

530. **Organization of Library Materials: Theory and Principles.** A. (4) The organization of library materials for use, principles of cataloging, classification and subject analysis, study of the Dewey Decimal and Library of Congress schemes of classification. Formerly 220. Boughton
531. **Organization of Library Materials: Comparative Methods.** W. (4) Cataloging practices and methods employed to meet varying needs. Pr., 530, or 463 and 464. Formerly 221. Boughton
532. **Organization of Library Materials: Advanced Problems.** S. (2) Cataloging of special materials; maps, music, microfilm, rare books; special classification schemes. Pr., 531. Formerly 222. Boughton
541. **Selection and Processing of Law Library Materials.** A. (2) Aids to selection, processing, microphotography of legal material, etc. Formerly 241. Gallagher
542. **Legal Reference and Research.** W. (5) Bibliographical lists, law reference questions, briefing, annotations. Formerly 242. Gallagher
599. **Methods of Research in Librarianship.** A. (2) A survey of problems and methods. Formerly 299. Boughton
- 601, 602. **Nonthesis Research.** W.S. (2-4 each) Systematic investigation under faculty direction of a special project approved by the director and the instructors concerned. Formerly 300. Gidder and Staff

Management and Personnel

- †460. **School Library Administration.** A.W.S. (3) Methods of developing a strongly functioning library as an integral part of the school. Planning the library, public relations, personnel, routines involved in care and circulation of materials. Formerly 260. Turner
502. **Library Organization and Administration.** W. (3) Study of public and academic library service including a consideration of legal structure, finance and statistics, buildings and equipment, personnel, public relations and other phases of library management. The extension of library service is also considered. Formerly 201. Bauer
503. **Special Libraries.** S (2) Overview of the organization and establishment of public and private special libraries; the handling of materials, provision for specialized services, finance, personnel and reports. Includes case studies of various special libraries. Formerly 203. Bauer
543. **Law Library Administration.** S. (5) Staff, patrons and public relations, circulation, architecture, book arrangements, equipment, rules, publicity, publications, budgets, reports, professional societies, regional service. Formerly 243. Gallagher
550. **Introduction to Library Service for Children.** A. (3) The philosophy, organization, and administration of the children's department in the public library, together with an examination of its relationship to other social agencies in the community. Formerly 250. Groves
553. **Library Work with Children.** W. (2) Further study of the organization and function of a children's department in a public library. Special attention is given to the study of reference books, periodicals, library publicity, and cooperation with the schools. Includes actual practice in conducting library lessons and book talks. Pr., 550. Formerly 253. Groves

† Admission to the School of Librarianship is granted only to graduate students except for courses marked †, which are open as electives to upper-division students from other divisions of the University and particularly to those who wish to qualify for teacher-librarian positions in accordance with requirements established by the State Department of Public Instruction.

MATHEMATICS

Professors Winger, Ballantine, Birnbaum, Cramlet, McFarlan; Associate Professors Beaumont, Haller, Jerbert, Müllemeister, Zuckerman; Assistant Professors Avann, Brownell, Chapman, Hewitt, Kingston, Paulson, Yagi; Lecturers Leipnik, Tang; Instructors Ball, Dekker, Peterson

Mathematics 101 may be taken concurrently with Mathematics 104, and Mathematics 102 with Mathematics 104, 105, 106, 307.

No credit for Mathematics 101 if one and one-half units of algebra are presented for entrance. No credit for Mathematics 102 if one and one-half units of geometry are presented for entrance.

101. Advanced Algebra. (5) Pr., one year high school algebra. Formerly 1.
102. Solid Geometry. (5) Pr., one year plane geometry. No credit to students who have had solid geometry in high school. Formerly 2.
104. Plane Trigonometry. (5) Pr., one and one-half years algebra, one year plane geometry. Not open to those who have had 151. Formerly 4.
105. College Algebra. (5) Pr., one and one-half years algebra, and qualifying test. Not open to those who have had 152. Formerly 5.
106. Analytic Geometry. (5) Pr., 102, 104, 105. Not open to those who have had 153. Formerly 6.
111. Theory of Investment. (5) Algebra review, percentage, simple interest, compound interest, progressions, ordinary annuities. Pr., one year algebra. Formerly 11.
112. Mathematics of Finance and Insurance. (5) Annuities due, deferred annuities, perpetuities and capitalized cost, sinking funds and amortization, depreciation, valuation of bonds, probability, insurance mathematics. Pr., 111. Formerly 12.
113. Elements of Statistical Method. (5) Numerical and machine computation. Graphical and tabular presentation of data. Averages, measures of scatter, other statistics. Scatter-diagram, least-square lines, regression, correlation. Elements of sampling. Pr., one year algebra, one year plane geometry. Formerly 13.
122. Advanced Algebra and Plane Trigonometry. (5) This course is intended to give the student a minimum preparation in mathematics for beginning science courses. It is primarily for pharmacists. Pr., one year high school algebra and one year plane geometry. Formerly 22.
151. Essentials of Plane Trigonometry. (3) An elementary course in plane Trigonometry. Pr., one and one-half years algebra and one year plane geometry. Not open to those who have had 104. Formerly 51.
152. Higher Algebra. (5) Functions and graphs, linear and quadratic equations, progressions, complex numbers, theory of equations, determinants, logarithms. Pr., one and one-half years algebra and qualifying test. Not open to those who have had 105. Formerly 52.
153. Analytic Geometry and Calculus. (5) The straight line, the circle, the conics. Transformation of coordinates. Limits and continuity, derivative and differential, integration and summation. Pr., solid geometry. Math. 151 or 104, and Math. 152 or 105. Not open to those who have had 106. Formerly 53.
- 154, 155, 156. Mathematics for Architects. (3, 3, 3) Selected topics from college algebra, trigonometry, and analytic geometry. The analytic geometry is especially emphasized. Pr., one and one-half years algebra, one year plane geometry; each course prerequisite to the following course. Formerly 54, 55, 56.
251. Analytic Geometry and Calculus. (5) Polar coordinates, higher plane curves, tangents and normals, graphs and empirical equations, differential and integral calculus. Pr., Math. 153. Formerly 61.
252. Engineering Calculus. (3) Differential and integral calculus. Applications to problems in mechanics. Series, complex numbers, space coordinates. Pr., Math. 251. Formerly 62.
253. Engineering Calculus. (3) A continuation of Math. 252. Partial differentiation and multiple integration. Pr., Math. 252. Formerly 63.
- 307, 308, 309. Differential and Integral Calculus. (5, 5, 5) Pr., 106; 307 for 308, 308 for 309. 307 not open to those who have had 251. Formerly 107, 108, 109.
313. Statistical Inference in Applied Research. (5) Elements of probability; discrete and continuous distributions; binomial, Poisson, normal distribution. Elements of sampling, confidence limits, simple tests of statistical hypotheses. Pr., 104, 105, 106, 113, or permission.
350. Advanced Calculus. (3) Power series, convergence, Fourier series, line and surface integrals. Pr., 253. Formerly 64.
385. Biometrics. (5) Statistical methods applied to biological problems. Pr., 104, 105, 106. Formerly 185.
- 414, 415, 416. Ordinary and Partial Differential Equations. (3, 3, 3) Pr., 309 or equivalent; 414 for 415; 415 for 416. Formerly 114, 115, 116.
- 417, 418, 419. Projective Geometry. (3, 3, 3) Mainly from the analytic point of view. The classical theory through Pascal's theorem, collineations in one and two dimensions, binary forms and algebraic invariants, the conic as a rational curve and as a ternary form, cubic involutions. Pr., calculus unless taken concurrently. Formerly 117, 118, 119. Winger
- 421, 422, 423. Theory of Equations. (2, 2, 2) Complex numbers, properties of polynomials, solution of algebraic equations with real coefficients, symmetric functions. Pr., 309. Formerly 121, 122, 123.

- 452, 453. **Interpolation and Approximation.** (3, 3) Operations on a computing machine, polynomial interpolation by the methods of La Grange, n th order difference, divided differences, and valsepts, remainders, solution of equations, numerical integration of functions and differential equations of first and second orders. Pr., differential calculus, 452 or permission prerequisite for 453. Formerly 152, 153. Ballantine
460. **Vector Analysis.** (5) The calculus of vector functions of position and time, generalized Stokes and divergence theorems, curvilinear coordinates, and elementary applications to mechanics, fluid dynamics, geometry, and electrostatics. Pr., 309 or 252. Formerly 160.
480. **Matrices and Determinants.** (5) The reduction of matrices and forms to canonical form under various groups of transformations. Pr., 309. Formerly 180.
481. **Calculus of Probabilities.** (5) Fundamental concepts. Discrete and continuous random variables. Mathematical expectations. Laws of large numbers. Important types of distributions. Characteristic functions. Central limit theorem. Pr., 309. Formerly 181.
482. **Classical Methods of Statistical Inference.** (5) Universe, sample, parameters, statistics. Point-estimates, confidence-regions. Distributions of classical statistics and their use in estimation and tests of hypotheses. Pr., 480, 481. Formerly 182. Birnbaum
483. **Theory of Correlation.** (5) Multivariate distributions. Variances, covariances, regression, correlation. Specialization of multivariate normal distributions. Sampling of bivariate normal variables. Pr., 482. Formerly 183.
484. **Chi-tests.** (5) The distribution of Chi-square. Its use for testing hypotheses. Contingency tables. Parameters estimated from sample. Some nonparametric methods. Pr., 483. Formerly 184.
- 491, 492, 493. **Higher Calculus.** (3, 3, 3) Selected topics in advanced calculus. Pr., 415. Formerly 190, 191, 192.
- 494, 495, 496. **Introduction to Modern Algebra.** (3, 3, 3) Polynomials, matrices, transformations, introduction to the theory of groups, rings, fields, linear spaces, construction of the number systems of algebra. Pr., 309 for 493, 493 for 494, 494 for 495. Formerly 193, 194, 195.
497. **Seminar in Mathematics.** (2-5) Offered as desired by various members of the staff. May be repeated for credit. Formerly 197.
- Teacher's Course in Mathematics.** (See Educ. 375Q.)

Courses for Graduates Only

All courses numbered above 500 have as prerequisite a full year of differential and integral calculus and the consent of the instructor in charge.

- 514, 515, 516. **Functions of Classical Analysis.** (5, 5, 5) Pr., 492 or equivalent. Selected topics in analysis, special functions, orthogonal functions, differential equations in the complex domain. Formerly 214, 215, 216.
- 524, 525, 526. **Functions of a Real Variable.** (3, 3, 3) Theory of integration with special reference to the integrals of Riemann, Lebesgue, and Stieltjes, measurable functions, properties of functions of a real variable with necessary basic notions concerning real number limits, point sets and their metric properties. Formerly 224, 225, 226.
- 531, 532, 533. **Advanced Topics in Algebra.** (3, 3, 3) Formerly 230, 231, 232. Beaumont
- 544, 545, 546. **Calculus on Variations.** (3, 3, 3) Formerly 244, 245, 246. McFarlan
- 571, 572, 573. **Ordinary Differential Equations.** (3, 3, 3) The first order equation, classifications of solutions as determined from singularities, periodic solutions. Second order equations, Fuchsian type, special equations in the complex field. Pr., 415. Formerly 271, 272, 273. Cramlet
581. **General Theory of Estimation and Testing Hypotheses.** (5) The Neyman-Pearson theory. Maximum likelihood statistics. General theory of confidence regions. Elements of decision theory. Pr., 484. Formerly 281. Paulson
582. **Analysis of Variance and Design of Experiments.** (5) Analysis of variance and covariance to determine factors producing variation. Use of randomized blocks, Latin squares, and other techniques in planning experiments. Pr., 482. Formerly 282.
583. **Multivariate Statistics.** (5) Wishart's distribution. Hotelling's generalized T. Significance of sets of means. Multivariate analysis of variance. Applications to factor analysis. Formerly 283.
584. **Least Squares. Time Series.** (5) Problems of curve fitting. Classical method of least squares. Probabilistic interpretation. Time series. Search for periodical components. Pr., 484. Formerly 284.
585. **Sequential Analysis.** (5) Theory and applications of the recently developed sequential method of testing hypotheses. Applications to acceptance sampling, quality control, census problems. Pr., 482. Formerly 285.
589. **Seminar in Probability and Statistics.** (*) Reports by students and faculty on contemporary research. Formerly 289.
600. **Nonthesis Research.** (*) Pr., permission. Formerly 300.

Variations from the above program for succeeding years will be made by selections from the following courses:

UNDERGRADUATE: Foundations of Algebra, Synthetic Projective Geometry, Solid Analytic Geometry, Finite Differences, Elementary Theory of Numbers, Topics in Applied Mathematics.

GRADUATE: Modern Algebra, Topology, Collineation Groups and Their Invariants, Functions of a Complex Variable, Metric Differential Geometry, Fourier Analysis, Partial Differential Equations, Theory of Relativity, Lattice Theory, Riemannian Geometry.

MEDICINE

Conjoint Courses

- 158-159. Laboratory Procedures. (*) Laboratory procedures in clinical medicine. Formerly 158J-159J. Staff
- 163G. Basis of Neurology. (9) An advanced course in the anatomy of the central nervous system correlated with neuro-physiology. Formerly 163J. Staff
- 256-257. Clinical Medicine. (*) Introduction to clinical medical specialties. Formerly 156J-157J. Staff
- 481G, 482G, 483G, 484G. Regional Surgical Anatomy. (3, 3, 3, 3) An intensive course of lectures and dissection devoted to a certain region of the body, the region to change each quarter as schedule calls for. Formerly 181J, 182J, 183J, 184J. Staff
485. Prevention of Illnesses in Childhood. (*) Observation and participation in the activities of the University Child Health Center. Formerly 185J. Staff
488. Pharmacotherapeutic Conference. (*) Conference on pharmacological applications to therapeutic problems. Formerly 188J. Staff
490. Clinical Hematology. (*) Formerly Internal Medicine 190. Staff

I. BASIC MEDICAL SCIENCES

Anatomy

Professor Bennett; Associate Professors Blandau, Everett; Assistant Professors DeMaris, Johnson, Lasher, Ralph, Skaben; Instructors Henderson, Jensen; Clinical Associate Professor Kellogg; Clinical Instructor Sheridan; Clinical Associates Anderson, Blackburn, Curtis, Eggers, Emmel, Finlayson, Fitzmaurice, Haffy, Henry, Klempner, Lewis, Lindahl, McElmeel, Metzmaker, Norgore, Osmun, Rosellini, Sanderson, Watson

- 128G-129G. Gross Anatomy. (6-4) Gross anatomy for students of the School of Dentistry. Formerly 128-129.
- 130G. Microscopic Anatomy. (4) For students in the School of Dentistry. Formerly 130.
- 131G. Neuroanatomy. (2) For students in the School of Dentistry. Formerly 131.
- 151G-152G. Human Anatomy. (8-8) For students in the School of Medicine. Graduate students, pr., permission of department chairman. Formerly 151-152.
- 155G-156G. Human Embryology. (3-3) For students in the School of Medicine. Graduate students, pr., permission of department chairman.
- 161G-162G. Microscopic and Submicroscopic Anatomy. (4-4) For students in the School of Medicine. Graduate students, pr., permission of department chairman. Formerly 161-162.
- 163G. Basis of Neurology. (See Conjoint Courses.)
- 217JG-218JG. Elementary Anatomy and Physiology. (3-3) For students in the School of Nursing. Others by permission of department chairman. Formerly 117-118.
301. General Anatomy. (3-5) For undergraduates. Not open to pre dental, premedical, or nursing students. Formerly 103.
405. Biological Polarization Microscopy. (4) Theory, technique, and application of polarization microscopy in biological studies. Pr., permission of instructor. (Two lectures, two lab sessions a week.)
410. Cytochemistry. (4) Consideration of the finer distribution of chemical substances in cells and tissues, the methods of cytochemistry, their theoretical basis and validity. Pr., permission of instructor. (Two lectures, two lab sessions a week.)
415. Biological X-Ray Structure Analysis. (3) Theory of X-ray diffraction with particular emphasis on applications to biological systems. Pr., permission of instructor. (Three sessions a week.)
421. Seminar in Molecular and Submicroscopic Anatomy. (2) The molecular and micellar basis of bodily structure. Pr., permission of instructor. (Two sessions a week.)
425. Brain Dissection. (2) A lab course in dissection of the human brain, supplemented by appropriate lectures emphasizing developmental and functional aspects of neurology. Pr., 462J or its equivalent and permission of instructor. (One session a week.)
430. Biological Tracer Techniques. (4) Techniques employing radioactive isotopes as tracers in biological research. Pr., permission of instructor. (Two sessions a week.)
435. Histogenesis and Organogenesis. (2) Lab study and conferences dealing with the ontogenetic maturation of tissues and organs during fetal life. Pr., permission of instructor.
440. Prenatal Anatomy I. (4) A course in dissection of the fetus and newborn emphasizing the thoracic and abdomino-pelvic cavities. Especially designed for students and practitioners of pediatrics.
445. Prenatal Anatomy II. (4) A course in dissection of the fetus and newborn emphasizing the spine and extremities.
450. Prenatal Anatomy III. (4) A course in dissection of the fetus and newborn emphasizing head and neck. Especially designed for students and practitioners of otology, laryngology, ophthalmology, neurology, and pediatrics.
455. Mammalian Reproduction. (3) Consideration of the fundamental processes of reproductive anatomy and physiology of laboratory animals.
460. Connective Tissue Reactions. (2) Consideration of the reactions of the cells of connective tissue under various experimental conditions.
465. Orthopedic Anatomy for Nurses. (4) Surface and functional anatomy for graduate nurses. Formerly 165.
600. Nonthesis Research. (*) Thesis.

Biochemistry

Professors Crosst, Norrist; Assistant Professors Hanabant, Krebs, Kuetber

160
162 Biochemistry. (6) For dental students. Pr., matriculation in the Dental School, or permission. Formerly 127. Krebs, Kuetber

161-162 Biochemistry. (6-6) For medical students. Pr., matriculation in the Medical School or permission. Formerly 167-168. Krebs, Kuetber

161G-162G Graduate study and research in biochemistry is conducted jointly by the Medical School and the Department of Chemistry and Chemical Engineering. For additional courses, see Chemistry, page 231.

Microbiology

Professors Evans, Henry, Weiser; Associate Professor Ordal; Assistant Professors Douglas, Gustafson, Pennington; Associate Duchow

235G. Microbiology for Students of Dentistry. (6 for students of dentistry, 5 for others) Laboratory work for students of dentistry is more extensive than that for other students. Pr., Chem. 232, 10 credits in botany or zoology, and permission. Formerly 135. Staff

236G. Applied Dental Microbiology. (1) Specific applications of microbiology to dental problems are considered. Pr., 235G and permission. Formerly 136. Staff

251G, 252G. Microbiology for Students of Medicine. (*, maximum 6; 6) (Nonmedical students who have had previous work in bacteriology may by special permission be allowed to take course 251G for less than the full 6 credits.) Course 251G includes: 1, a survey of microorganisms and a general consideration of the morphology and physiology of bacteria; and 2, an introduction to immunology, formation and properties of antibodies, nature of antigen-antibody reactions, blood groups, allergies, and an analysis of factors of innate and acquired immunity. During the last part of course 251G and throughout course 252G, specific pathogenic bacteria and viruses are studied in detail. Pr., Chem. 232, 10 credits in zoology or botany, and permission. Formerly 151, 152. Evans, Staff

253G. Medical Parasitology and Mycology. (*, maximum 6) Pr., 251G or equivalent, and permission. Formerly 153. Gustafson, Henry

300. Fundamentals of Bacteriology. (*, maximum 6) A basic course in bacteriology. The comparative morphology, taxonomy, and physiology of bacteria. Pr., 10 credits in botany or zoology, Chem. 232, and permission. Formerly 100. Ordal

* 301. General Bacteriology. (5) A survey course for nonmajors dealing with bacteria and their activities. Pr., Chem. 113 or 116. Formerly 101. *Out of 251G* Pennington

420. Media Preparation. (5) Practical work in the preparation of culture media and solutions. Nutritional requirements of microorganisms are considered. Formerly 120. Duchow

422. Applied Bacteriology. (5) Practical experience in a public health laboratory; 15 hours per week. Permission and letter to laboratory. Formerly 122. Staff

430. Industrial Microbiology. (3 or 5) Microbiological and biochemical aspects of fermentative and oxidative processes of industrial importance. Pr., 300 or 301, Chem. 221, 232. Formerly 130. Douglas

431. Food Spoilage. (3 or 5) Microbiological, enzymatic, and auto-oxidative factors involved in food spoilage. Pr., 300 or 301, Chem. 221, 232. Formerly 131. Douglas

499. Undergraduate Research. (*) Qualified senior students are assigned specific problems in industrial, medical, or general microbiology. Formerly 199. Staff

Courses for Graduates Only

The undergraduate credits in microbiology and permission are prerequisite to all graduate courses. Courses 510, 530, 540, and 550 are offered in alternate years.

510. Physiology of Bacteria. (4) Fundamental physiological and metabolic processes of bacteria. Pr., permission of instructor. Formerly 201. Ordal

520. Seminar. (1) Pr., graduate standing. Formerly 200.

530. Comparative Morphology and Physiology of the Higher Bacteria. (4) (Not offered in 1950-51) Enrichment, isolation, and comparative morphology and physiology of selected representatives of the following groups of bacteria: Nitrobacteriaceae, Rhodobacteriaceae, Caulobacteriaceae, Actinomycetales, Myxobacteriales, Chlamydoxanthales, Caryophanales, and Borrelomycetaceae. Pr., permission. Formerly 206. Ordal

540. Filterable Viruses. (4) (Not offered in 1950-51) Consideration of the physical, chemical, and biological properties of viruses and methods of working with them. Pr., 252G and permission. Histology is desirable. Formerly 202. Evans

550. Advanced Immunology. (*, maximum 4) Pr., 251G and permission. Formerly 213. Weiser

600. Nonthesis Research. (*) Formerly 300.

Thesis. (*)

† In the Department of Chemistry and Chemical Engineering.

All G Courses
get U. D. Cr.

Pathology

Professor Lippincott; Associate Professor Chipps, Ellerbrook, Ricker; Assistant Professor Sheehy; Clinical Associate Professor Spielholz; Clinical Assistant Professors Jensen, Larson, Mason, Ferrini; Clinical Instructors Bitar, Creighton, Jones, Tooley; Research Associates Eriksen, Fong, Peacock, Rhee, Stowell, Thornton

- 231-232. General Pathology. (3-3) For students of the School of Dentistry. Formerly 131.
 251-252-253. General and Special Pathology for Medical Students. (5-5-5) Formerly 151-152-153.
 301. General and Clinical Pathology for Nurses. (2) Formerly 101.
 321. Medical Technology. (5) Formerly 121.
 322. Medical Technology. (6) Formerly 122.
 323. Medical Technology. (6) Formerly 123.
 324. Medical Technology. (6) Formerly 124.
 325. Medical Technology. (6) Formerly 125.
 326. Medical Technology. (16) Formerly 126.
 360. Autopsy Technique. (*) For third- and fourth-year medical students. Formerly 160.
 370. Surgical Pathology. (*) For third-year medical students. Formerly 170.
 376. Clinical Pathological Conference. (*) For third-year medical students. Formerly 176.
 483. Oncology. (2-5, maximum total 20) Formerly 253.
 504. Research in Hematology. (*) Formerly 254.
 520. Seminar. (*) Formerly 200.
 550. Special Pathology. (2-5, maximum total 20) Formerly 250.
 551. Experimental Pathology. (2-5, maximum total 20) Formerly 251.
 552. Clinical Pathology. (2-5, maximum total 20) Formerly 252.
 555. Cytological Diagnostic Procedures for Neoplastic Diseases. (2-5, maximum total 20) Formerly 255.
 600. Nonthesis Research. (*) Formerly 300.

Pharmacology

Professor J. Dille; Associate Professors Farah, Loomis; Clinical Associate R. Dille

234. General Pharmacology. (4) For students of the School of Dentistry. Formerly 134.
 252G-253G. General Pharmacology. (5-4) For students of the School of Medicine. Formerly 152-153.
 301, 302, 303. General Pharmacology. (3, 3, 3) For students of the College of Pharmacy. Formerly 101, 102, 103.
 485, 486. Experimental Pharmacology. (2, 2) For students in the College of Pharmacy. Pr., 301, 302, 303. Formerly 185, 186.
 487. Biological Assays. (2) Pr., 485, 486. Formerly 187.

Courses for Graduates Only

501. Pharmacology Techniques. (4) Formerly 201.
 503. Pharmacology of Cardiac Drugs. (4) Formerly 203.
 504. Pharmacology of Autonomic Drugs. (4) Formerly 204.
 505. Pharmacology of Anesthetic Drugs. (4) Formerly 205.
 506. Human Pharmacology. (4) Formerly 206.
 507. Journal Seminar. (1) Formerly 207.
 508. Research Seminar. (0) Formerly 208.
 600. Nonthesis Research. (*) Formerly 300.
 Thesis.

Physiology and Biophysics

Professor Ruch; Associate Professor Carlson; Assistant Professors Patton, Rusbmier, Skahen; Instructors Amassian, Scher; Research Associate Young; Clinical Associates Crystal, Voegtlin

126. Human Physiology. (6) For students of the School of Dentistry. Three lectures, six hours laboratory, two quiz hours. Formerly 126. Ruch, Staff
 150G-151G. Human Physiology. (4-10) For students of the School of Medicine, and for graduate students by permission. Four lectures, six hours laboratory, two quiz hours. Formerly 150-151. Ruch, Staff
 217JG-218JG. 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 graduate minors by permission. Formerly 117-118. Skahen

416. Biophysics. (5) Study of physiological phenomena in physical terms. Three lectures, one quiz, five hours laboratory. Pr., Zool. 112, Physics 103, Chem. 113 or 116. Formerly 116. Carlson
421. Instrumental Analysis of Cardiac Function. (2) Open to fourth-year medical students. Formerly 180. Rushmer

Courses for Graduates Only

600. Nonthesis Research. (*) Pr., permission. Formerly 300.

Public Health and Preventive Medicine

Professor Powers; Associate Professors Lazarus, Reeves; Assistant Professor Vavra; Clinical Assistant Professors Farner, Horton, Kahl, McGill, Palmquist, Sims; Instructors Freeman, Green; Clinical Instructors Deisher, Dewey, Fountain, Giedt, Jensen, Northrop, Tuttle, Vaughn, Wilkey; Associate Johnston; Clinical Associate McCallister, Robinson; Clinical Affiliates Alridge, Bryson, Drake, Kahn, Reed; Pediatrician & Director Child Health Center Deisher

Courses

- 111G. Public Health Economics. (1) A study of the public medical services and the problems involved in providing adequate medical care. Pr., first-year medical student or permission. Formerly 152. Jared, Powers
- 112G. Introduction to Medical Statistics and Medical Social Problems. (1) Pr., first-year medical student or permission. Formerly 153. Powers
- 272G. Biostatistics. (2) Statistical methods used in the compilation, interpretation, and presentation of medical data. Designed to meet the minimum needs of medical students. Pr., second-year medical student or permission. Formerly 151.
301. Causes and Control of Communicable Diseases. (3) General introductory course, especially designed for students lacking laboratory training. Pr., junior standing or permission. Formerly 118. Lazarus
- 310-311-312. Introduction to Public Health and Preventive Medicine. (1-1-1) A study of public health organization and services. Pr., third-year medical student. Formerly 161-162-163. Powers, Staff
330. Introduction to Environmental Sanitation. (3) A survey of the environmental control of disease transmission. Formerly 101. Green
402. Communicable Disease Control. (3) A study of public health methods of the common communicable diseases, for science majors. Pr., Micro. 235G or equivalent. Formerly 119. Freeman
405. Venereal Disease Clinic. (3) Study of the public health aspects of the control of venereal disease and clinical procedures and treatment. Pr., fourth-year medical student. Formerly 192. Sims
407. Tuberculosis Clinic. (3) Pr., fourth-year medical student. Formerly 193. Fountain
412. Public Health Organizations and Services. (3) A study of local, national, and international public health services. Pr., P.H. 301 or P.H. 402. Formerly 120. Powers
414. Public Health Administration. (3) General principles of organization, public administration, and management in terms of public health services, including discussions and exercises in the use of records, budget making, and methods of appraising health services. Pr., P.H. 412. Formerly 121. Powers
416. Public Health Law. (3) Relationship of public health to law and the legal system; administrative investigation and control; official structure of health agencies; programs and policies embodied in law; rights and liabilities of public health officials. Pr., P.H. 412 or permission. Formerly 138. Rutledge
432. Food Sanitation. (3) A study of public health methods of preventing transmission of disease through food. Pr., P.H. 412. Formerly 104. Green
434. Milk Sanitation. (3) A study of public health methods of preventing transmission of disease through milk. Pr., P.H. 412. Formerly 105. Green
435. Rodent and Insect Control. (2) A study of current practical techniques in controlling rodent and insect factors of disease transmission. Pr., P.H. 412. Formerly 111. Green
438. Environmental Utilities. (2) Plumbing, water, sewage, heating, ventilating, and lighting utilities in buildings; considerations of design and operation for health and comfort. Pr., P.H. 412. Formerly 108. Green
439. Sanitation Facility Design. (4) The study of the mechanical design of public health facilities and sanitation equipment. Pr., P.H. 438. Formerly 109. Green
444. Sanitation and Industrial Hygiene Laboratory. (2) Field and industrial laboratory testing procedures employed by sanitarians and industrial hygienists. Pr., P.H. 439 and 451. Formerly 113. Green
451. Industrial Hygiene. (3) A study of public health methods of prevention of occupational diseases and accidents in industry. Pr., P.H. 412. Formerly 124. McGill
454. Industrial Hygiene. (3) The physician's responsibility in the prevention of occupational diseases and accidents. Pr., fourth-year medical student or permission. Formerly 190. McGill
460. Field Training in Health Education. (5) Six weeks' full time supervised work experience in division of health education in a local official health agency. Pr., permission. Formerly 107. Vavra

461. **School and Community Health Programs.** (5) A study of the organizational structure, function and services of official and nonofficial community and school health agencies with particular attention to the interrelated role of teachers, physicians, nurses, and sanitarians. Pr., junior standing. Formerly 132. **Reeves**
463. **Community Health Education Program.** (3) Trends and problems in community health education including community organization. Pr., P.H. 412. **Vavra**
464. **Community Health Education Techniques.** (2) Practice in using methods and techniques of working with groups—preparation and use of visual education materials for health education. Pr., P.H. 412. Formerly 131. **Vavra**
466. **Problems in Community Health Education.** (5) Study of selected health education programs for their content and methods of giving opportunity for experience in community health education programs. Pr., 463. **Vavra**
470. **Introduction to Public Health Statistics.** (2) Statistical methods used in the compilation, interpretation, and presentation of vital data. Pr., P.H. 412. Formerly 122.
473. **Technical Methods in Public Health Statistics.** (5) Forms, mechanical equipment and instruments for processing and evaluating public health data. The role of the statistician in integrating activities in health departments. Pr., P.H. 470. Formerly 123.
476. **Advanced Public Health Statistics.** (5) Planning and executing problems; sampling; tests for statistical significance and their interpretation. Pr., P.H. 473. Formerly 125.
480. **Public Health Problems.** (2-4) This course is designed to cover special needs of students planning to enter the field of public health who have not had sufficient experience or training in the particular problem. Pr., permission. Formerly 112. **Staff**
485. **Field Practice in Public Health.** (12) A three-months' assignment to a large local health department for supervised application of public health practices. Pr., permission. Formerly 110. **Green, Staff**
490. **Clerkships and Seminar.** (4) The medical student will spend four weeks' full time in various local public health agencies during his senior year. In addition to the above supervised field training and observation the student will be required to complete one social case study for presentation at a weekly seminar before the senior class. Pr., fourth-year medical student. Formerly 170. **Powers, Horton**
495. **Prevention of Illnesses in Childhood.** (3) See Conjoint Courses. Formerly 185J. **Deisher**
496. **Rehabilitation of the Physically Handicapped.** (3) Observation and participation in the activities of the Washington Rehabilitation Center. Pr., fourth-year medical student or permission. Formerly 191.

II. CLINICAL MEDICAL SCIENCES

Dermatology

Clinical Professors Shaw, Parker; Clinical Instructors Bruenner, Campbell, Mumby, Pommerening, Potter, Williams

Internal Medicine

Professor Williams; Associate Professors Finch, Kirby; Instructor Volwiler; Clinical Professors Bannick, Bennett, Bridges, Griffith, Mills, Morion, Palmer, Pearson, Scudder, Spickard, Rankin, Watts; Clinical Assistant Professors Bowers, Capaccio, Chew, Crampton, Davies, Foster, Haviland, Hildebrand, Hynes, King, Krantz, Lincoln, Martin, Sherwood, Soderstrom, Stroh, Voegblin, Zimmerman; Lecturers Ferguson, Jared, Lemere, Rowntree; Clinical Instructors Altonse, Aronson, Bender, Bingham, Camber, Collins, Eggers, Fey, Geraghty, Hanki, Jobb, Johnson, Kidd, Kretzler, Laws, Leede, Lester, Lindahl, McVay, Manchester, Morrow, Narodick, Nelson, Peterson, Richardson, Skubi, Sparkman, Thompson, Weinstein, Wilkinson

151. **Introduction to Medicine.** (1) Formerly 151. **Turner**
152. **Introduction to Public Health Economics and Medical Statistics.** (*) Formerly 152. **Powers**
365. **Clinical Clerkships.** (*) For third-year medical students. Formerly 165. **Staff**
470. **Clinical Clerkships.** (*) For fourth-year medical students. Formerly 170. **Staff**
475. **Externship in General Practice.** (*) Formerly 175. **Staff**
490. **Clinical Hematology.** (*) Formerly 190. (See Conjoint Medical Sciences.) **DeMarsh**
492. **Cardiology.** (*) Formerly 192. **Staff**

Obstetrics and Gynecology

Professor deAlvarez; Senior Consultant and Clinical Professor Thompson; Consultants Bell, Helwig, Rolling, Rotton, Thorp; Clinical Instructors Abnquist, Clancy, Donaldson, Fine, Kimball, Lee, Nuchols, Peterson, Plant, Rutherford, Smith, Stewart; Clinical Associates Campbell, Fiorino, Hauser, MacCamy, Reekie, Schroeder; Clinical Assistants Franklin, Knudson; Associates (part-time) Day, Rice

365. **Clinical Clerkships.** (*) For third-year medical students. Formerly 165. **deAlvarez and Staff**
470. **Clinical Clerkships.** (*) For fourth-year medical students. Formerly 170. **deAlvarez and Staff**

Pediatrics

Professor Seelye; Senior Consultant Durand; Clinical Assistant Professors Cutts, Rembo, Spickard; Assistant Professor Moll; Clinical Instructors Billington, Klein, Evans, P. Guy, Jacqueline, Joy, Tidwell; Clinical Associates Docter, Emerson, Grytbak, M. Guy, Kaplan

365. Clinical Clerkships. (*) For third-year medical students. Formerly 165. Staff
470. Clinical Clerkships. (*) For fourth-year medical students. Formerly 170. Staff
505. Physical Growth of the Well Child. (2) Formerly Peds. 201. Staff

Psychiatry

Professor Ripley; Assistant Professors Fleck, T. H. Holmes, Kaufman; Instructors Chivers, Mangham; Clinical Professor Lemere; Lecturer Heilbrunn; Clinical Instructors Allison, Baker, Bobbitt, Freidinger, Goforth, Haertig, Henderson, Hendricks, Hoedemaker, C. Holmes, Horton, Lasater, Orr, Peters, Riley, Stolzbeise, Strachan, Sugars, Tuckstun, Wortington; Professor of Clinical Psychology in Medicine Sirother

- 100G. Introduction to Human Behavior. (*) Formerly 151. Lemere
110G. Normal Personality Development. (*) Formerly 153. Ripley
200G. Psychopathology. (*) Formerly 154. Ripley
256-257. Clinical Medicine. (See Conjoint Medical Courses.) Staff
300. Lectures, Clinic and Ward Teaching in Psychiatry. (*) Includes both adult and child psychiatry. Formerly 161-162-163. Staff
367. Fundamentals of Clinical Psychiatry. (5) For students in the School of Nursing. Formerly 167. Staff
467. Introduction to Mental Hygiene. (2) Open to seniors and graduate students or by permission of instructor. Formerly 100. Kaufman
468. Psychiatric Principles of Counseling. (2) Pr., 467 or permission of instructor. Formerly 200. Kaufman
470. Clinical Diagnosis and Treatment. (*) Formerly 170. Staff
475. Externship. (*) Assignment to a state psychiatric hospital. Formerly 175. Staff
480. Outpatient Treatment. (*) Staff

Courses for Graduates Only

503. Personality Development. (2) Open to graduate students in psychology and social work and to advanced students in nursing. Pr., permission. Formerly 203. Heilbrunn
504. Personality Development. (2) Open to graduate students in psychology and social work and to advanced students in nursing. Pr., Psychiatry 503. Formerly 204. Heilbrunn
505. Clinical Psychiatry. (2) Open to graduate students in psychology and social work and to advanced students in nursing. Pr., permission. Formerly 205. Heilbrunn

Radiology

Professor Templeton; Clinical Associate Professor Cantrill; Clinical Assistant Professors Addington, Buschke, Carille, Hartzell; Clinical Instructors Roberts, Walker; Senior Consultant Parker; Consultant Hawley

300. Introduction to Radiology. (*) Formerly 151-152-153. Staff
400. Diagnostic Radiology. (*) Formerly 170. Staff
480. Therapeutic Radiology. (*) Radiation Therapy. Formerly 180. Cantrill
481. Advanced Diagnostic Radiology. (*) Formerly 181. Staff

Surgery

Professor Harkins

General Surgery: Professor Harkins; Associate Professor Merendino; Senior Consultants Coe, Dudley, Forbat, Herrmann, King, Lawson, Lyman, Trueblood, Zech; Consultants Baker, Blackman, Bowles, Duncan, Hutchinson, Jarvis, Loe, Lyter, Mullen, Speir, Stone, Metheny, McGowan; Clinical Instructors Crystal, Hall, Hutchinson, Lasber, MacMabon, Pinkham, Ramsay; Clinical Associates Bill, Dirstine, Ego, Florer, Hearne, Hutchins, Lundmark, Rosellini, Sanderson, Sheridan, Watson

Neurosurgery: Associate Professor Ward; Senior Consultant Jacobson; Consultant Haven; Clinical Instructor Stafford; Clinical Associates Klemperer, Phillips

Orthopedic Surgery: Assistant Professor Ray; Senior Consultants Anderson, J. F. LeCocq, Buckner; Consultants Chambers, Edmunds, D. G. Leavitt, H. L. Leavitt, E. LeCocq, McLemore, Tuck; Clinical Instructors Burgess, Duncan, Miller; Clinical Associates Emmel, Rogge, Loughlen, O'Neil, McConville

Urology: Assistant Professor McDonald; Senior Consultant Peacock; Clinical Instructors Tyvan, Yunch, Obman, Jensen, Wyrens, Parker, Nelson; Clinical Associates Eggers, Haverstock, Tyvand

Anesthesia: Consultant Wangeman Clinical; Clinical Associates Compton, Matbwig

Otolaryngology: Consultants *Weber, Asb, Wanamaker, Tolan*; Clinical Instructors *Dorland, Powell, Osman, McElmeel, Campbell*; Clinical Associates *Phillips, Bowers*

Ophthalmology: Consultants *Jensen, Laughlin, Stellwagen*; Clinical Associates *Foxworthy, Haffly, Hanson, Johnson, Sarro, Shlach, Spaulding*

256-257. Clinical Medicine. (See Conjoint Medical Courses.)

365. Clinical Clerkship. (*) For fourth-year medical students. The student works full time for one quarter on the surgical wards with resident and attending staffs and shares responsibility for the care of patients and for the investigation of surgical diseases. Morning: ward rounds, assisting at operations, administration of anesthesia, and history taking. 12:00-1:00: conjoint clinical lectures and clinics. Afternoon: surgical pathology, surgical rounds, lab work, and assisting at dressings. Separate blocks of time for general surgery, neurosurgery, orthopedics, and urology. Autumn, Winter, and Spring Quarters. Formerly 165.

Harkins, Merendino, Ward, McDonald, Ray, and Staff

470. Clinical Clerkships. (*) For fourth-year medical students. The student works up cases in the outpatient department of the King County Hospital and affiliated hospitals, and is encouraged to follow these cases to the wards when they are hospitalized. Outpatient instruction in general surgery, neurosurgery, orthopedics, urology, otolaryngology, and ophthalmology is included. Summer, Autumn, Winter, and Spring Quarters. Formerly 170.

Harkins, Merendino, Ward, McDonald, Ray, and Staff

481-482-483-484. Regional Surgical Anatomy. (See Conjoint Medical Courses.)

Lasher, R. J. Johnson, Sheridan, and Staff

490. Experimental Surgery. (*) A practical operative course to demonstrate the principles and sterile technics of surgery. For second-year students. (Elective.) Formerly 190.

Merendino, Crystal, and Staff

491. Clinical Problems in Surgery. (*) A practical course in observation of difficult and problem cases on the wards of King County Hospital, including a case study. For fourth-year students. (Elective.) Formerly 191.

Harkins and Staff

METEOROLOGY AND CLIMATOLOGY

Professor Church; Assistant Professor Fleagle; Instructor Schallert

101. Survey of the Atmosphere. (5) Composition and structure of the atmosphere; meteorological processes and forms of condensation phenomena; atmospheric motions; tropical and extra-tropical storms. Not open to students who have had Geog. 111. Formerly 1.

Staff

110. Air Masses and Fronts. (3) Characteristics of equatorial, tropical, and polar air masses; air mass motion; fronts and frontal phenomena. Pr., 101 or Geog. 111. Formerly 10.

Staff

250. Meteorological Observations. (2) Technique of weather observations and charting; pilot-balloon observations; measurements at weather station and in the field. Pr., 101 or Geog. 111. Formerly 50.

Staff

321. Physical Climatology. (5) Climatic elements; classifications; collections, use and interpretation of climatic data; physical factors determining the distribution of radiation, temperature, precipitation, pressure and winds. Pr., 101 or Geog. 111. Formerly 121.

Church

322. Regional Climatology. (5) Characteristics of the elements of the various climatic types and the distribution of these types on the continents using both the Koeppen and Thornthwaite classification systems. Pr., 101 or Geog. 111. Formerly 122.

Church

329. Microclimatology. (3) Climates, climatic differences, and climatic characteristics in the lower layers of the atmosphere. Pr., 321. Formerly 129.

Church

340. Physical Meteorology. (5) Mechanics and hydrostatics applied to atmosphere, ideal gases, change of phase, radiation and heat balance, acoustic and electromagnetic waves, atmospheric electricity and magnetism, structure of atmosphere. Pr., one year physics and Math. 307 or permission. Formerly 112.

Fleagle

341. Meteorological Theory. (5) Atmospheric statics, thermodynamics, simple atmospheric motions. Pr., 340 and Math. 303 or permission. Formerly 141.

Fleagle

342. Meteorological Theory. (5) Surfaces of discontinuity, kinematics of air motion, pressure change, circulation and vorticity. Pr., 341 and Math. 309 or permission. Formerly 142.

Fleagle

350. Meteorological Laboratory. (5) Weather-chart construction and analysis; forecasting. Pr., 414 or concurrent with 414. Formerly 150.

Staff

360. Meteorological Instruments. (3) Fundamental principles and errors involved in meteorological instruments in standard use. Pr., calculus. Formerly 160.

Staff

414. Synoptic Meteorology. (5) Analysis of air masses, fronts and cyclones; displacement of pressure systems and fronts; techniques of forecasting. Pr., 342 or permission. Formerly 114.

Staff

415. Synoptic Meteorology. (5) Kinematic analysis; convergence, divergence, and vertical motions; frontogenesis, frontolysis; deepening and filling of pressure centers. Pr., 414. Formerly 115.

Staff

451. Meteorological Laboratory. (5) Weather-chart construction and analysis; forecasting. Pr., 350 or permission. Formerly 151.

Staff

452. Meteorological Laboratory. (5) Additional map analysis. Pr., 451 or permission. Formerly 152.

Staff

462. Oceanographic Meteorology. (6) Given at Friday Harbor only. Energy exchange between atmosphere and ocean, moisture gradients above water surface, marine wind structure. Pr., 342 or permission. Formerly 162.

Church

492. Readings in Meteorology or Climatology. (*) Pr., permission. Formerly 192. Staff
 493. Special Problems in Meteorology or Climatology. (*) Pr., permission. Formerly 193.
 520. Seminar. (2 to 5) Formerly 200.
 541, 542, 543. Dynamic Meteorology. (3, 3, 3) Formerly 241, 242.
 600. Nonthesis Research. (*) Formerly 300.
 Not offered 1950-51: 328, Applied Climatology; 330, Meteorological Statistics; 495, Climatological Statistics.

MICROBIOLOGY

(See page 287)

MUSIC

Professors Chapple, Jacobson, Kinscella, McKay, Munro, Werner, Zetlin; Associate Professors Hall, Harris, Irvine, Lawrence, Normann, Terry, Verrall, Welke, Wilson, Woodcock; Assistant Professors Beale, Bostwick, Creel, Eichinger, Heinitz, Hokanson, Kirchner, Moore, Riegar, Root, Sorenson, Terry; Instructors Cadzow, Cave, Geissmar, Logan, Sokol; Associates Beck, Benno, Cloud, Gibbard, Graf, Horsfall, Lundgren, Martin, Peterson, Phillips, Schardt

100. University Singers.
 Section A. Chorus. (1-1-1, maximum 6) Study, preparation, and performance of oratorios, cantatas, and other large choral works. No prerequisites. Formerly Music 20. Chapple, Lawrence
 Section B. A Capella Choir. (1 each qtr., maximum 6) A capella choir of mixed voices selected from those registered for 100A on basis of audition. Pr., permission. Formerly Music 120. Lawrence
 Section C. Men's Group. (1 each qtr., maximum 6) Pr., permission. Formerly Music 80E. Lawrence
- 101, 102, 103. First-Year Theory. (4, 4, 4) For music majors. Intensive training in basic musicianship: sight reading, ear training, keyboard harmony, creative harmony; elements of counterpoint, analysis, and form. Pr., permission. Formerly Music 21, 22, 23. Staff
104. Sight Reading Laboratory. (0) For music education majors who lack skill in syllable reading. Exemption by examination. Formerly Music 4. Staff
107. Survey of Music. (5) For the general student only. Illustrated lectures with supplementary readings to provide the general student with background for the understanding of common musical forms, idioms, and styles. Formerly Music 7. Kinscella
- 110A. Class Instruction: Piano. (2 each qtr., maximum 6) For those who cannot meet the entrance requirements in piano. Fee \$10. Formerly Music 10AX. Bostwick in Charge
- 110Y. Class Instruction: Piano. (1) Elementary education majors only in the College of Education. Prerequisite for Educ. 377A. Fee \$5. Formerly 10YX.
- 110C. Class Instruction: Voice. (2 each qtr., maximum 6) For music education majors. Fee \$10. Formerly Music 10CX. Root in Charge
- 110Z. Class Instruction: Voice. (1) Elementary education majors in the College of Education to parallel Educ. 377A. Fee \$5. Formerly 10ZX.
- 111, 112, 113. Rhythmic Movement. (1, 1, 1) Muscular coordination and association with musical rhythms. Formerly Music 11, 12, 13. *
117. Music Appreciation: Symphonic Music. (2) For the general student only. Illustrated studies aimed at increasing the understanding and enjoyment of symphonic music of different periods. Formerly Music 17. Kinscella, Sokol
118. Music Appreciation: Modern Symphonic Music. (2) For the general student only. General survey of orchestral music since 1900. Formerly Music 18. Kinscella, Sokol
119. Music Appreciation: Opera. (2) For the general student only. Special attention to Metropolitan broadcasts. Formerly Music 19. Kinscella
121. Elementary Music Theory. (2) For the general student only. Practical information for the amateur on the theoretical background of music. Formerly Music 1. Staff
- 124, 125, 126. Orchestral Instruments Laboratory. (1, 1, 1) Class instruction in violin and viola for music education majors. Formerly Music 24, 25, 26. Kirchner, Sokol
130. Vocal or Instrumental Instruction. (2 or 3 each qtr., maximum 18) For those not majoring in applied music. Pr., examination. Fees: \$25.00 for 2 credits or \$37.50 for 3 credits. Formerly Music 30. *
- 131, 132, 133. Piano Sight Reading Laboratory. (1, 1, 1) For piano and organ majors. Exemption by examination. Formerly Music 31, 32, 33. Moore
140. University Band. (1 each, maximum 6) Parallels University Concert Band. For the improvement of technique. Formerly Music 40. *
150. Vocal or Instrumental Instruction. (3 or 4 each qtr., maximum 24) One or two individual half-hour lessons per week; weekly studio class in interpretation; and one two-hour class per week in sight reading or repertory. Detailed description of the course may be obtained on application to the Secretary of the School of Music. Fee, \$25.00 for 3 credits or \$37.50 for 4 credits. The teacher is designated by a number subjoined to the section letter, and both must be used in all registration procedure. Formerly Music 50.
- A. Piano. Jacobson (A1), Creel (A2), Woodcock (A3), Bostwick (A4), Normann (A5), Geissmar (A6), Hokanson (A7), Moore (A8).
 B. Violin or Viola. Zetlin (B1), Sokol (B2).

- C. Voice. Werner (C1), Lawrence (C2), Wilson (C3), Cave (C4), Root (C5), Harris (C6).
- D. Violoncello. Kirchner (D1), Heinitz (D2), Martin (double bass, D3).
- E. Organ. Eichinger (E).
- F. Woodwind. Horsfall (flute, F1), Benno (oboe, F2), Phillips (clarinet, F3), Peterson (bassoon, F4).
- G. Brass. Schardt (horn, G1), Welke (trumpet, G2), Cloud (trombone, G3).
- H. Harp. Graf (H1), Beck (H2), Lundgren (H3).
160. University Orchestra. (1 each qtr., maximum 6) Parallels University Symphony Orchestra. For the improvement of technique. Formerly Music 60. Kirchner
180. Chamber Music. (1 each qtr., maximum 6) Small instrumental and vocal groups. Formerly Music 80.
- Section A. Piano. Jacobson
- Section B. String. Heinitz, Zetlin
- Section C. Madrigal. Hall
- Section D. Opera. Chapple
- Section E. Organ. Eichinger
- Section F. Woodwind. Normann
- Section G. Brass. Welke
- Section H. Small vocal ensembles. Terry
181. Music Theory Laboratory. (4) Refresher course in basic skills. Suitable for students who need a thorough review. No student may receive credit for both 181 and 101, 102, 103. Formerly Music 81. *
- 201, 202, 203. Second-Year Theory. (4, 4, 4) For music majors. Music 207, 208, 209 to be taken concurrently. Pr., 103. Formerly Music 71, 72, 73. Staff
- 207, 208, 209. Music Literature (Second Year). (2, 2, 2) For music majors. To be taken concurrently with 201, 202, 203 (theory). Two lectures and one listening hour. Periods of music history as exemplified in the works of important composers. Pr., 103. Formerly Music 77, 78, 79. Staff
- 211, 212, 213. Advanced Rhythmic Movement. (1, 1, 1) Muscular coordination and association with musical rhythms. Pr., 113. Formerly Music 61, 62, 63. *
- 224, 225, 226. Orchestral Instruments Laboratory. (1, 1, 1) Class instruction for music education majors. 224: violoncello and bass; 225: woodwind; 226: brass. Formerly Music 34, 35, 36. Kirchner, Sokol, Normann, Welke
- 244, 245. Orchestra Laboratory. (1, 1) May count as ensemble credit. To be taken concurrently with 484, 485 by music education majors. Formerly Music 64, 65. Kirchner, Sokol, Welke
- 254, 255. Advanced Orchestral Instruments (2 each qtr.) Wind, string. Formerly Music 75, 76. Kirchner, Welke
300. University Singers. (1 each qtr., maximum 6)
- Section B. A Capella Choir. A capella choir of mixed voices selected from those registered for 100A on basis of audition. Pr., permission. Formerly Music 120. Lawrence
- Section C. Men's Group. Pr., permission. Formerly Music 180E. Lawrence
- 301, 302. Contemporary Idioms. (3, 3) An analytical study of present-day composition techniques. Formerly Music 131, 132. McKay
304. Choral Literature. (2) Singing and analysis of contrapuntal music; techniques of interpretation. Pr., Music 203 or permission. Formerly Music 104. Hall, Terry
- 307, 308, 309. Music Literature and History. (3, 3, 3) 307: classic period; 308: early romantic; 309: late romantic. Pr., 203, 209. Formerly Music 127, 128, 129. Terry
- 311, 312. Modal Counterpoint. (3, 3) Studies in sixteenth-century style. Music 304 to be taken concurrently. Pr., 203, 209. Formerly Music 101, 102. Creel
314. Music in Broadcasting. (3) Program planning, adaptation and selection of music for various types of broadcasts, development and care of score and record library. Pr., 107. Formerly Music 114. Welty
324. Elementary School Music. (4) Development of the music program in the elementary grades. Pr., 104. Formerly Music 124, 125. Sorensen
326. Junior High School Music. (2) The psychology of adolescence in relation to music; the changing voice; presentation of part song; appreciation; analysis of materials. Pr., 324. Formerly Music 126. Hall
330. Vocal or Instrumental Instruction. (2 or 3 each qtr., maximum 18) For those not majoring in applied music. See description for Music 150. Fee, \$25.00 for 2 credits or \$37.50 for 3 credits. Formerly Music 130. *
- 331, 332, 333. Keyboard Transposition and Improvisation. (2, 2, 2) Pr., permission. Formerly Music 121, 122, 123. Beale
- 334, 335, 336. Accompanying. (2, 2, 2) Study and performance of music of different types and periods. For voice or instrument in combination with piano. Formerly Music 144, 145, 146. Woodcock
340. University Concert Band. (1 each qtr., maximum 6) Audition required. Formerly Music 140. Welke
347. Music in the Americas (3) The seventeenth, eighteenth, and nineteenth centuries. Contribution of music to church and social life in various sections of the western hemisphere during

seventeenth and eighteenth centuries. A study of American composition during the eighteenth and nineteenth centuries, through performance. Pr., junior standing. Formerly Music 147.

348. *Music in the Americas.* (3) The twentieth century. Study through performance of American compositions of this period, their idioms and tendencies in widely diversified fields. Survey, use, and influence of folk and regional materials; new trends in music education, composition, and performance in Latin American countries. Pr., junior standing. Formerly Music 148. Kinscella
350. *Vocal or Instrumental Instruction.* (3 or 4 each qtr., maximum 24) See description for Music 150. Pr., examination. Fee, \$25.00 for 3 credits or \$37.50 for 4 credits. Formerly Music 150. Kinscella
354. *Band Arranging.* (2) Includes the study of tone color, range, registers, voicing, transposition, fingering, arranging, transcriptions. Pr., 203, 245. Formerly Music 154. Welke
356. *Instrumental Music in the Schools.* (2) Methods of instruction; organization; equipment; instrumentation; rehearsal techniques; materials; technical problems of the various band and orchestra instruments. Pr., 203, 245. Formerly Music 156. Normann
357. *Church Music.* (2) Comprehensive survey of the chant, hymn, anthem, solo, and small ensemble. Pr., 385. Formerly Music 157. Root
360. *University Symphony Orchestra.* (1 each qtr., maximum 6) Audition required. Formerly Chapple, Munro, Kirchner
361. *Musical Forms.* (5) Analysis and composition exercises in smaller forms; analysis of larger forms. Pr., 203. Formerly Music 112. Woodcock

Courses for Seniors and Graduates

- 380 *Advanced Chamber Music.* (1 each qtr., maximum 6) Selected instrumental and vocal groups. Pr., permission. Formerly Music 180.
- Section A. Piano Jacobson
Section B. String Heinritz, Zedlin
Section C. Madrigal Hall
Section D. Opera Chapple
Section E. Organ Eichinger
Section F. Woodwind Normann
Section G. Brass Welke
Section H. Small vocal ensembles Terry
- 384, 385, 386. *Conducting.* (1, 2, 1) Designed to coordinate all phases of this art; score analysis; musical styles; hand and baton technique. Pr., 304. Formerly Music 134, 135, 136. Chapple, Munro, Kirchner
- 391, 392, 393. *Composer's Laboratory. First Year.* (3, 3, 3) Pr., permission. Formerly Music 141, 142, 143. McKay, Cadzow
- 407, 408, 409. *Music Literature and History.* (3, 3, 3) 407: Middle Ages; 408: Renaissance and Baroque; 409: Contemporary. Pr., 203, 209. Formerly Music 187, 188, 189. Irvine, Munro, McKay
- 411, 412. *Counterpoint.* (3, 3) Studies in polyphonic composition, including canon, invention, and fugue. Formerly Music 151, 152. Verrall
- 434, 435, 436. *Piano Teaching.* (2, 2, 2) Survey and study of teaching material; supervised practice teaching. Formerly Music 164, 165, 166. Woodcock
450. *Vocal or Instrumental Instruction.* (2 or 3 each qtr., maximum 18) See description for Music 150. Fee, \$25.00 for 2 credits or \$37.50 for 3 credits. Formerly Music 170. *
460. *Sinfonietta.* (1 each qtr., maximum 9) Pr., audition. Chapple
- 461, 462. *Orchestration.* (3, 3) The technique of writing for orchestra and other large ensembles, with an analytical and historical approach to problems of organization and sonority. Pr., 312, 361. Formerly Music 161, 162. Cadzow
467. *History of Keyboard Music.* (3) Survey, development of organ, clavichord, harpsichord, and piano; idioms of corresponding types of keyboard music, and styles of performance through four centuries. Study of representative music of each instrument and period through performance. Pr., 361. Formerly Music 167. Kinscella
- 477, 478, 479. *Undergraduate Seminar in Music History.* (3, 3, 3) Pr., permission. Formerly Music 197, 198, 199. Irvine
- 484, 485, 486. *Advanced Conducting.* (2, 1, 1) Includes workshop experience with choral and instrumental ensembles. Formerly Music 184-185-186. Chapple, Munro, Welke
- 491, 492, 493. *Composer's Laboratory, Second Year.* (3, 3, 3) Formerly Music 191, 192, 193. McKay, Verrall
495. *Choral Conducting.* (3) Formerly Music 195. Munro

Courses for Graduates Only

- 507, 508, 509. *Seminar in Music Literature.* (3, 3, 3) Irvine, Munro
- 524, 525, 526. *Seminar in Music Education.* (3, 3, 3) Selected topics in secondary school music and supervision. Pr., permission. Formerly Music 230. Munro, Sorensen
550. *Vocal or Instrumental Instruction.* (2 or 3 each qtr., maximum 18) Pr., 30 credits in the same branch of music. See description for 150. Fee, \$25.00 for 2 credits or \$37.50 for 3 credits. Formerly Music 220. *

- 577, 578, 579. Seminar in Musicology. (3, 3, 3) Selected topics in music history, literature, and theory. Pr., permission. Formerly Music 233. Irvine
- 591, 592, 593. Graduate Composition. (*) Independent composition in larger forms to include compositions submitted as thesis. Formerly Music 240. McKay, Verrall
600. Nonthesis Research. (2-5) Individual study. Pr., permission. Formerly 300. Irvine, Munro
- Thesis. (*)

NURSERY SCHOOL

Assistant Professors Evans, Williams; Instructor Alliger; Associate Winn

305. **Personality Growth of the Preschool Child.** (3) Developmental trends and age-level expectancies with emphasis on the child from two to six years; motor controls, adaptive behavior, communications, personal-social adjustments. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., Psych. 100. Offered Autumn, Winter, Spring. Formerly 101. Winn
306. **The Child and the Parent.** (3) Interpretations of common behavior manifestations of preschool children, individual and group, with discussion of possible causes and treatment. Parent-child relationships. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 305. Offered Winter, Spring. Formerly 102. Williams
311. **Books and Stories in the Nursery School.** (2) Analysis of books and stories based on verbalizations, comprehension, attention span and age-level differences of young children. Techniques in meeting individual and group needs. Two hour lab. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 306. Offered Autumn. Formerly 107. Winn
312. **Music in the Nursery School.** (2) Study and analysis of songs and rhythms suitable for the preschool child. Development of techniques for fostering creative expression in young children. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 306. Offered Winter. Formerly 108. Alliger
313. **Creative Play in the Nursery School.** (5) Study of the function of play at the nursery school level. Selection and arrangement of toys, equipment and materials to meet developmental needs. Preparation, presentation, guidance, and interpretation of the child's use of materials; opportunity for student use under similar circumstances. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 306. Offered Spring. Formerly 111 and 112. Winn
320. **Nursery School Practice Teaching.** (5) Scheduled participation in group guidance of the preschool child. Development of techniques and skills. Individual conferences. Morning schedule for teaching must be arranged with staff prior to registration. Permission. Pr., 306. Offered Autumn, Winter, Spring. Formerly 117. Staff
321. **Nursery School Curriculum and Methods.** (3) A laboratory analysis of the nursery school program. Formulation and adaptation of a program to meet age-level differences, individual and group needs. Teacher-relationships. One hour each week between 9 and 12 must be kept free for observation in the nursery school. Pr., 306 to be taken with 320. Offered Autumn, Spring. Formerly 103. Alliger
322. **Guidance of Individual Children in the Nursery School.** (2) Staffing individual children; analysis of procedures and techniques used in group situations; study of child-parent relationships. Attendance at parent group meetings required. Two weekly conferences. Pr., 306. To be taken with 320. Formerly 109. Evans
330. **Advanced Nursery School Practice Teaching.** (5) Program planning, organization, and administration. Techniques in working with children. Concepts of parent-teacher-child relationships. Individual conferences. Permission. Pr., 320. Offered Autumn, Winter, Spring. Formerly 118. Staff
331. **Nursery School Parent Counseling.** (2) Reading and discussion of various methods used in parent counseling; case studies. Attendance at parent group meetings required. Two-hour weekly conference. Pr., 320. To be taken with 330. Formerly 113. Williams
332. **Group Guidance of Preschool Children.** (2) Study of techniques and skills used in group guidance and management; procedures in meeting individual needs as related to groups and group development. Pr., 320. To be taken with 330. Staff
351. **Organization and Administration of the Nursery School.** (2) Discussions of problems in planning programs and operating nursery schools. Special consideration of costs, equipping, staffing. Pr., 330. Offered Spring. Formerly 155. Williams
355. **Nursery School Participation and Special Problems.** (2-5) Individual study and readings with special observations and/or participation in the laboratory school; scheduled conferences. Pr., permission. Offered Autumn, Winter, Spring. Formerly 104. Staff

NURSING

Professors Soule, Leaby; Associate Professors Olcott, Tschudin; Assistant Professors Boyle, Burke, Cross, Eklind, Glynn, Hoffman, Morgan, Patterson, Smith, Svelander; Instructors Airth, Anderson, Bise, Blackburn, Blackman, Bruggeman, Carnevali, Chingue, Crouch, Dean, Dudley, Elwood, Felton, Floyd, Forsberg, M. Gray, Haase, Hammond, Jabucke, Jamison, Jensen, Kasper, Kintner, Lankford, Linburgh, Luby, Lucey, Lyons, McCorkle, McKey, MacLvor, Mitchell, Pinyan, Stamatakis, Stone, Thompson, Tillotson

100. **Care and Prevention of Illness in the Home.** (3) A study of health and safety factors in the home and community; recognition of early symptoms of physical or mental illness as an important factor in the prevention of disease or disability. First aid in the home; conditions

- commonly treated at home; giving medications and supportive treatments; care before and after pregnancy; infant care; child growth and development; common psychological reactions to illness or disability; choosing a doctor and hospital; consideration of community health resources. Formerly 5. Anderson, Cross
220. **History of Nursing.** (3) A study of nursing from earliest times with emphasis on the place of nursing in world history and the present social order. Open to any woman student. Formerly 1. Leahy
225. **Introduction to Clinical Nursing.** (3) Orientation to hospital situation. Elementary nursing skills. One lecture, two 2-hour lab periods weekly. Students live in residence; assist staff nurse twenty hours weekly for maintenance. Not open to students who have had Nursing 291. Formerly 119. Felton, Floyd
290. **Elementary Nursing Arts.** (4) Continued elementary nursing techniques and patient care. Two lectures, one 2-hour lab period, and four hours of weekly supervised practice in the hospital. Basic curriculum. Not open to students who have had Nursing 291. Formerly 118. Felton, Floyd
291. **Principles and Practices of Elementary Nursing.** (5) Elementary nursing techniques; practice in elementary nursing care. Two lectures, two 2-hour lab periods, and four hours of supervised clinical practice weekly. Basic curriculum. Not open to students who have had Nursing 225, 290. Formerly 120. Felton, Floyd
295. **Advanced Nursing Procedures and Methods of Planning Individualized Nursing Care.** (3) Advanced general nursing procedures. Clinical nursing care study. Practice in planning nursing care with reference to physical, emotional, social, and economic needs of patient. Basic curriculum. Formerly 121. Felton, Floyd
296. **Principles of General Medicine, Surgery, Otolaryngology, and Nursing Care.** (5) Survey of these fields with etiology, pathology, symptoms, complications, treatment, prevention, and specialized nursing care of each condition. Medical lectures, nursing demonstrations. Recording, nomenclature included. Basic curriculum. Formerly 124. Blackburn, Carnevali, Elwood, Thompson
297. **Practice in Elementary Nursing and Special Hospital Departments.** (2) Elementary surgical nursing practice correlated with laboratory, X-ray, pharmacy, and central supply experience. Basic curriculum. Formerly 122. Felton, Floyd
300. **Principles of Medical and Surgical Specialties and Their Nursing Care.** (5) Survey of fields of gynecology, endocrinology and metabolism, dermatology, neurology, orthopedics, first aid, and ophthalmology. Includes etiology, pathology, symptoms, complications, treatment, prevention, and specialized nursing care of each condition. Medical lectures, nursing demonstrations, clinics. Recording and nomenclature. Basic curriculum. Formerly 125. Carnevali, Elwood, Lucey, Thompson
301. **Medical Nursing Practice.** (5) Application of principles of nursing in medical diseases. One quarter's experience in general medical nursing including geriatrics and related OPD clinics, case assignment, weekly clinic and conference. Basic curriculum. Formerly 128. Blackburn, Thompson
302. **Principles of Preventive Medicine and Nursing Care in Communicable Disease.** (4) Etiology, modes of transmission, symptomatology, complications, treatment, methods of prevention and control in acute communicable and venereal diseases. Emphasis on medical aseptic technique and specialized nursing care as it relates to community health. Orientation to other community agencies concerned. Medical lectures, nursing demonstrations, clinics. Basic curriculum. Formerly 130. Blackburn, Dudley
303. **Operating Room Practice.** (5) One quarter's experience in operating room nursing including care of the anesthetized patient. Weekly clinic and conference. Basic curriculum. Formerly 133. Hammond, Pinyan
304. **Principles of Special Therapy.** (2) The use of light, electricity, heat, water, massage, exercise, and occupation for the prevention, care, and rehabilitation of disability. The interrelationship of nursing, physical therapy, and occupational therapy and the correlated and cooperative responsibilities of personnel for patient care. Basic curriculum. Formerly 129. Anderson
305. **Communicable Disease Nursing and Dietary Practice.** (5) One quarter's experience including four weeks of segregated acute communicable disease nursing, one week in formula room, and six weeks in diet therapy practice. Weekly clinic and conference. Basic curriculum. Formerly 126. Blackburn, Dudley, Forsberg, Northrop
306. **Surgical Nursing Practice.** (5) One quarter's experience in general surgical nursing including orthopedics, emergency and admitting departments, physiotherapy, and related outpatient clinics. Weekly clinics and conference. Basic curriculum. Case assignment. Formerly 132. Carnevali, Elwood, Lucey
330. **Principles of Obstetrics and Obstetric Nursing.** (5) Anatomical, physiological, and psychological aspects of prenatal and postpartum periods. Care during normal, operative, and complicated labor. Nursing care of mother and baby in home and hospital. Introduction to community agencies concerned with prenatal care. Medical lectures, nursing demonstrations. Basic curriculum. Formerly 141. Lankford, Linburgh
331. **Obstetric Nursing Practice.** (6) One quarter's experience in obstetric nursing. Nursing care of patients during prenatal, labor, postpartum periods, including care of the newborn. Experience in prenatal and postpartum clinics. Case assignment, weekly clinic and conference. Basic curriculum. Formerly 142. Lankford, Linburgh, Lyons
332. **Principles of Pediatrics and Pediatric Nursing.** (5) Development of well children; principles of care. Prevention of illness. Medical and nursing care of sick infants and children in home and hospital. Introduction to community agencies concerned with child care. Medical lectures, nursing demonstrations. Basic curriculum. Formerly 139. MacIvor

333. **Pediatric Nursing and Nursery School Practice.** (6) One quarter's experience in pediatric nursing including nursery school. Experience in related well-baby clinic. Case assignment, weekly clinic and conference. Basic curriculum. Formerly 140. MacIvor
339. **Introduction to Health Teaching.** (2) Orientation to teaching functions of the nurse in both hospital and community situations. Basic curriculum. Formerly 131. Burke
340. **Public Health Nursing and Community Health Agencies.** (3) Includes study of principles and trends in public health nursing as they affect the responsibilities of the nurse; the organization; the function and interrelation of community health agencies and the basic techniques used by the nurse as a community health worker in planning health programs and in acting as family health consultant and health teacher. Discussion, field trips and demonstrations. Basic curriculum. Formerly 127. Burke
341. **Nursing Practice in Outpatient Department.** (6) One quarter's experience in outpatient clinics. For graduate nurses who wish to supplement experience in basic program. Weekly conferences. Formerly 143. Airth
360. **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. Pr., grad. reg. nurse. Formerly 182. Anderson
363. **Orientation to Psychiatric Nursing and Mental Hygiene.** (2) General introduction and orientation of majors in advanced psychiatric nursing and mental hygiene to special field; role of psychiatric nurse on health team; survey of local, state, and national psychiatric and mental health agencies and other resources. Field trips to local agencies and institutions for observation. Pr., grad. reg. nurse. Formerly 174. McKey
364. **Integration of Mental Hygiene into Public Health Nursing.** (2) The relationship of the nurse to the mental health team and methods of integrating mental hygiene into generalized public health nursing service. Pr., grad. reg. nurse. Formerly 186. McKey
380. **Orientation in Public Health and Community Nursing.** (3) Survey of the field of public health and community nursing including planned field trips. For students in teaching and supervision in schools of nursing. Pr., grad. reg. nurse. Formerly 161. Patterson
381. **Principles, Organization, and Administration of Public Health Nursing.** (3) Policies and developments in national, state, and local public health nursing services in official and non-official agencies. Pr., grad. reg. nurse. Formerly 167. Leahy
382. **Field Practice in Public Health Nursing.** (5) Health teaching and nursing. Formerly 162. Patterson
383. **Field Practice in Public Health Nursing.** (5) Administrative activities and record work. Formerly 163. Patterson
384. **Field Practice in Public Health Nursing.** (6) Family health planning. Use of social agencies and maintenance of community relationships. 382, 383, 384 must be taken concurrently. Formerly 164. Patterson
- †400. **Principles of Psychiatry and Psychiatric Nursing.** (5) Major concepts of psychiatric nursing and mental health used in planning the nursing care of mentally ill patients, including special therapies and rehabilitation measures. Lectures, demonstrations, nursing conferences. Basic curriculum. Formerly 147. Tillotson, Jensen, Bise
- †401. **Psychiatric Nursing Practice.** (6) Practical development of basic principles of psychiatric nursing with supervision for solving selected patient care problems. One quarter of clinical practice with rotations through departments of the mental hospital, that is, men's and women's active and continued treatment, patient services, and special medical and rehabilitative therapies departments. Weekly ward clinics, nursing conferences, psychiatric staff conferences, and written projects. Basic curriculum. Formerly 148. Tillotson, Jensen, Bise
- †402. **Principles of Tuberculosis Nursing Care.** (2) Including use of special therapies, rehabilitation, prevention and control, public health, and social aspects. Lectures and demonstrations. Basic curriculum. Formerly 136. Haase
- †403. **Tuberculosis Nursing Practice.** (3) Supervised experience in developing nursing care principles for solving selected problems in care of tuberculosis patients. Five to six weeks of clinical practice in the medical and surgical treatment of tuberculosis with planned rotation through the department in a tuberculosis sanatorium including use of community agency and clinic. Includes weekly ward clinic, nursing conference, nursing project, and staff conference. Basic curriculum. Formerly 145. Haase, Blackman
- †404. **Nursing Practice in Surgical Specialties.** (3) Five to six weeks of experience in urology, gynecology, EENT, head injury, and emergency surgical nursing. Case assignment, weekly clinic and conference. Basic curriculum. Formerly 134. Carnevali, Elwood, Lucey
- †405. **Generalized Nursing in the Community.** (3) Presentation and analysis of community and family health problems by means of selected family case studies; consideration of health problems, community programs, and nursing techniques utilized in such areas as morbidity, health supervision, and care of the handicapped. Runs concurrently with Nursing 406. Basic curriculum. Formerly 135. Burke, Patterson
- †406. **Visiting Nursing Practice.** (6) One quarter of experience in generalized public health nursing with opportunity to apply basic principles and skills as a community health planner, family health consultant and health teacher in morbidity, including communicable and noncommunicable disease, maternal, infant and child care, mental hygiene, and nutrition. Includes experience in the home, clinics; health conferences in schools and health classes as well as conferences with professional workers in related community agencies. Family case assignment. Basic curriculum. Formerly 146. Bruggeman, Burke, Patterson, and Staff
- †407. **Principles of Ward Management and Bedside Teaching.** (3) Management of ward routines and assistant head nursing including individual and bedside teaching. Basic curriculum. Formerly 149. Jamison

† Does not offer graduate credit.

- †408. **Senior Nursing Practice.** (6) One quarter's advanced nursing practice in one field (of student's choice, if possible). Opportunity for advanced patient care, experience as assistant head nurse, and as team leader. Night duty. Individual projects, weekly conferences. Basic curriculum. Formerly 144. Hoffman, Jamison, Svclander, Staff
- †409. **Professional Problems in Nursing.** (2) Responsibilities of the professional nurse to the community. Study of professional organizations, opportunities in various fields of nursing, legislation, accreditation, and professional literature. Basic curriculum. Formerly 138. Hoffman, Svclander
- †417. **Principles of Teaching Nursing and Health.** (5) Application of principles of learning to teaching methods and techniques effective in nursing with opportunity for course planning, demonstration, and practice teaching. Pr., junior standing. Psych. 100, Educ. 209 or 401, grad. reg. nurse. Formerly 150. Tschudin
- †418. **Supervision of Hospital Departments.** (5) Organization of hospitals for administration of nursing service and education, selection and placement of personnel, principles of supervision, ward management and teaching, methods of student clinical assignment and rotations. Pr., grad. reg. nurse, junior standing. Formerly 152. Olcott, Boyle
- †420. **Advanced Nursing Practice in Medical Nursing.** (3) One quarter planned case assignment experience in advanced medical nursing, including preventive and emotional aspects. Related outpatient department clinics and social agencies. Weekly nursing conferences and clinics. Pr., grad. reg. nurse, junior standing. Formerly 155A. Dudley, Thompson, Jamison
- †421. **Advanced Nursing Practice in Surgical Nursing.** (3) One quarter planned case assignment experience in advanced surgical nursing, including preventive and emotional aspects. Related outpatient department clinics and social agencies. Weekly nursing conferences and clinics. Pr., grad. reg. nurse, junior standing. Formerly 155B. Elwood, Jamison
- †422. **Advanced Nursing Practice in Pediatric Nursing.** (3) One quarter planned case assignment experience in advanced pediatric nursing, including preventive and emotional aspects. Emphasis is placed upon the development and care of the well child. Related outpatient department clinics and social agencies. Weekly nursing conferences and clinics. Pr., grad. reg. nurse, junior standing. Formerly 155C. Jamison
- †423. **Advanced Nursing Practice in Obstetrical Nursing.** (3) One quarter planned case assignment experience in advanced obstetrical nursing, including preventive and emotional aspects. Related outpatient department clinics and social agencies. Weekly nursing conferences and clinics. Pr., grad. reg. nurse, junior standing. Formerly 155D. Linburgh, Jamison
- †424. **Advanced Nursing Practice in Operating Room.** (3) One quarter supervised practice in advanced operating room nursing including the special fields. Weekly nursing conferences and clinics. Pr., grad. reg. nurse, junior standing. Formerly 155E. Hammond, Jamison
- †425. **Advanced Nursing Practice in Tuberculosis Nursing.** (3) One quarter planned case assignment experience in advanced tuberculosis nursing, including preventive and emotional aspects. Related outpatient department clinics and social agencies. Weekly nursing conferences and clinics. Pr., grad. reg. nurse and junior standing. Formerly 156. Haase, Blackman
- †427. **Advanced Outpatient Department and Emergency Nursing.** (3) One quarter planned case assignment experience in advanced outpatient department and emergency nursing, including preventive and emotional aspects. Related outpatient department clinics and social agencies. Weekly nursing conferences and clinics. Pr., grad. reg. nurse and junior standing. Formerly 155F. Airth, Jamison
- †430. **Advanced Psychiatric Nursing and Mental Hygiene.** (3) Practical development of advanced principles of psychiatric nursing with supervision for solving selected patient care problems. One quarter planned experience in selected psychiatric hospitals with men and women patients in active medical and rehabilitative treatment programs. Seminar-clinics, nursing conferences, medical staff conferences. Pr., grad. reg. nurse and junior standing. Formerly 156A. Morgan, Staff
- †433. **Field Work in Mental Health.** (3) Selected supervised experience in a mental hygiene agency. Open only to master's degree students majoring in mental health. Formerly 157A. Morgan, McKey
- †434. **Advanced Orthopedic Nursing Practice.** (3) One quarter supervised experience in selected hospitals to include the care of children and adults with orthopedic conditions; observations in physical therapy, occupational therapy, outpatient clinic and operating room; weekly ward clinic and nursing conferences; planned participation in the integration of orthopedic principles for nonorthopedic hospital patients; field trips to agencies and institutions providing services for the orthopedically handicapped. Pr., grad. reg. nurse, junior standing. Formerly 156D. Anderson, Lucey
- †435. **Practice Teaching and Ward Supervision in Hospitals.** (10) One quarter experience in the student's major clinical field with opportunity for supervised practice in administrative and teaching functions of the head nurse and supervisor, and for interdepartmental observation of hospital departments. Pr., Nurs. 417, 418 or concurrent, and one quarter advanced nursing practice in major field. Upper-division and graduate students. Formerly 154. Staff
- †440. **Special Fields in Public Health Nursing.** (5) Study of the functions, objectives, and programs in the special fields of public health nursing. Formerly 168. Patterson
- †441. **Advanced Field Practice in Public Health Nursing.** (12) Pr., 384. Experience in public health nursing supervision or special fields. Formerly 166. Patterson
- †442. **Teaching Functions of the Public Health Nurse.** (5) Principles of teaching as applied to the individual, to family and group health conferences. Analysis and interpretation of family health studies and methods of teaching health. Pr., 381 and Psychology 100. Formerly 160. Leahy
455. **Administration of Schools of Nursing.** (5) Deals with the principles of organization and functioning of a school of nursing, including selection and organization of the faculty, student selection and welfare, health and guidance programs, curriculum planning and scheduling, and accreditation. Formerly 151. Olcott

† Does not offer graduate credit.

456. **Hospital Administration in Relation to Nursing Service.** (5) Presentation of principles of administration as related to hospitals and nursing service. Includes discussion of selection, assignment and supervision of personnel, techniques for control of equipment and supplies, use of records, organization of the nursing department, and interdepartmental relationships. Formerly 153. Smith
457. **Special Fields in Psychiatric Nursing.** (2) Consideration of the special needs and therapies in the prevention and nursing care of mental illness. Individual assignments. Patients in psychiatric hospitals available for demonstration and teaching. Pr., Nurs. 400, 401, majors psychiatric nursing only. Formerly 172. Morgan
460. **Body Mechanics in Nursing.** (3) The application of the principles of posture and body mechanics to patient care and the performance of nursing activities. Pr., grad. reg. nurse; anatomy and physiology or equivalent. Formerly 181. Anderson
461. **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. Formerly 183. Anderson
462. **Teaching of Nursing Arts and Science.** (3) Study of principles and methods in their application to the specific field of nursing arts teaching. Group development of objectives and course content. Instructional aids. Evaluation of textbooks in the field. Pr., Psych. 100, Nurs. 417. Formerly 185. Hoffman
465. **Survey of Trends in Contemporary Nursing.** (3) Particular emphasis is placed on current problems. Formerly 195. Soule
490. **Principles, Organization, and Administration of Industrial Nursing.** (3) Formerly 178. Jahncke
493. **Public Health Nursing Aspects of Adult Hygiene.** (3) Community facilities and public health nursing care of the adult and aging population. Formerly 170. Leahy
494. **Reading in Current Literature in Public Health Nursing.** (2) Pr., 381 and consent of instructor. Formerly 165. Leahy
496. **Advanced Work in Special Fields of Public Health Nursing.** (3) Group projects in special fields of public health nursing on the basis of student interest. Pr., 381, 440, and permission of instructor. Formerly 193. Patterson
498. **Methods of Supervision in Public Health Nursing.** (3) Principles and methods of supervision in public health nursing and their relation to administration. Pr., preparation and experience in public health nursing and approval of instructor. Formerly 190. Leahy

Courses for Graduates Only

510. **Curriculum Development in Nursing Education.** (5) Includes a consideration of current curriculum patterns and trends in nursing education, the development of curriculum materials and problems in the study and implementation of nursing curriculum. Pr., 417 or equivalent. Formerly 196. Tschudin
- 521, 522, 523. **Seminar in Nursing Problems.** (*) Pr., grad. reg. nurse, 30 credits in nursing. Formerly 201, 202, 203. Soule, Staff
600. **Nonthesis Research.** (*) Open only to qualified graduate students in the field of nursing. Formerly 300. Soule, Staff

OCEANOGRAPHY

Professors T. G. Thompson, Church, Mackin, Robinson, Utterback; Associate Professors Barnes, Martin, Ordal; Assistant Professors DeLacy, Ray, Swan

101. **Survey of Oceanography.** (5) Origin and extent of the oceans; nature of the sea bottom; causes and effects of currents and tides; animal and plant life in the sea. Church
- 401-402. **Physical Oceanography.** (3-3) Nature of the oceans, their physical and chemical properties, processes and currents; interaction with the atmosphere and the sea floor; environmental factors; oceanographic theories, methods, and equipment. Laboratory and field work. Pr., senior standing in physical or biological sciences. Barnes

Courses for Graduates Only

- 501-502. **General Oceanography.** (3-3) Distribution and characteristics of water masses and ocean currents; circulation of inshore waters; waves; oceanographic theories, methods and instruments. Pr., graduate standing in one of physical sciences, or permission. Formerly 201-202. Barnes
549. **Graduate Seminar.** (2 to 6) Formerly 249. Staff
600. **Nonthesis Research.** (*) Formerly 300. Staff

Related Work in Other Departments

Courses in Fisheries. (See Fisheries.)

Courses in Geology. (See Geology 361, 400, 414, 426, 510.)

Courses in Marine Zoology. (See Zoology 433, 434, 539, 600.)

Courses in Meteorology. (See Meteorology 462, 600.)

Courses in Microbiology. (See Microbiology 600.)

Courses in Oceanographical Chemistry. (See Chemistry 421, 422.)

† Does not offer graduate credit.

PHARMACY, PHARMACOGNOSY, PHARMACEUTICAL CHEMISTRY, AND TOXICOLOGY

Pharmacy

Professor Rising; Associate Professor Plein; Lecturer Langenhan; Associate Kerr

- 101-102-103. **Fundamental Principles and Processes of Pharmacy, Elementary Pharmaceutical Preparations.** (3-3-3) One lecture, one quiz, one lab. A study of the practical application of mathematics and physics to pharmacy. Manufacture of U.S.P. and N.F. galenical preparations; development of lab technique; study of the U.S.P. and N.F. Formerly 1-2-3. Langenhan
104. **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. Formerly 4. Langenhan
115. **Home Remedies.** (2) Two lectures. For nonmajors. A study of the remedies and cosmetics preparations commonly used in the home, from the point of view of composition, effectiveness, and safety. Formerly 15. Rising
- 209-210-211. **Prescriptions.** (3-3-3) Two lectures, one lab. A study of the fundamental principles of prescription compounding and dispensing with special emphasis on accuracy and technique. Pharmaceutical Latin and prescription reading are included. Pr., 103, Chem. 110 or equivalent. Formerly 9-10-11. Plein
251. **Elementary Pharmacy.** (2) For nurses only. Two lectures. Survey of fundamental knowledge of the theory of dispensing pharmacy. Formerly 51. Kerr
261. **Pharmacology and Therapeutics for Nurses.** (3) Formerly 61.
- 313-314-315. **Advanced Prescriptions, Professional Pharmacy, Professional Management.** (5-5-5) Two lectures, one quiz, seminar and lab. Principles of management and the laws governing the practice of pharmacy are studied. The divisions of professional pharmacy are discussed under such headings as general practice, veterinary, and dental pharmacy. The advanced techniques in prescription practice are stressed in both lab and lecture. Pr., 211. Formerly 113-114-115. Rising
318. **Pharmaceutical Accounting.** (5) Five lectures. Basic principles of accounting as used in pharmacy with special emphasis on state and federal taxes and deductions. Fiscal reports for comparing business trends under accepted business procedures. Formerly 118. Fordon
382. **Modern Pharmaceuticals.** (5) Five lectures. A study of the new and more important pharmaceuticals found in modern practice considered from the standpoint of composition, manufacture, dosage, and properties. Pr., 211, Chemistry 239 or equivalent, senior standing. Formerly 182. Plein
473. **Cosmetic Manufacturing.** (3) One lecture, two labs. Preparation of many types of cosmetics and a study of their physical, chemical, and physiological properties. Pr., Chem. 239 or equivalent. Formerly 173. Rising
483. **Hospital Pharmacy.** (3 to 5) Two lectures, one to three labs. Principles and techniques of hospital dispensing and dispensary management. Pr., permission. Formerly 183. Plein
499. **Undergraduate Research.** (1 to 5) Open to qualified juniors, seniors, and graduate students. Research problems in manufacturing and dispensing pharmacy. Formerly 199. Rising, Plein

Courses for Graduates Only

540. **Pharmaceutical Emulsions.** (2) An advanced study of the problems involved in the preparation of emulsions in pharmaceutical manufacturing. Pr., Chem. 239 and 351, 352. Rising
550. **Solvents and Solvent Extraction.** (2) An advanced study of the theories of solvent extraction and the use of solvents applied to pharmaceutical manufacturing. Pr., permission. Plein
604. **Nonthesis Research.** (Maximum of 25 credits for M.S.; 45 for Ph.D.) Formerly 304. Rising, Plein

Thesis.

Pharmacognosy

Professor Goodrich; Associate Professor Youngken; Assistant Professor Neva

- 212-213-214. **Pharmacognosy.** (3-3-3) Three lectures. Plant and animal drugs—their sources, production, identification, active constituents, and uses. Pr., Bot. 111 or equivalent. Formerly 12-13-14. Goodrich, Youngken, Neva
304. **Microscopy.** (3) One lecture, two labs. The application of stains and microchemical techniques in examining powdered drugs, spices, and related substances. Included is a consideration of adulteration and fungus contamination. Pr., 214, Bot. 111 or equivalent. Formerly 104. Youngken, Neva
405. **Microscopy.** (2) One lecture, one lab. Continuation of Pharmacog. 304. Pr., 304, Zool. 208. Formerly 105. Youngken, Neva
406. **Medicinal Plants.** (2) One lecture, one lab. Considerable time is spent in the medicinal plant garden and greenhouse. Problems are given on the cultivation of a few important alkaloid-, glycoside-, and oil-yielding plants. Herbicides and insecticides are studied. Preparation of herbarium specimens. Analysis of marketing and market values. Pr., 214. Formerly 106. Youngken
411. **Glandular Products.** (3) Three lectures. The study of substances used in pharmacy produced by exocrine and endocrine glands. Among such substances are animal glandular extracts and hormones. Pr., 214, Zool. 208. Formerly 111. Youngken, Neva

412. Serums, Vaccines, and Allergens. (2) Two lectures. The study of the production, quality, and use of serum, vaccine, virus, and allergenic products currently employed in the prevention and treatment of disease. Pr., 214, 411, Microbiology 301. Formerly 112. Youngken, Neva
499. Undergraduate Research. (1 to 5) Open to qualified juniors, seniors, and graduate students. Research problems in pharmacognosy. Formerly 199. Youngken, Neva

Courses for Graduates Only

604. Nonthesis Research. (Maximum of 25 credits for M.S.; 45 for Ph.D.) Formerly 304. Goodrich, Youngken, Neva
- Thesis. (*)

Pharmaceutical Chemistry and Toxicology

Professor Fischer; Assistant Professors Krupski, McCarthy, Miller

325. Gravimetric Quantitative Analysis. (5) Two lectures, one quiz, two labs. The principles of gravimetric analysis, including its application to pharmaceutical compounds. Pr., Chemistry 110. Formerly 125. Miller
326. Volumetric Quantitative Analysis. (5) Two lectures, one quiz, two labs. The principles of volumetric analysis, including its application to drugs and preparations of pharmaceutical importance. Pr., 325. Formerly 126. Miller
327. Urinalysis. (2) One lecture, one lab. The qualitative and quantitative detection and determination of physiological and pathological constituents of urine. Pr., 326 and Chemistry 239. Formerly 127. Miller
328. Drug Assay. (3) One lecture, two labs. The assay of various official products involving the application of special analytical techniques and a study of the methods of standardization of pharmaceutical products. Pr., Ph'chem. 326, Chemistry 239. Formerly 128. Miller
340. Organic Medicinal Products. (3) Three lectures. The nomenclature, properties, reactions, and synthesis of organic medicinals. Pr., Chemistry 239. Formerly 140. Miller
- 495-496. Pharmaceutical Chemistry. (5-5) Two lectures, one recitation, two labs. The pharmacy and chemistry of carbohydrates, proteins, fats, fixed and volatile oils, waxes, glycosides, resins, dyes and preservatives used in food, and other plant and animal principles. The lab work consists of qualitative tests and quantitative methods for determining component parts. Pr., 326 and Chemistry 239. Formerly 195-196. Fischer
497. Pharmaceutical Chemistry and Toxicology. (5) Two lectures, one recitation, two labs. History, source, structure, synthesis, qualitative detection, and quantitative determination of alkaloids. Includes the separation and identification of poisons from animal tissues. Pr., 326 and Chemistry 239. Formerly 197. Fischer
499. Undergraduate Research. (1 to 5) Open to qualified juniors, seniors, and graduate students. Research problems in pharmaceutical chemistry. Formerly 199. Fischer, Krupski, McCarthy, Miller

Courses for Graduates Only

- 511-512-513. Advanced Pharmaceutical Chemistry. (3-3-3) One lecture, two labs. Offered in 1948-1949 and alternate years following. Deals with pH determinations and buffer systems, fluorometry, gasometric methods of analysis; chromatography, combustion analysis, plant chemistry, spectroscopic methods, the use of various instruments for scientific investigations, and vitamin determinations. Open to qualified students after conference with instructor. Formerly 211-212-213. Krupski
604. Nonthesis Research. (Maximum of 25 credits for M.S.; 45 for Ph.D.) Formerly 304. Fischer, Krupski, McCarthy, Miller
- Thesis.

PHILOSOPHY

Professors Nelson, Rader; Visiting Professor Wild; Associate Professors Melden, Smullyan; Assistant Professor Matson

100. Introduction to Philosophy. (5) The basic problems of life and existence and how they are answered by the great philosophers. These problems include the relations of religion to science, the nature of morality, the meaning of human history, and the nature of knowledge. Formerly 1. Melden, Smullyan, Rader, Matson, Wild
110. Introduction to Social Ethics. (5) The nature of a good social order and right social action. The rival ideals of aristocracy, fascism, liberalism, and socialism. Special emphasis upon the nature and ideals of democracy. Formerly 2. Rader
115. 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. Formerly 3. Melden
120. 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. Formerly 5. Nelson, Melden, Smullyan, Matson

- 420-421. *History of Philosophy.* (5-5) The development of Occidental philosophy from the sixth century B.C. until the late nineteenth century. Primary stress upon such major figures as Plato, Aristotle, Augustine, Aquinas, Descartes, Hume, and Kant, with attention to their historical and cultural background. Formerly 101-102. Rader
423. *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., 421. Formerly 103. Smullyan
428. *Chinese Philosophy Before the Ch'in Dynasty.* (3) The rise of Chinese philosophy in the classical times; different aspects of the philosophical schools in ancient China, with special emphasis on Confucianism, Mohism, Taoism, the Dialecticians, and the Legalists. Formerly 172. Shih
440. *Ethical Theory.* (3) A critical examination of the concepts and judgments of value, including an analytical treatment of the notions of right and wrong, obligations, good and bad, and the relations between ethical and aesthetic value. Pr., 110 or 115. Formerly 133. Melden
445. *Philosophy of Art.* (5) Introduction to the principal systems of esthetics. Interpretations of the creative activity of the artist, the work of art, the contemplation and criticism of art-objects, and the relation of art to the social order. Formerly 129. Rader
447. *Philosophy in Literature.* (5) A study of philosophical ideas as embodied in great works of literature: Lucretius, *On the Nature of Things*, the Book of Job, Dante's *Divine Comedy*, Goethe's *Faust*, Shelley's *Prometheus Unbound*, and Hardy's *The Dynasts*. Formerly 125. Matson
450. *Epistemology.* (5) Problems in the theory of knowledge. The nature, possibility, criteria, and limitations of knowledge. Critical evaluation of subjectivism and realism, dogmatism and skepticism, intuitionism, pragmatism, empiricism, rationalism, and positivism. Theories of meaning, truth, and perception. Synthesis of various positions around the scientific method. Pr., 100. Formerly 117. Wild
453. *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., 120. Formerly 111. Smullyan
- 455-456-457. *Metaphysics.* (3-3-3) Theories of reality; nature of existence; appearance and reality; substance, causation, and law; relation of mind to body; pluralism and monism; the self and human freedom. Pr., 100 or 421 or permission. Formerly 104-105-106. Wild
460. *Introduction to the Philosophy of Science.* (5) A study of concepts and methods which are fundamental in mathematics and in the physical and social sciences. The interrelations of the sciences to one another as well as to art, religion, and philosophy. Speculations concerning the nature of the world which have been suggested by past and present scientific theories. Operationist tendencies in recent interpretations of science. Pr., 100 or 120. Formerly 107. Smullyan
463. *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., 100. Formerly 110. Melden
467. *Philosophy of Religion.* (5) The origin, nature, and types of religion. The grounds of religious belief; mysticism, faith, reason, and evidence. The main religious problems: free will, immortality, the existence and nature of God, the problem of evil, religion as a basis of ethics, the social implications of religion. Formerly 113. Rader
470. *Advanced Logic.* (5) Symbolic logic; deductive systems; types of order; infinity; propositions, classes, relations; logical paradoxes and theory of types; critical examination of logical doctrine and analytic methods bearing on philosophical questions. Pr., 120. Formerly 193. Nelson
484. *Reading in Philosophy.* (1-4, maximum 12) Reading of approved philosophical works. Primarily for graduate students, though under special conditions advanced undergraduates will be permitted to register for this course. Credit will be granted only on passing a written examination on the reading. Pr., permission of Executive Officer of the Department of Philosophy. Formerly 184. Staff

Courses for Graduates Only

600. *Nonthesis Research.* (1-6) Pr., permission. Formerly 300. Staff

PHYSICAL AND HEALTH EDUCATION

I. FOR MEN

Professor Belsbaw; Associate Professors Cutler, Kunde, Reeves, Torney; Assistant Professors Auernheimer, Peck, Stevens; Instructors Brumbach, Mills, Swisber; Associates Buckley, Clark, Edmondson, Jefferson, Morris, Ulbricksen, Odell, Smith

- 101, 102, 103, 201, 202, 203. *Adapted Activities.* (1 each qtr.) For handicapped. Gymnastics, games, and sports to meet the needs of the individual. Formerly 1, 2, 3. Cutler
104. *Basic.* (1) May substitute freshman intercollegiate athletics. Formerly 4. Staff
- †105 to 253. *Physical Education Activities.* (1 each qtr.) Course 105, 205, pack forest; 106, 206, handball; 107, 207, basketball; 108, 208, tennis; 109, 209, softball; 110, 210, golf; 111, 211, track; 112, 212, crew (class), pr., swimming; 113, 213, fencing; 114, 214, boxing; 115, 215, tumbling; 116, 216, apparatus and stunts; 117, 217, wrestling; 118, 218, volleyball; 119, 219, swimming; 120, 220, soccer; 121, 221, touch football; 122, 222, badminton; 123, 223, archery; 124, 224, calisthenics; 125, 225, skiing; 126, 226, speedball; 127, 227, bowling; 128, 228, weight lifting; 129, 229, sailing; 130, 230, table tennis; 141, freshman, 241, varsity basketball;

† Fees: Bowling, \$3.00; Golf, \$3.00 Fall and Spring, \$1.50 Winter.

- 142, freshman, 242, varsity crew, pr., swimming; 143, freshman, 243, varsity football; 144, freshman, 244, varsity track; 145, freshman, 245, varsity swimming; 146, freshman, 246, varsity baseball; 147, freshman, 247, varsity tennis; 148, freshman, 248, varsity golf; 149, freshman, 249, varsity skiing; 150, freshman, 250, varsity volleyball; 151, freshman, 251, varsity wrestling; 152, freshman, 252, varsity fencing; 153, freshman, 253, varsity handball. Formerly 5 through 60.
- 161, 162, 163, 264, 265, 266. Physical Education Activities for Majors. (1 each qtr.) Formerly Staff
61, 62, 63, 64, 65, 66.
175. Personal Health. (2) Health information that affords a basis for intelligent guidance in the formation of health habits and attitudes. Formerly 75. Reeves, Staff

II. FOR WOMEN

Associate Professors Wilson, deVries, Kidwell, McLellan, Rulifson; Assistant Professors Broer, Fox, Gunn, Horne, McGownd, MacLean, Waters; Instructors Clark, Jones, Swenson; Acting Instructors Hakola, Rowley

Lower-Division Health Education

110. Health Education. (2) Health problems of freshman women. Formerly 10.
McLellan, Horne, Gunn, Waters

Activity Courses

- 111 through 270. Physical Education Activities. (1 each qtr.) Course 111, adapted activities; 113, basic activities; 115, archery; 118, badminton; 121, bowling; 122, field sports; 124, fencing; 126, golf; 128, riding; 131, skiing; 133, stunts and tumbling; 135, tennis; 141, basketball; 143, hockey; 144, softball; 145, volleyball; 148, folk and square dance; 151, modern dance; 154, social dance; 155, tap and clog; 157, canoeing; 160, adapted swimming; 161, beginning swimming; 162, elementary swimming; 215, intermediate archery; 218, intermediate badminton; 221, intermediate bowling; 224, intermediate fencing; 228, intermediate riding; 236, intermediate tennis; 248, intermediate folk and square dance; 252, intermediate modern dance; 257, intermediate canoeing; 263, intermediate swimming; 264, advanced swimming; 265, rhythmic swimming; 266, diving; 267, life saving; 268, water safety instructor. Formerly 11 through 70.
- 176, 177, 178. Physical Education Activities for Freshman Majors. (2, 2, 2) Hockey, soccer, speedball, basketball, badminton, tennis, stunts and tumbling. Formerly 76, 77, 78.

III. PROFESSIONAL COURSES FOR MEN AND WOMEN

- 181, 182, 183, 284, 285, 286. Physical Education Backgrounds. (1, 1, 1, 1, 1) MEN. Fundamental information for the methods and materials in the presentation of swimming, life-saving, tumbling, apparatus, individual games, boxing, wrestling, recreational games, and group games. Formerly 81, 82, 83, 84, 85, 86.
Torney, Auernheimer, Cudler, Reeves, Kundé, Stevens, Mills
190. Problems in Physical and Health Education and Recreation. (2) MEN and WOMEN. Orientation to these fields; professional opportunities; problems encountered; and qualifications and training necessary for teaching, recreational leadership in communities and organizations, coaching (men), and physical therapy (women). Formerly 90. Horne, Peek
- 281, 282, 283, 284. Physical Education Backgrounds. (1, 1, 1, 1) WOMEN. Fundamental information for methods and materials in the presentation of gymnastics, tap dance, folk dance, social dance, modern dance, swimming, and life saving. Basic skills with emphasis for professional training. Formerly 81, 82, 83, 84. Broer, Horne, Kidwell, deVries, MacLean
290. Officiating. (2) MEN. Techniques of officiating football, basketball, baseball, track and field, swimming, tennis, volleyball, softball, speedball, and soccer. Pr., sophomore standing. Formerly 98. Staff
291. Personal and General Hygiene. (3) MEN. Advanced course designed primarily for professional students in physical education. Pr., sophomore standing. Formerly 95. Reeves
292. First Aid and Safety. (3) MEN and WOMEN. May satisfy both the Standard and Advanced American Red Cross First Aid Certification. Includes safety education in schools. Pr., junior standing for men. Formerly 116. Reeves, MacLean
293. Physiology of Muscular Exercise. (3) MEN and WOMEN. Relation to physical activities. Muscular efficiency, fatigue, recovery, chemical changes, and neuro-muscular control, with special reference to games, sports, corrective work and body mechanics. Pr., Zool. 118 or 208 or 258. Formerly 115. Belshaw
294. Community Recreation. (2) Formerly 123. Kunde
301. Methods and Materials in Gymnastics, Stunts, and Tumbling. (3) WOMEN. Methods and opportunities for presentation of these activities including marching tactics. Pr., or accompanying course, Anat. 301 and Zool. 258, and P.E. 292. Formerly 101. MacLean, Broer
- 304, 305, 306. Officiating. (2, 2, 2) WOMEN. Techniques for officiating in field hockey, volleyball, aquatics, basketball, badminton, softball, and tennis; opportunity for national and local ratings. Pr., junior standing or permission. Formerly 104, 105, 106. Fox
309. 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 coeducational dance program. Pr., junior standing or permission. Formerly 109. Wilson

311. *Rhythmic Activities for Small Children.* (2) WOMEN. Observation of children. Pr., junior standing. Formerly 111. deVries
312. *Elementary School Athletic Program.* (3) WOMEN. Program planning, small group play, and team game activities for elementary grades. Formerly 112. Rulifson
318. *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., 281, 282, 283. Formerly 118. deVries, Wilson
322. *Kinesiology.* (3) MEN and WOMEN. Analysis of leverage in body movement and problems of readjustment in relation to body mechanics and to physical education activities. Pr., 293, Zool. 208 or 258, Anat. 301. Formerly 122. Cutler
324. *Playground Programs.* (3) MEN and WOMEN. MEN. Pr., 292B, 294, 345, 6 cr. in methods. Formerly 124. Kunde
328. *Organization and Administration of Camp Programs.* (3) MEN and WOMEN. The educational and social significance of camping; organization of activities and problems of administration. Pr., junior standing, Psych. 100, Soc. 110, and by permission. Formerly 128. McLellan, Kunde
336. *Athletic Training and Conditioning.* (1) MEN. Pr., 292B or permission. Formerly 136. Clark
340. *Administration of Intramural Sports.* (3) MEN. Pr., 345, junior standing. Formerly 140. Stevens
345. *Principles of Physical Education.* (3) MEN and WOMEN. Social, biological, and educational foundations. The place of physical education in the school program. Pr., Zool. 258 or 118 or 208, Soc. 110, Psych. 100, and junior standing. Formerly 145. Peek
355. *Dance Composition.* (2) WOMEN. Practice in modern dance; analysis of choreography; opportunity for creative work. Pr., 151, 318. Formerly 155. deVries
356. *Methods and Materials in Teaching Modern Dance.* (2) WOMEN. Source of materials; their selection and organization; methods of presentation; music, and types of accompaniment. Pr., 283, 318, and by permission. Formerly 156. deVries
358. *Methods in Teaching Apparatus, Tumbling, and Stunts.* (2) MEN. Pr., 162 and 182, or permission. Formerly 158. Auernheimer
361. *Methods in Teaching Boxing and Wrestling.* (2) MEN. Pr., 264 or 284, or permission. Formerly 161. Mills, Stevens
362. *Methods and Materials in Teaching Folk, Tap, and Clog Dancing.* (2) WOMEN. Methods and materials and opportunities for presentation of these activities as well as social dancing. Pr., or accompanying courses, 281, 282, 318. Formerly 162. Wilson
363. *Methods and Materials in Teaching Sports.* (3 or 2) MEN and WOMEN. Women, 3 credits; pr., 176, 177, 178, 312. Men, 2 credits; pr., 163-183, 266-286, or permission. Program planning, methods in teaching team and individual sports including volleyball, basketball, field hockey, soccer, speedball and other field games, softball, tennis, and badminton. Formerly 163. Rulifson, MacLean, Peek
364. *Methods in Teaching Swimming.* (3 or 2) MEN and WOMEN. Includes diving, lifesaving, and direction of camp waterfront program. Women, 3 credits; pr., 157 and 284, or permission; men, 2 credits; pr., 161-181, or permission. Formerly 164. MacLean, Torney
370. *Methods in Teaching Football.* (2) MEN. Pr., junior standing. Formerly 170. Odell
371. *Methods in Teaching Basketball.* (2) MEN. Pr., junior standing. Formerly 171. Edmundson
372. *Methods in Teaching Track and Field.* (2) MEN. Pr., junior standing. Formerly 172. Edmundson
373. *Methods in Teaching Baseball.* (2) MEN. Pr., junior standing. Formerly 173.
426. *Observation and Practice Teaching. (In Recreation)* (2 or 4) MEN and WOMEN. Forty hours of observation and participation in organized recreation for different age groups. Pr., recreation major, senior standing, or permission. Camp or recreation experience of one summer for women. For men, 2 credits; for women, 4 credits. Formerly 126. Kunde, McLellan
429. *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., 292 and senior standing. Formerly 129. Reeves
435. *Adapted Activities.* (3) MEN and WOMEN. Typical cases from the standpoint of individual needs. Pr., 293, 322, Zool. 258 or 118 or 208. Formerly 135. Waters, Cutler
447. *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. Formerly 127. Cutler
450. *The School Physical Education Program.* (3 or 2) MEN and WOMEN. Problems of organization and administration. Pr., 345, senior standing or permission for men; 362, 363, 364 for women. For men, 3 credits; for women, 2 credits. Formerly 150. Torney, Wilson
453. *Methods and Materials in Health Teaching.* (3) MEN and WOMEN. Health instruction in elementary, junior and senior high schools, including subject matter, source material, and method. Pr., senior standing, 345, 465, Zool. 258 or 118. Formerly 153. McLellan
- 459-460. *Dance Production.* (2-2) WOMEN. Costuming, lighting, staging for dance concerts and festival programs. Pr., 283, 318, and by permission. Formerly 159-160. deVries
465. *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., 345, junior standing. Formerly 165. Belshaw
466. *Coaching.* (0) WOMEN. Pr., junior standing or permission. Formerly 166. Fox, Staff

493. **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., 345, 450. Formerly 193. Torney
Teachers' Course in Physical Education. (See Educ. 375U & V)
 For additional courses in Health Education, see School of Home Economics, School of Nursing, School of Medicine, and Department of Public Health.

Courses for Graduates Only

501. **Seminar in Physical Education.** (3) MEN and WOMEN. Pr., 345, 450. Formerly 201. Broer, Belshaw
 503. **Seminar in Health Education.** (3) MEN and WOMEN. Pr., 345, 453, 465. Formerly 203. Waters
 506. **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., 345, 450. Formerly 206. Kunde
 508. **Administration of Recreation.** (5) Pr., 324, 345, or permission. Formerly 208. Kunde
 600. **Nonthesis Research.** (2 to 5) Formerly 300. Staff
 A—Physical Education
 B—Tests and Measurements
 C—Physiology of Exercise
 D—Health Education
 E—Recreation
 Thesis (6 to 9)

PHYSICS

Professors Utterback, Henderson, Uehling; Associate Professors Kenworthy, Neddermeyer; Assistant Professors Clark, Farwell, Geballe, Higgs, Jacobsohn, Rittland, Sanderman, Schmidt, Streib; Instructor Garber

Students not in engineering must elect Physics 104, 105, 106, unless they have had a year of high school physics.

100. **Survey of Physics.** (5) Students who expect to continue with physics should begin with 101 or 104. Formerly 10.
 101, 102, 103. **General Physics.** (5, 5, 5) 101: Mechanics and sound; 102: Electricity and magnetism; 103: Heat and light. Pr., one year of high school physics for 101; 101 for 102 and 103. Formerly 1B, 2B, 3B.
 104, 105, 106. **General Physics.** (5, 5, 5) Same as 101, 102, 103. Pr., plane geometry; 104 for 105 and 106. Formerly 4, 5, 6.
 112, 113. **Physics for Architectural Students.** (5, 5) Pr., Physics 101 or 104. Formerly 12, 13. Sanderman
 121, 122, 123. **General Physics.** (5, 5, 5) 121: Mechanics and sound; 122: Electricity and magnetism; 123: Heat and light. Pr., one year of high school physics for 121; 121 for 122 and 123. For physical science majors only. Formerly 1*, 2*, 3*. Kenworthy
 150. **Sound and Music.** (5) For speech and music majors. Formerly 50. Staff
 154. **Elementary Photography.** (4) The principles and practice of the elementary photographic processes. Lab experience in the fundamental photographic procedures. Pr., high school physics or chemistry. Formerly 54. Higgs
 170. **Physics for Nurses.** (5) Selected physical theories and principles and their applications to various nursing situations and to hospital equipment. Formerly 70. Sanderman
 190. **Selected Topics in Physics for Home Economics Majors.** (5) Selected topics in physics with applications chosen from daily life and from the various commercial fields open to home economics students. Formerly 90. Sanderman
 217, 218, 219. **Physics for Engineers.** (4, 4, 4) A course stressing the basic principles of physics with practice in the application of these principles by the solution of a large number of problems. The derivation of necessary relationships from first principles is emphasized rather than simple substitution in formulae. Pr., one year high school physics, Math. 151 and taking calculus, G.E. 112 or C.E. 290. Formerly 97, 98, 99. Uehling, Henderson
 221, 222. **Introduction to Modern Physics.** (3, 3) Some fundamental concepts of the particles of modern physics. The atomic character of electricity. The photon character of radiation. The positron. The neutron. The mesotron. The existence of isotopes. The nature of cosmic rays. Introduction to nuclear reactions. Pr., 103, 106 or 123. Formerly 101, 102. Utterback
 225, 226. **Electricity.** (3, 3) Elementary theory of direct, transient, and alternating currents in circuits involving resistance, capacitance, inductance, and nonlinear elements. Elementary electrostatic theory; field intensity and potential; Gauss's Law; dielectrics; capacitance. Elementary electromagnetism; Ampere's Law; the magnetic field; Faraday's Law; magnetic materials; inductance. Vacuum tubes; amplifiers; electrical machinery. Lab: Use of galvanometer, potentiometers, simple bridges, electrostatic instruments, thermal, rectifying elements, photoelectric elements, magnetic measurements, vacuum tube devices. Pr., 103, 106, or 123. Formerly 105, 106. Streib
 229. **Pyrometric Measurements.** (2) Pr., Physics 103, 106, or 123. Formerly 109. Utterback
 240. **Sound.** (3) A study of the sources of sound, transmission in different media, and elements of acoustics. Pr., 103, 106, or 123. Formerly 140. Kenworthy

250. Heat and Introduction to Thermodynamics and Kinetic Theory. (3) Concepts of heat and energy changes. Experimental laws of heat and thermal reactions. Ideas of reversibility, entropy, etc. The application of general principles to specific cases. Pr., 103, 106, or 123. Formerly 150. Utterback
315. Photography. (4) A quantitative study of the more important photographic processes; photographic optics; lighting; color photography; the application of photography to the sciences and arts. Pr., 154. Formerly 115. Higgs
354. Low- and High-Frequency Measurements. (4) Measurement of frequency and measurement of impedance as a function of frequency; the production, amplification, propagation, and detection of electromagnetic oscillations at low- and high-frequencies; the analysis of electromagnetic circuit and field conditions. Pr., 226, calculus. Formerly 154. Uehling
355. Introduction to Modern Physics for Electrical Engineers. (3) The electrical nature of matter; electrolysis, gaseous discharges; discovery of the electron, the electronic charge. Atomic and nuclear structure; the Einstein mass-energy relation; atomic and nuclear binding energies, Rutherford Scattering and nuclear sizes. The Quantum Theory; Planck radiation law, photoelectric effect, X-ray production, Compton effect, pair production; Bohr theory of the hydrogen atom. Wave character of matter; deBroglie hypothesis, electron and neutron diffraction. Nuclear physics: radioactivity, nuclear reactions, the cyclotron, chain reactions. Pr., senior in E.E. Formerly 155. Schmidt
- 360, 361. Optics. (3, 3) Lectures and lab work in wave motion and harmonic analysis, interference and diffraction, polarization, introduction to electromagnetic character of light and interactions with matter, geometrical optics. Pr., 103, 106, or 123, calculus. Formerly 160, 161. Clark
- 367, 368, 369. Special Problems. (*) Pr., permission. Formerly 167, 168, 169. Staff
370. Spectrometry. (3) The theory and use of spectroscopic equipment; the practice of qualitative and quantitative spectrum analysis. Pr., 360 or permission. Formerly 170. Staff
380. History of Physics. (2) Pr., 103, 106, or 123. Formerly 180. Staff
485. Nuclear Physics. (3) Natural radioactivity; alpha, beta, and gamma spectra, nuclear energy states, energy-mass conservation. Properties of the radiations; stopping power and range for charged particles, absorption of gamma rays by photoelectric and Compton effects and by pair production. Accelerators, artificial disintegrations, examples of reactions, measurement of reaction energy. Induced radioactivity. Nuclear structure, systematics of the stable nuclei. Pr., 222. Formerly 185. Neddermeyer
- 491, 492. Theoretical Mechanics. (4, 4) An analytical study of the basic theorems of classical mechanics, utilizing vector methods. An introduction into the methods of Hamilton and La Grange with all basic principles well illustrated by a large number of problems which the student solves. A lab accompanies the class work. Pr., Math. 253 or 309, 30 credits in physics. Formerly 191, 192. Geballe
- 495, 496. Experimental Atomic Physics. (3, 3) A lab course designed to acquaint the student with a group of phenomena representative of modern experimental atomic physics. Pr., 30 credits in physics. Formerly 195, 196. Higgs

Courses for Graduates Only

- 505, 506. Mechanics. (*, maximum 6, 6) Includes dynamics of a particle and of rigid bodies, generalized coordinates and Lagrangian theory, variational principles. Hamilton's equations of motion, vibration, and normal coordinates. Pr., 40 hours of physics, Math. 414 concurrently. Formerly 200, 201.
- 509, 510. Atomic, Molecular, and Nuclear Structure. (*, maximum 6, 6) A study of the energy level systems of nuclear, atomic, and molecular aggregates of elementary particles based primarily on the vector model and other phenomenological modes of description; radioactive transitions and selection rules; atomic and molecular spectra; nuclear interactions and transitions. Pr., Physics 506 or permission. Formerly 209, 210.
- 513, 514, 515. Electricity and Magnetism. (*, maximum 6, 6, 6) A study of the properties of electric and magnetic fields as boundary value problems. Practice in the application of harmonic function and conformal representation. Electrodynamics and a study of electromagnetic waves in empty space and material media. Pr., Physics 506. Formerly 213, 214, 215.
- 517, 518, 519. Quantum Mechanics. (*, maximum 6, 6, 6) Pr., Physics 509 and 513. Formerly 218, 219, 220.
520. Seminar. (1-2) Formerly 250.
524. Thermodynamics. (*, maximum 6) Pr., Physics 506. Formerly 224.
525. Statistical Mechanics. (*, maximum 6) Pr., Physics 517. Formerly 225.
- 528, 529. Current Problems of Physics. (*, maximum 6, 6) Discussions of several active research fields including in each case a broad survey of its background; emphasis on those concepts which meet with general acceptance, as well as those at variance with experiment or untested, and a detailed study of at least one recent paper in the field. Pr., Physics 517. Formerly 228, 229.
550. X-Rays. (*, maximum 6) Pr., Physics 506 and 510. Formerly 251.
562. Theory of Spectra. (*, maximum 6) Pr., Physics 509 and 519. Formerly 262.
568. Theory of Solids. (*, maximum 6) Pr., Physics 519. Formerly 268.
570. Radiation Theory. (*, maximum 6) Pr., Physics 519. Formerly 270.
600. Nonthesis Research. (*) Formerly 300.

Thesis.

Not offered in 1950-1951: 552: Conduction Through Gases; 554: Hydrodynamics; 556: Mathematical Theory of Sound; 558: Cosmic Rays; 560: Nuclear Physics; 564: Relativity; 566: Theory of Collisions; 572: Foundations of Statistical Mechanics; 574: Atomic and Molecular Interaction; 576: Selected Topics in Experimental Physics; 578: Selected Topics in Theoretical Physics.

POLITICAL SCIENCE

Professors Martin, Ballis, Bone, Cole, Levy, Mander, Shipman, Wobster; Visiting Professor Hsiao; Associate Professors von Brevern, Michael; Assistant Professors Hitchner, Hossom, Maki; Acting Assistant Professor Riley; Instructors Harbold, Hogan; Associate Coleman; Lecturer Shooche

Elementary Course Primarily for Freshmen

100. Survey of Political Science. (5) Principles and problems of government. The state in theory, law, politics, and administration. Formerly 1. Bone, Mander, Hitchner

Intermediate Courses Primarily for Sophomores

210. 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 100. Formerly 56. Hossom
220. International Relations. (5) Rise of modern states; alliances, imperialism, the League of Nations; present and future problems. Open to freshmen who have had 100. Formerly 54. Riley
221. Power and the State. (5) Pragmatism in politics; Machiavellian diplomacy; Caesarism and the "leader principle"; military considerations. Formerly 74. Riley
260. 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 100. Formerly 52. Cole
270. Government in Action. (5) Problems of political leadership; public opinion and political organization; bureaucratic control. Open to freshmen who have had 100. Formerly 58. Hossom

*Prerequisite for the following courses is Political Science 100**Upper-Division Courses*

321. American Foreign Policy. (3) Major policies as modified by recent developments. International cooperation. Formerly 121. von Brevern
322. The Foreign Service. (3) Department of State; diplomatic and consular services; American diplomatic practice and procedure. Formerly 122. Riley
323. International Relations of the Western Hemisphere. (5) The Monroe Doctrine; Pan-Americanism; special interests in the Caribbean; hemisphere solidarity. "Good Neighbor" policy; Latin America and the War. Formerly 123. von Brevern
324. Contemporary International Relations in Europe. (5) Foreign policies of the major powers; international organization between the two World Wars; recent and contemporary developments. Formerly 124. Hitchner
328. The Specialized Agencies of International Government. (5) International organization for economic, social, and cultural cooperation; machinery, policies, and problems. Formerly 128. Hitchner
336. 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. Formerly 136. von Brevern
337. 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. Formerly 137. von Brevern
340. Comparative Federal Systems. (5) Federalism as exhibited in the governments of Canada, Australia, Switzerland, and Russia. Formerly 141. Hitchner
341. The Authoritarian State. (5) Ideologies and institutions of the "power" states, with special consideration of Germany and the Soviet Union. Formerly 143. von Brevern
342. Comparative Governments of the Far East. (5) Structure and organization in China and Japan; puppet regimes; colonial administration. Formerly 147. Maki
343. Modern British Government. (5) Contemporary British government and politics; current problems of the parliamentary system, political parties, civil liberties. Formerly 148. Hitchner
344. Chinese Government. (5) Imperial government; transition period; national government; present forms of local government; constitutional draft; present political situation. Formerly 166. Michael
345. Japanese Government. (5) Emergence of modern government; the emperor; position of the military; central and local government; diet; parties and popular movements. Formerly 169. Maki
350. Government and Interest Groups. (5) Agrarian, labor, professional, business, and ethnic interest in politics; impact on representative institutions and governmental processes. Formerly 150. Bone
351. The American Democracy. (5) Nationalism and federalism; regionalism; the presidency; the representative system; judicial institutions; reconciliation of policy and administration. Formerly 151. Hossom
353. Theory and Practice of the Government of the State of Washington. (3) Not open for credit for majors in political science. Formerly 174. Bone

360. *The American Constitutional System.* (3) Fundamental principles; function; evolution; unwritten constitution. Recent tendencies. Formerly 101. Webster
370. *Government and the American Economy.* (5) Government regulation, promotion and services affecting general business, public utilities, agriculture, banking, investments, and social welfare. Formerly 161. Hossom
375. *Problems of Municipal Government and Administration.* (5) The city charter; relations with the state and other local units; municipal functions and services, with reference to municipalities in the state of Washington. Formerly 162. Webster
376. *State and Local Government and Administration.* (5) Structure; functions; procedures; suggested reorganization; with special reference to the state of Washington and its units of local government. Formerly 163. Webster
377. *Public Policy in Governmental Planning.* (3) Historical development; legal basis of national, state, and local planning agencies; general scope of their powers and functions; policy determination; coordination with administrative departments. Formerly 164. Hossom
398. *Honors Course for Seniors.* (5) Open to qualified majors in the last term of the senior year. Formerly 195. Staff
411. *The Western Tradition of Political Thought.* (5) Origin and evolution of the major political concepts of the Western world. Nineteenth-century modifications. Formerly 111. Harbold
412. *American Political Thought.* (5) Major thinkers and movements from the Colonial period to the present. Formerly 112. Harbold
413. *Contemporary Political Thought.* (5) Changing political ideas since the French and Industrial Revolutions, as bases for contemporary philosophies of democracy, communism, and fascism. Formerly 113. Harbold
414. *Oriental Political Thought.* (5) Theories of the Oriental state as exhibited in the writings of statesmen and philosophers. Formerly 114. Harbold
415. *Analytical Political Theory.* (5) An analysis of the major concepts of political theory such as state, authorities, sovereignty, law, liberty, rights, equality, from a nonhistorical viewpoint. Formerly 115. Harbold
- 416J. *Introduction to Roman Law.* (5) Its importance, sources, and civil procedure; classic law of persons, property, contracts, torts, and succession in the light of modern research. For advanced undergraduates; open to qualified sophomores. Formerly 116J. Levy
418. *The Evolution of Western Political Institutions.* (5) The conflict between law and force in conditioning the character of modern government. Formerly 118. Harbold
420. *Foreign Relations of the Soviet Union.* (5) Nature and objectives of Soviet foreign policy; ideological and strategic factors; Bolshevism vs. fascism; Comintern and Cominform; League of Nations and the U. N.; East-West conflict. Formerly 178. Ballis
427. *International Government and Administration.* (5) Law and organization in international relations; foreign offices; regional and global international institutions. Formerly 127. Mander
429. *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. Formerly 129. Maki
430. *International Relations in the Middle and Near East.* (5) Egypt, Turkey, Afghanistan; mandates; critical problems today. Formerly 130. Mander
432. *American Foreign Policy in the Far East.* (5) In relation to diplomacy, trade, and internal politics. Formerly 132. Michael
- 433J. *Europe 1914-1945.* (5) Broad outline of history from World War I to the end of World War II. Formerly 133J. Levy
435. *Comparative Colonial Policies and Administration.* (5) Colonial policies of leading powers; government of dependent peoples; mandates; national versus international control. Formerly 135. Mander
- 440J. *Political Institutions of the Russian Empire.* (3) Analysis of Russian governmental and legal institutions influencing the Soviet system. Formerly F.E. 166. Ballis
441. *Political Institutions of the Soviet Union.* (5) Dynamics of Soviet political theory; Leninism and Stalinism; forms and functions of governmental and party institutions; Soviet constitutionalism, federalism, legal and administrative agencies. Formerly 176. Ballis
- Law 441. *International Law.* (3-3) As developed by custom and agreement and as exhibited in decisions of international tribunals and municipal courts. Formerly Law 122. Martin
445. *Comparative Political Institutions.* (5) Analytical study of doctrines, forms, functions, processes, and controls of all governmental systems, without regard to region or country. Formerly 145. Martin
450. *Political Parties and Elections.* (5) Organization and methods; the nature and future of party government. Formerly 152. Bone
451. *The Legislative Process.* (5) Organization and procedure of legislative bodies with special reference to the theory and practice of representative government, lobbying and bicameralism. Formerly 157. Bone
452. *Political Processes and Public Opinion.* (3) Organization and implementation of opinion for the purpose of controlling government, and public opinion as a force in the development of public policy; public relation activities of government agencies. Formerly 158. Bone
460. *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. Formerly 153. Cole
470. *Introduction to Public Administration.* (5) Including relationship of administration to other agencies of government. Formerly 155. Shipman

471. **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. Formerly 154. Shipman
472. **Introduction to Administrative Law.** (5) Creation of administrative authorities, scope of limitations on their powers, remedies, judicial control of administrative action. Formerly 167. Shipman
473. **Comparative Administrative Systems.** (5) Principles and practice of administration under foreign governments, especially in Europe and the British Commonwealth. Formerly 168. Hossom
499. **Individual Conference and Research.** (2 to 5) Pr., permission. Formerly 199. Staff

Course for NROTC Only

338. **Foundations of National Power.** (5) Basic factors in international politics in terms of population, national resources, political organization of national states, and the distribution of power among them; the strength, aims, and policies of the major powers. Formerly 170-171-172. von Brevern

Courses for Graduates Only

- 506, 507, 508. **Graduate Seminar.** (3, 3, 3) Oral and written studies in contemporary problems, domestic and foreign. For candidates for higher degrees in political science. Formerly 201, 202, 203. Martin
- 511, 512, 513. **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. Formerly 211, 212, 213. Cole
514. **Seminar in Problems in Political Theory.** (3 to 5) Selected topics, historical and conceptual, national, regional, and universal. Formerly 214.
515. **Methods and Research in Political Science.** (3 to 5) Political science and the social sciences; methods of research; bibliography of general and special fields. Formerly 215.
521. **Seminar in the Theory of International Relations.** (3) A discussion of the principal theories underlying the interstate relations. The sovereign state as a unit in the community of states. The theory of the state and the theory of the society of nations. Formerly 217. Mander
- 522, 523, 524. **International Government and Organization.** (3, 3, 3) Advanced studies, with emphasis on constitutional organization and administrative procedures, with particular reference to the United Nations, specialized agencies, and other recent developments. Formerly 221, 222, 223. Mander
- 525, 526, 527. **Seminar in Foreign Policy.** (3, 3, 3) The European states system. Foreign policies of the major European powers. Alliances and the balance of power. Leading principles of American foreign policy. Current problems in American diplomacy. International practice and procedure. International conferences. Foreign offices. Formerly 224, 225, 226. Martin
- 528, 530. **Seminar in Regional Foreign Policy.** (3, 3) Regionalism in the world order and economy. The "region" as a basis of foreign policy. Foreign interests and policies of the major regions of the world. The USSR; Central Europe; Western Europe; the British Empire; the Middle and Near East; the Far East; Latin America. Formerly 231, 233. Mander and Staff
- 540J. **Seminar on the Soviet Union: Government and Diplomacy.** (4) May be repeated once for credit. Formerly Far East 230. Ballis
560. **Seminar in Roman Law.** (3) Modern research. Readings in Justinian's *Institutes* and *Digest* in English translation. Formerly 234. Levy
- 562-563-564. **Public Law.** (3-3-3) Constitutional and legal concepts governing governmental authority and institutions and the conduct of governmental activities. Pr., admission to graduate professional curriculum in public administration or special approval. Formerly 257-258-259. Cole
- 570-571-572. **The Administrative Process.** (3-3-3) Forms and characteristics of administrative activity, organization, and function; the executive; administrative discretion; administrative legislation and adjudication; responsibility and control. Pr., admission to graduate curriculum in public administration or special approval. Formerly 251-252-253. Shipman
- 573-574-575. **Public Management.** (3-3-3) The methods and problems of managing public activities emphasizing work supervision and control, management staff problems, personnel administration, budgetary and fiscal administration, organization and methods analysis, reporting techniques, program planning and control. Formerly 254-255-256. Shipman
- 576-577-578. **Administrative Problems.** (3-3-3) Supervised analysis of selected administrative problems in local, state, and national government and the preparation of action reports. Pr., admission to graduate curriculum in public administration. Formerly 261-262-263. Shipman
600. **Nonthesis Research.** (2 to 5) Formerly 300. Staff
- Seminar in Far Eastern Diplomacy. See Far Eastern 522, 526.
- Constitutional Law. See Law 230.
- Administrative Law. See Law 330.
- Propaganda as a Social and Political Force. See Journalism 355.

PSYCHOLOGY

Professors Loucks, Edwards, Esper, Guthrie, Horst, Stevenson Smith, Strother, Wilson; Associate Professors Bijou, Horton, McKeever; Assistant Professors Dudek, Heathers, Hermans, Levin, Moncrieff Smith, Thomson

A grade-point average of 2.5 or better in psychology subjects taken at this University must be maintained for graduation with a B. S. degree in psychology. Candidates for advanced degrees in psychology (M. S., Ph. D.) must present a 3.0 or better all-University grade-point average for work in their senior year to be eligible for admission to the Graduate School.

100. General Psychology. (5) An introduction to the principles of human behavior. Formerly 1.
McKeever and Staff
101. Psychology of Adjustment. (5) Application of psychological principles to the problems of everyday life. Pr., 100. Formerly 2.
Wilson
135. Applied Psychology. (3) Psychological approaches to human efficiency and happiness; with emphasis upon vocational and industrial, advertising, and consumer problems; and with applications to legal and medical fields. Pr., 100. Formerly 3.
Dudek
206. Superstition and Belief. (2) How we come to be superstitious. The historical development and psychological analysis of certain false opinions. Ways of discerning untruth. Formerly 117.
S. Smith
236. Industrial Psychology for Architects. (3) A survey of the methods of psychology as they apply to the problems of the architect. The course stresses a research point of view in regard to awareness of psychological problems rather than specific techniques for solving them. Primarily designed for architects. No prerequisites. Formerly 4.
Thomson
300. Advanced General Psychology. (5) A survey of the fundamental principles and experimental methods of psychology, with lab demonstrations. For psychology majors only. Pr., 100. Formerly 51.
Hermans
301. Statistical Methods. (5) Application of statistical methods to psychological problems. Description of psychological data in terms of averages, measures of variability, and measures of relationships. Problems of prediction. Frequency distributions and elementary sampling theory. Pr., 300 or permission. Formerly 108.
Edwards, M. Smith
305. Abnormal Psychology. (5) Origin and mechanism of behavior that interferes with proper adjustment; physiological pathology; psychotherapy. Pr., 15 crs. in psychology, including Psych. 101. Formerly 126.
Levin, Strother
306. Child Psychology. (5) Individual and social development and their causes, from infancy to adult age. Pr., 100. Formerly 131.
S. Smith
326. 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., 300. Formerly 116.
Loucks
335. Industrial Psychology (3) A survey of the applications of psychological principles and methods of investigation to problems of industrial relations. Employee selection, training and motivation. Factors influencing morale and employee productivity. Criteria of job proficiency. Pr., 100. Formerly 123.
Thomson
336. 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. Primarily designed for engineers. Pr., Humanistic-Social Studies 263 or 265 and junior standing in Engineering. Formerly 122.
Thomson
337. 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., 100. Formerly 121.
Thomson
345. Social Psychology. (3) Psychology of human institutions. Pr., 100. Formerly 118.
Edwards, Guthrie
400. Psychology of Learning. (5) A survey of theories and experimental research in the field of human learning. Pr., 301. Formerly 124.
M. Smith
401. History of Psychology. (5) The experimental and theoretical backgrounds of modern psychology, especially in the nineteenth century. Pr., 300 or permission. Formerly 111.
Esper
402. Modern Viewpoints in Psychology. (5) The theoretical and experimental bases for behaviorism, structuralism, Freudianism, and Gestalt; the integration of these into contemporary psychological systems. Pr., 15 credits in psychology, including 401. Formerly 112.
McKeever
403. 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., 100. Formerly 114.
M. Smith
406. Experimental Psychology. (5) Practice in planning, conducting, and reporting lab research. Pr., permission. Formerly 106.
Loucks
413. Tests and Measurements. (5) Survey of standard group psychological tests and of their theoretical and statistical bases. Practice in administering and scoring group tests. Pr., 301. Formerly 127.
Dudek
421. The Neural Basis of Behavior. (5) The anatomical and physiological principles underlying the integrative action of the nervous system, and the relation of these principles to the problems of behavior. Pr., 10 credits biology and permission. Formerly 102.
Esper
422. Physiological Psychology. (5) The physiological process in attention, emotion, fatigue, and sleep. Recent research on muscle potentials and brain waves. Pr., 421 or permission. Formerly 103.
Loucks

423. **Sensory Basis of Behavior.** (5) An account of sensory and perceptual phenomena; sensory equipment; theories of sense-organ function. Pr., 300 or 421 or permission. Formerly 141.
Horton
425. **Advanced Experimental Psychology.** (5) Principles of the design and operation of psychological apparatus. Supervised individual research. Pr., 302. Formerly 107.
Loucks
426. **Animal Laboratory.** (5) Supervised training in experimental work with animals. Pr., 400 or permission. Formerly 119.
Loucks, M. Smith
427. **Conditioning.** (5) Experimental work on conditioning. Significance for the several fields of psychology. Emphasis on specific research techniques. Pr., 400 or permission. Formerly 140.
Loucks
435. **Psychological Factors in the Design and Operation of Industrial Machines.** (3) A survey of experimental studies on the relation of human abilities and limitations to problems of design and operation of machines, display systems, and special devices. Pr., 100 or 236 or 336 or permission. Formerly 160.
Horton
436. **Occupational Analysis.** (3) Survey of methods used in obtaining occupational information and study of current sources. Use of occupational information in industry. Critical characteristics of jobs and methods for determining them. Special emphasis on the use of statistical methods in occupational analysis. Pr., 335, 413. Formerly 260.
Dudek
437. **Employment Psychology.** (3) Recruiting and interviewing industrial personnel. Nontest selection tools and procedures. Methods of statistical validation. Development and administration of industrial personnel tests. Coordination of continuous selection research program with operating procedures. Pr., 335, 413. Formerly 261.
Thomson
438. **Psychological Principles of Industrial Training.** (3) Functions and scope of training programs in industry. Development and administration of training programs. Psychological principles of learning applied to industrial training programs. Training aids and their use in various types of training. Experimental and statistical techniques for improving and evaluating training techniques and programs. Pr., 335, 400, 413. Formerly 263.
Thomson
439. **Industrial Efficiency.** (2) Survey of experimental work on fatigue and human efficiency and applications to industrial personnel. Relation of equipment and environmental factors to employee productivity. Research techniques in the determination of efficient working conditions. Pr., 335, 413. Formerly 265.
Thomson
- 441J. **Culture and Personality.** (5) The interrelation of types of culture and personality patterns. A joint course taught by the Departments of Psychology and Anthropology. Prerequisites for psychology majors: one course in anthropology and permission; prerequisites for anthropology majors: Psych. 101 and Anthro. 101, 102, 103, or junior standing. Formerly 101J.
Strother and Jacobs
444. **Psychology of Exceptional Children.** (3) Survey of behavior patterns and causes relevant to exceptional children such as the mentally retarded, the physically handicapped, superior children, and the like. Pr., 100, 101, 306. Formerly 132.
Bijou
445. **Individual Differences.** (2) The interrelationships and patternings of human traits and capacities. Pr., 100. Formerly 143.
S. Smith
446. **Public Opinion Analysis.** (5) 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., 301 or permission. Formerly 145.
Edwards
462. **Readings in Psychology.** (1-3, maximum 3) May be repeated. Reading in psychology of special interest areas under supervision of staff members. Discussion of reading in conference with instructor. When registering, please indicate name of staff member with whom research will be done. Pr., permission.
Staff
499. **Undergraduate Research.** (1 to 3, maximum 9) When registering, please indicate name of staff member with whom research will be done. Pr., permission. Formerly 199.
Staff

Courses for Graduates Only

507. **Psychological Development of the Child.** (2) The sequences and factors related to the psychological development of the average child from preschool through the adolescent ages. Pr., permission, postgraduate dental education. Formerly Pedodontics 214.
Levin
509. **Advanced Child Psychology.** (3) A critical analysis of current theories and major research in the field of child behavior and development. Pr., 306 and permission. Formerly 239.
Bijou
515. **Experimental Design.** (5) Planning research problems; formulation of hypotheses; techniques of equating groups; sampling problems; factorial design and analysis of variance; interpretation of data. Pr., 301 or permission. Formerly 209.
Edwards, M. Smith
516. **Introduction to Multivariate Psychological Measurement.** (5) Special quantitative techniques essential to understanding of multivariate psychological measurement theory. Special emphasis on elementary principles of matrix algebra basic to this theory and on efficient computational routines. Pr., 301, 413, or permission. Formerly 224.
Horst
517. **Factor Analysis.** (5) Methods of analysis. Practice in the use of the centroid method. Applications. Pr., 516 or permission. Formerly 225.
Horst
518. **Test Construction.** (5) Correlational analysis. Statistical bases of test construction and of the use of test batteries. Practice on test construction. Pr., 516 and 517, or permission. Formerly 281.
Horst
520. **Seminar.** (2) Pr., permission.
Staff
521. **Seminar in Statistics.** (2) Pr., permission.
Staff
522. **Seminar in General.** (2) Pr., permission.
Staff
523. **Seminar in History.** (2) Pr., permission.
Staff
524. **Seminar in Physiological.** (2) Pr., permission.
Staff

525. Seminar in Genetic and Comparative. (2) Pr., permission. Staff
 526. Seminar in Applied. (2) Pr., permission. Staff
 527. Seminar in Social. (2) Pr., permission. Staff
 528. Seminar in Experimental. (2) Pr., permission. Staff
 529. Seminar in Clinical. (2) Pr., permission. Staff
 530. Seminar in Theory. (2) Pr., permission. Staff
 Seminars may be repeated for credit.
 531. Seminar in Learning and Motivation. (2) Pr., permission. Staff
 535. Proficiency Evaluation. (2) Fundamental role of systematic proficiency evaluation programs in industry. Development and administration of merit rating programs. Objective measures of employee proficiency. Statistical problems and techniques involved in efficient employee evaluation programs. Pr., 335, 413. Formerly 262. Horst
 536. Motivation and Morale in Industry. (2) Techniques for evaluating employee morale. Financial and nonfinancial techniques for employee motivation. Experimental and statistical procedures necessary for obtaining definite results. Administrative aspects of motivational and morale building programs. Pr., 335, 413. Formerly 264. Horst
 545. Psychology of Social Attitudes. (5) Theory and techniques of attitude-scale construction. Scaling by the method of equal-appearing intervals, the method of summated ratings, and scale analysis. Applications of attitude scales in education, industry, and the social sciences. Determinants of attitudes and experimental studies of attitude change. Pr., 301 or permission. Formerly 128. Edwards
 546. Personality. (3) A survey of theories of personality development. The psychodynamics of personality organization. Pr., permission. Formerly 242. Levin
 581. Individual Testing (Children) (5) The construction, administration, and scoring of individual mental tests used with children. Pr., 306, 413, and permission. Formerly 228. Heathers
 582. Individual Testing (Adults) (5) The construction, administration, and scoring of clinical psychological tests used with adults. Pr., 305, 413, and permission. Formerly 229. Heathers
 583. Individual Testing (Infant and Preschool) (5) A lab course in administration and interpretation of individual psychological examinations of infants and preschool children. Pr., 581, 582, and/or permission. Formerly 139. Staff
 585. Psychology of Physically Handicapped Children. (3) Needs, personality pattern, and response to training techniques of cerebral palsy, polio, deaf and blind children. Pr., permission. S. Smith
 588. Psychopathology. (3) Survey of major historical and contemporary theories of psychopathology and research relative to the main categories of the behavior disorders. Pr., 501. Formerly 226. Bijou
 589. Survey of Psychotherapies. (5) Survey and evaluation of current theory, problems, and techniques in psychotherapy: non-directive, directive, psychoanalytic, hypnotherapy, narcosisynthesis, supportive, etc. Pr., 588, 595. Levin
 591. Projective Personality Tests. (3) Theory of projective tests. Practice in scoring and interpreting projective tests with emphasis on the Rorschach. Pr., 228 or 305 or permission. Formerly 230. Strother
 592. Projective Personality Tests. (5) Training in interpretation of normal Rorschach records. Review of literature on use of the Rorschach in psychopathology. Pr., 591 or permission. Formerly 231. Strother
 595. Psychological Diagnosis. (5) Provides instruction in selection, administration, and interpretation of diagnostic psychological tests. Open only to second year students in clinical psychology. Pr., permission. Formerly 252. Strother
 596. Field Work in Clinical Psychology. (*) A course to provide field training in clinics and institutions for graduate students in clinical psychology. Not to exceed 5 credits in any one quarter. May be repeated. Pr., permission. Formerly 257. Staff
 599. Survey of Clinical Psychometrics. (2) A survey of the nature, development, and clinical application of psychological tests. Pr., permission Graduate School of Social Work. Formerly 205. Strother
 600. Nonthesis Research. (*) When registering, please indicate name of staff member with whom research will be done. Pr., permission. Formerly 300. Staff
 Thesis. (*)

RADIO EDUCATION

Associate Professor Adams

200. Introduction to Radio. (5) History of broadcasting, organization, and regulation of radio industry; commercial aspects; social, educational, and cultural responsibilities of radio. Pr., sophomore standing. Formerly 70, 71, 72.
 205. Survey of Television. (3) History of television; possibilities and limitations; organization and operations of the television station; elements of television programming. Pr., sophomore standing. Formerly 56.
 380. Station Management. (3) Pr., permission. Formerly 169.

Radio Courses in Other Departments

- Drama 441, 442, 443. Radio Acting and Production. (2, 2, 2)
 Drama 444, 445, 446. Radio Writing. (3, 3, 3)
 Journalism 360. Radio News Writing. (3)
 Journalism 361. Radio Advertising. (3)
 Music 314. Music in Broadcasting. (3)
 Speech 260. Radio Speech. (3)
 Speech 261. Advanced Radio Speech. (3)
 Speech 462. Radio Production Methods. (3)
 Speech 463. Radio Program Building. (3)

RESERVE OFFICERS TRAINING PROGRAM

AIR SCIENCE AND TACTICS

(Air Force ROTC)

Majors Spawm, James, Miller, Smith; Captain Waddell; First Lieutenant Ray; Warrant Officer Watts; Master Sergeants Galloway, Bean, McGee, Paquette; Technical Sergeants Kepner, Elder

The instruction for the first two years, together with that provided for the third and fourth years, constitutes the courses prescribed by the department of the Air Force for institutional units of the Air Force Reserve Officers Training Corps. The advanced courses, those of the third and fourth years, are offered to selected students who have completed the first two years (basic course) of instruction and training or have been granted credit for its equivalent in accordance with existing regulations.

First Year

- 131, 132, 133. Air Science I—Basic. (2, 2, 2) Military policy of U. S.; National Defense Act and ROTC; military organization; hygiene and first aid; maps and aerial photographs; evolution of warfare; military psychology and personnel management; geographical foundations of national power; military problems of the U. S.; military mobilization and demobilization; leadership, drill, and exercise of command. Formerly 30A, B, C.

Second Year

- 281, 282, 283. Air Science II—Basic. (Aircraft Maintenance Engineering.) (2, 2, 2) Aerodynamics and propulsion; weather and navigation; applied air power; aircraft maintenance engineering (the maintenance mission, reciprocating engines, jet propulsion engines, compound engines); leadership, drill, and exercise of command. Formerly 80A, B, C.
 291, 292, 293. Air Science II—Basic. (Administration and Supply.) (2, 2, 2) Aerodynamics and propulsion; weather and navigation; applied air power; Air Force administration and supply (Air Force publications, military correspondence, pay and allowances, organizational records; leadership, drill, and exercise of command). Formerly 81A, B, C.

Third Year

- 381, 382, 383. Air Science III—Advanced. (Aircraft Maintenance Engineering.) (3, 3, 3) Logistics: air operations; aircraft maintenance engineering (technical publications, aircraft maintenance inspection system, aircraft fuels and fuel systems, aircraft oil systems, aircraft electrical systems, aircraft propellers, aircraft structures, aircraft hydraulic systems, instruments and miscellaneous systems); psychology of leadership; voice and command; field laboratory for leadership. Formerly 130A, B, C.
 388. Air Science III—Advanced Camp. (Summers only.) (3) Advanced Air Reserve Officers Training Corps' Camp. Six weeks' intensive study at an Air Force base in the field of specialization.
 391, 392, 393. Air Science III—Advanced. (Administration and Supply.) (3, 3, 3) Logistics: air operations; administration (individual records, base administration, nonappropriated funds, special administrative responsibilities, motor transportation); supply (Air Force supply, general supply); psychology of leadership; voice and command; field laboratory for leadership. Formerly 131A, B, C.

Fourth Year

- 481, 482, 483. Air Science IV—Advanced. (Aircraft Maintenance Engineering.) (3, 3, 3) Military administration; military teaching methods; Air Force management; aircraft maintenance engineering (organizational phases of Air Force maintenance and maintenance supply, ground service equipment, organizational and field maintenance and the work of the air inspector, special maintenance procedures of engine operation and conditioning, cruise control and test flight); leadership, drill, and exercise of command. Formerly 180A, B, C.
 491, 492, 493. Air Science IV—Advanced. (Administration and Supply.) (3, 3, 3) Military administration; military teaching methods; Air Force management; Air Force administration and supply with special reference to air staff work (nature of staff organization, study by various administrative and staff functions, supply staff functions); leadership, drill, and exercise of command. Formerly 181A, B, C.

MILITARY SCIENCE AND TACTICS (ARMY ROTC)

Colonel Jensen, Med. Corps; Lieutenant Colonels Ledebor, Snyder; Majors Backstrom, Flanagan, Murray, Wahl, Wolcott; Captains Alexander, Barbee, Carter, Connor, Fore, Johnson, Lamull, Rhea

The instruction for the first two years, together with that provided for the third and fourth years, constitutes the courses prescribed by the Department of the Army for institutional units of the Army Reserve Officers Training Corps. The advanced courses, those of the third and fourth years, are open to selected students who have completed the first two years (basic course) of instruction and training or have been granted credit for its equivalent in accordance with regulations.

First Year

- 101, 121, 141. **Military Science I—Basic (Infantry, Antiaircraft Artillery, Transportation Corps, Quartermaster Corps, Corps of Engineers).** (2, 2, 2) Military organization; military policy of the U. S.; National Defense Act and ROTC; evolution of warfare; maps and aerial photos; military psychology and personnel management; first aid and hygiene; geographical foundations of national power; military problems of the U. S.; military mobilization and demobilization; leadership, drill, and exercise of command. Formerly 1A, B, C.
- 111, 131, 151. **Military Science I—Basic (Medical Corps).** (1, 1, 1) World situation, national defense and ROTC; military obligations of citizenship; organization of the Army and Medical Department; courtesies and customs of the service; military law; military training methods; medical military history; and military administration. Formerly 11A, B, C.

Second Year

- 201, 221, 241. **Military Science II—Basic (Infantry).** (2, 2, 2) Leadership, drill, and exercise of command; organization; weapons; marksmanship; technique of fire and rifle squad; combat formations; scouting and patrolling; tactics of rifle squad. Formerly 51A, B, C.
- 202, 222, 242. **Military Science II—Basic (Antiaircraft Artillery).** (2, 2, 2) Leadership, drill, and exercise of command; introduction to antiaircraft artillery automatic weapons; characteristics, capabilities, and limitations of antiaircraft artillery automatic weapons; service of the piece—automatic weapons fire unit; introduction to antiaircraft artillery guns; characteristics, capabilities, and limitations of 90-mm antiaircraft artillery guns; service of the piece—90-mm antiaircraft artillery guns. Formerly 52A, B, C.
- 203, 223, 243. **Military Science II—Basic (Quartermaster Corps).** (2, 2, 2) Leadership, drill, and exercise of command; organization for supply in the army; organization and functions of quartermaster corps; classification of supplies, use of supply catalogues and bases of allowances; property accountability and responsibility; research and development of supplies in quartermaster corps; organization, functions, and operation of quartermaster units; unit and organizational supply. Formerly 53A, B, C.
- 204, 224, 244. **Military Science II—Basic (Transportation Corps).** (2, 2, 2) Leadership, drill, and exercise of command; introduction to transportation corps; economics of military transportation; military highway transport; highway organization and operation. Formerly 54A, B, C.
- 205, 225, 245. **Military Science II—Basic (Corps of Engineers).** (2, 2, 2) Leadership, drill, and exercise of command; history and traditions of corps of engineers; characteristics of weapons; camouflage; defense against chemicals; explosives and demolitions; hand tools and rigging; mines and booby traps; organization and tactics of small units; organization of the ground and field fortifications. Formerly 56A, B, C.
- 211, 231, 251. **Military Science II—Basic (Medical Corps).** (1, 1, 1) World situation, national defense and ROTC; organization and employment of medical service of a field army; duties of the surgeon; medical service, zone of interior and zone of communications; medical supply; map reading; health and national security; first aid, bandaging, and splinting. Formerly 61A, B, C.

Third Year

- 301, 321, 341. **Military Science III—Advanced (Infantry).** (3, 3, 3) Leadership, drill, and exercise of command; organization; weapons; gunnery; communications; combat intelligence; estimate of situation and combat orders; field fortifications; tactics of rifle and heavy weapons, platoons and companies. Formerly 101A, B, C.
- 302, 322, 342. **Military Science III—Advanced (Antiaircraft Artillery).** (3, 3, 3) Leadership, drill, and exercise of command; antiaircraft artillery tactics; basic gunnery (antiaircraft guns); basic gunnery (automatic weapons); communications; individual weapons and marksmanship; motors and transportation; organization; troop movements. Formerly 102A, B, C.
- 303, 323, 343. **Military Science III—Advanced (Quartermaster Corps).** (3, 3, 3) Leadership, drill, and exercise of command; station supply; depot supply; storage, warehousing and materials handling; procurement, storage, and distribution of petroleum products. Formerly 103A, B, C.
- 304, 324, 344. **Military Science III—Advanced (Transportation Corps).** (3, 3, 3) Leadership, drill, and exercise of command; organization of the transportation staff sections; organization and operation of railroads (zone of interior); military railway service; movements; port operations (ports of embarkation and debarkation); stevedore operations; harbor craft and marine maintenance; highway transport service organization (theater of operations); individual weapons and marksmanship. Formerly 104A, B, C.
- 305, 325, 345. **Military Science III—Advanced (Corps of Engineers).** (3, 3, 3) Leadership, drill, and exercise of command; bridge design and classification; engineer signal communications; engineer combat intelligence; engineer supply; military roads and runways; organization of engineer units; organization of combat divisions; tactics of engineer units; vehicle operation and maintenance; water supply; individual weapons and marksmanship. Formerly 106A, B, C.

- 311, 331, 351. **Military Science III—Advanced (Medical Corps).** (1, 1, 1) World situation, national defense and ROTC; military preventive medicine; field medicine and surgery; army career program. Formerly 111A, B, C.
360. **Military Science—Advanced Camp.** (3) Offered in summer only. Formerly 150.

Fourth Year

- 401, 421, 441. **Military Science IV—Advanced (Infantry).** (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; organization; command and staff; communications; motors and transportation; supply and evacuation; troop movements; new developments; the military team; tactics—infantry battalion in attack and defense. Formerly 151A, B, C.
- 402, 422, 442. **Military Science IV—Advanced (Antiaircraft Artillery).** (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; antiaircraft artillery material; antiaircraft artillery tactics, advanced; command and staff; combat intelligence; gunnery; military team; new developments; supply and evacuation; field artillery capabilities and employment (familiarization). Formerly 152A, B, C.
- 403, 423, 443. **Military Science IV—Advanced (Quartermaster Corps).** (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; fiscal procedures; procurement procedures; command and staff; combat intelligence; technical intelligence; organization and functions of the combatant arms; organization and functions of the technical services; quartermaster operations in the zone of the interior; quartermaster operations in the theater of operations. Formerly 153A, B, C.
- 404, 424, 444. **Military Science IV—Advanced (Transportation Corps).** (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare; leadership, drill, and exercise of command; military railway service (theater of operations); highway transport operations (theater of operations); highway traffic regulations and control (theater of operations); movements control (theater of operations); logistics; overseas supply; command and staff; combat intelligence; responsibilities of a transportation corps officer. Formerly 154A, B, C.
- 405, 425, 445. **Military Science IV—Advanced (Corps of Engineers).** (3, 3, 3) Military administration; military law and boards; military teaching methods; psychological warfare, leadership, drill, and exercise of command; engineer support for the Air Force; engineer support for the communication zone; engineer support for the type field army; command and staff; construction, utilities, and job management; motor movements; river crossing operations. Formerly 156A, B, C.
- 411, 431, 451. **Military Science IV—Advanced (Medical Corps).** (1, 1, 1) World situation, national defense and ROTC; military preventive medicine; medical aspects of atomic warfare; chemical warfare; military psychiatry; personnel management; military medical research development; organized reserve corps; and mobilization. Formerly 161A, B, C.

NAVAL SCIENCE

Captain Emory; Commander Hammer; Major Ditta; Lieutenants Geismans, Minnick, Jerbert

First Year

111. **Naval Orientation.** (3) Naval organization, courtesy, and customs. Naval regulations. Ship construction and characteristics. Standard ship organization. Naval aviation. Formerly 1.
112. **Naval Orientation.** (3) A continuation of the orientation study of the various branches of the Navy; undersea, amphibious, logistics, communications, security, intelligence. Leadership. U.S. naval history from 1770-1941. Formerly 2.
113. **Naval Orientation.** (3) U.S. naval history, 1941-1945. Seamanship, Rules of the Road. Formerly 3.

Second Year

211. **Naval Weapons.** (3) Principles of gun construction, ammunition components, gun assemblies, automatic guns, torpedoes, mines, rockets, aviation ordnance. Formerly 51.
212. **Fire Control.** (3) Surface fire control, nuclear explosives, antiaircraft fire control. Formerly 52.
213. **Applied Naval Electronics.** (3) Advanced fire control, radar, sonar, CIC, shore bombardment, guided missiles. Formerly 53.

Third Year

311. **Piloting.** (3) Navigation instruments, compasses, chart reading, the sailings, piloting, electronic navigation, Loran equipment, maneuvering board. Formerly 101.
312. **Navigation.** (3) Rules of the Nautical Road, meteorology, theory of celestial navigation. Formerly 102.
313. **Celestial Navigation.** (3) Celestial navigation (advanced), navigator's daily work at sea. Formerly 103.

(Marine Corps)

- 312M. **History of the Art of War.** (3) Introduction to the art of war, a historical study of the causes and effects of war, the development of tactics and weapons as shown by a study of specific battles in European history. Formerly 104M.

- 313M. *History of the Art of War.* (3) History of the art of war (continued). A historical study of battles from 1920-1945. Introduction to U.S. military history and policy, a study of campaigns and battles from 1776-1860. Formerly 105M.

Fourth Year

411. *Naval Machinery.* (3) Marine engineering installations, boilers, power plants, auxiliary machinery, turbines, distillers, refrigeration plants. Formerly 151.
 412. *Diesel Engines and Ship Stability.* (3) Diesel engines, aircraft engines, stability, damage control, loading conditions, buoyancy. Formerly 152.
 413. *Naval Administration and Leadership.* (3) Naval law, naval courts-martial, practical application of leadership principles, duties and responsibilities of officers. Formerly 153.

(Marine Corps)

- 411M. *United States Military History and Policy.* (3) A study of the development of U.S. military policy, a study of the tactics of U.S. forces in selected battles and campaigns from 1860-1920. Formerly 155M.
 412M. *Amphibious Warfare.* (3) A brief history of amphibious warfare development, a detailed study of the principles of amphibious warfare techniques. Formerly 156M.
 413M. *Amphibious Warfare.* (3) A study of amphibious warfare (continued), logistics, operation orders. A study of the Gallipoli campaign and of the amphibious campaigns of World War II. Formerly 157M.

(Supply Corps)

- 411S. *Introduction to Supply and Supply Ashore.* (4) Supply organization, material procurement, receipt, expenditures, and inventory control. Formerly 158S.
 412S. *Supply Ashore (Continued) and Supply Afloat.* (4) Accounting reports and returns. Receipt and storage of material afloat. Formerly 159S.
 413S. *Supply Afloat (Continued).* (4) Expenditure of material afloat, reports and returns; commissary, ship's store, clothing and small stores. Formerly 160S.

ROMANCE LANGUAGES AND LITERATURE

Professors Nostrand, Chessie, Garcia-Prada, Goggio, W. Wilson; Professors Emeriti Frein, Helmling, Umbrey; Associate Professors Simpson, Vargas-Baron; Assistant Professors Creore, David, Guiguet, A. C. Keller, Whittlesey, C. Wilson; Instructors J. P. Keller, Politzer, Esteves

The department wants to place each student in whatever course will best meet his individual needs, though no duplicate credit can be granted for duplicate class work. A placement test will gladly be given to any entering student who asks for it. Any of the prerequisites stated can be waived, at the instructor's discretion, and indeed the student with an "A" or high "B" standing is encouraged to skip one or more quarters between courses 101 and 301.

The first two high school years of French or Spanish are to be regarded as corresponding to courses 101-102, 103, at this University, the third high school year as corresponding to courses 201, 202, 203, and a fourth high school year, if devoted to advanced composition and conversation, as equivalent to courses 301, 302, 303. Students presenting one high school semester only of a language should begin with course 101 and the following; with 2 semesters only, courses 121-201 and following; with 3 semesters only, 103 or 121-201 and following; with 4 semesters, courses 201 and following.

In case a foreign language must be taken to satisfy an entrance deficiency of two high school units (i.e., four semesters), 15 quarter credits or the equivalent will be required, and students who enter with two semesters of high school French or Spanish will be required to take courses 121 and 201; with three high school semesters, course 103.

Terminal credit in course 101 (not 121) may be granted by the executive officer upon recommendation of the student's major department, where this clearly serves the best interest of the student's education. For any other exception involving credit, the student must petition the Graduation Committee, using the blank provided for this and obtaining the endorsements of the department concerned and his major department.

Romance Linguistics and Literature

- 334, 335, 336. *Comparative Literature of France, Italy, and Spain in English.* (3, 3, 3) A course showing the influence of each literature upon the others and their contribution to human thought. May be counted as an elective in either French, Italian, Spanish, or English, but 3 credits only may be applied toward the minimum requirement in literature for the major or minor in any of the Romance Languages. May be entered any quarter. Lectures and reading. No prerequisites. Formerly 34, 35, 36 and 134, 135, 136. Goggio

Courses for Graduates Only

- 505, 506, 507. *Romance Linguistics.* (2, 2, 2) Linguistics as a physical and social science. Brief history of the Romance languages and present-day problems of Romance linguistics. Politzer
 584, 585, 586. *Seminar in Romance Culture.* (3, 3, 3) Individual and collective research in the evolution of concepts common to Romance literature. Open to graduates of this and other departments. Formerly 284, 285, 286. Staff

French

- 101-102, 103. Elementary. (5-5, 5) Pr., for 103 is 102 with a grade not less than "C," or three high school semesters, or equivalent. See 121. Formerly 1-2, 3.
- 101-102. Elementary. (10) An intensive study of beginning French combining the work of French 101 and 102 into one quarter. Formerly 1-2. Staff
- 105-106. Elementary. (5-5) A course designed for the rapid acquisition of a reading knowledge of French. For graduates and specially qualified undergraduates. No auditors. Formerly 1X-2X.
- 121-. Basic Grammar Review. (5) Refresher course; should be taken instead of 103 by those who have received a grade lower than "C" in French 102 and by students with two semesters of French in high school. No student may receive credit for both French 103 and 121; nor will credit for either of these courses be granted to a student who presents more than 3 semesters of high school French. No credit for 121 until 201 or equivalent has been completed. Formerly 21. Staff
- 201, 202, 203. Intermediate. (3, 3, 3) Modern texts, composition, functional grammar. Pr., for 201 is 103 or 121, or four semesters in high school, or equivalent. Formerly 4, 5, 6.
- 210, 211. Elementary French Conversation. (2, 2) Pr., 103 or equivalent; 210 or permission for 211. Formerly 10, 11. Staff
- 218, 219, 220. Survey of French Literature and Its Background. (2, 2, 2) Its development and universal significance as seen through literary masterpieces, studied in English translation. (This course does not count as credit toward a major in French.) Formerly 118, 119, 120. Chessex
- 237, 238, 239. Lower-Division Scientific French. (3, 3, 3) Class reading with emphasis on constructions and scientific terms. For upper-division scientific French, see 337, 338, 339. Pr., 201 or equivalent. Formerly 37, 38, 39. Whitlesey
- 301, 302, 303. Advanced Composition and Conversation. (2, 2, 2) The first half of 301 will be given to an intensive review of grammar at the intermediate level. Pr., 203 or equivalent. Formerly 101, 102, 103. Chessex, David
- 304, 305, 306. 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., 203 or equivalent. Formerly 104, 105, 106. Chessex
- 307, 308. Themes (2, 2) Writing of original compositions. Pr., 302 or equivalent. Formerly 107, 108. Staff
- 327, 328, 329. Advanced Conversation. (2, 2, 2) For majors and others admitted by the instructor. Pr., 301 or equivalent. Formerly 127, 128, 129. Chessex, David
- 337, 338, 339. Upper-Division Scientific French. (2, 2, 2) Individual conferences. Students read material in their own fields. Pr., 237, 238, or 239 with grade of "B" or permission. Formerly 137, 138, 139. Whitlesey
341. Phonetics. (3) Analysis of sounds, intonation, rhythm; training in correct and natural pronunciation. Pr., 103 or equivalent. Formerly 41. Creore
- 358, 359. Advanced Syntax. (2, 2) From the teacher's standpoint. Should precede the teacher's course. Pr., 303 or 307. Formerly 158, 159. Staff
390. Supervised Study. (2-5, maximum 20) Pr., permission of executive officer. Formerly 190. Staff
- 421, 422, 423. Prose. (3, 3, 3) 421: Renaissance and classical prose; romans précieux and psychological novel; memoirs. 422: Eighteenth century and Romantic prose; short story and psychological novel. 423: Contemporary prose; short story and novel. Pr., 203 or equivalent. Formerly 121, 122, 123. Simpson, Guiguet, C. Wilson
- 431, 432, 433. Lyric Poetry. (2, 2, 2) 431: Renaissance and classical period. 432: Eighteenth century and Romanticism. 433: The Parnassians and Symbolists, contemporary poetry. Pr., 203 or equivalent. Formerly 131, 132, 133. Creore
- 441, 442, 443. Drama. (3, 3, 3) 441: Classic: Medieval, Renaissance, and Classic drama, miracles, mysteries, Garnier, Rotrou, Corneille, Racine. 442: Romantic: Eighteenth century and Romantic drama, Lesage, Voltaire, Beaumarchais, Hugo. 443: Post-Romantic: Modern drama, Becque, Rostand, Courteline, Porto Riche, Claudel, Romans, Camus. Pr., 203 or equivalent. Formerly 141, 142, 143. David, C. Wilson, Creore

Courses for Graduates Only

512. Old French Reading. (3) Reading of material illustrative of phonological and morphological principles. Pulitzer
513. Old French Literature. (3) Literary backgrounds; reading and discussion of selected texts. Simpson
531. Literary Problems. (2-5, maximum 20) Work to be done through conference. (Indicate field when registering: A, seventeenth century; B, eighteenth century; C, nineteenth century; D, twentieth century.) Formerly 290. Staff
- Not offered in 1950-1951: 424, 425, 426, Modern Prose Fiction; 444, 445, 446, Drama; 451, 452, 453, Moralists and Essayists; 481, 582, 583, Problems and Methods of Literary History; 501, 502, 503, French Renaissance Literature.

Italian

- 101-102, 103. Elementary. (5-5, 5) Formerly 1-2, 3. Goggio
 210, 211. Elementary Italian Conversation. (2, 2) Pr., 103 or permission, 210 for 211. Goggio
 311, 312, 313. Modern Italian Literature. (2-3 each) Prose and poetry of the eighteenth and nineteenth centuries. Composition. Pr., 103 or 102 with grade of "B" or permission. Formerly 111, 112, 113. Goggio
 390. Supervised Study. (2-5, maximum 20) Pr., permission of executive officer. Formerly 190.
 481, 482. 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. Formerly 181, 182. Goggio
 484. Renaissance Literature of Italy in English. (2) Lectures and collateral reading. May be counted as an elective in English major or minor. Formerly 184. Goggio

Courses for Graduates Only

512. Old Italian Reading. (3) Reading of material illustrative of phonological and morphological principles. Supplements Romance Linguistics 505, 506, 507. Politzer
 513. Old Italian Literature. (3) Literary backgrounds. Reading and discussion of selected texts. Supplements Romance Linguistics 505, 506, 507. Goggio
 Not offered in 1950-1951: 321, 322, 323, The Italian Novel; 531, 532, 533, History of Old Italian Literature; 521, 522, 523, Italian Literature of the twelfth to fifteenth centuries.

Portuguese

- 101-102, 103. Elementary. (5-5, 5) Formerly 1-2, 3.
 201, 202, 203. Intermediate. (3, 3, 3) Modern texts, composition, functional grammar. Pr., 103 or permission. Formerly 4, 5, 6.
 300. Intensive Reading Course. (5) Intensive reading of Brazilian literature for the purpose of acquiring a reading knowledge of Portuguese. Pr., Spanish 301 or permission of the instructor. Formerly 100.
 390. Supervised Study. (2-5, maximum 20) To be taken with the permission of the executive officer. Formerly 190.
 415, 416, 417. Brazilian Literature and Culture (in English). (2, 2, 2) 415: Colonial Period; 416: Empire; 417: Contemporary Period. Formerly 115, 116, 117.

Provençal

534. Old Provençal. (3) Formerly 234. Simpson

Spanish

- 101-102, 103. Elementary. (5-5, 5) Pr. for 103 is 102 with a grade of not less than "C," or three high school semesters or equivalent. See 121. Formerly 1-2, 3.
 121-. Basic Grammar Review. (5) Refresher course; should be taken instead of 103 by those who have received a grade lower than "C" in Spanish 102 and by students with two semesters of Spanish in high school. No student may receive credit for both Spanish 103 and 121; nor will credit for either of these courses be granted to a student who presents no credit for 121 until 201 or equivalent has been completed. Formerly 21-. Staff
 201, 202, 203. Intermediate. (3, 3, 3) Modern texts, composition, functional grammar. Pr. for 201 is Spanish 103 or 121, or four semesters in high school, or equivalent. Formerly 4, 5, 6.
 210, 211. Elementary Spanish Conversation. (2, 2) Pr., 103 or 121 or equivalent; 210 or permission for 211. Formerly 10, 11. W. Wilson, Keller
 212, 213, 214. Modern Readings. (2, 2, 2) Intensive reading of modern prose and drama. Considerable attention is given to the acquisition of an extensive passive vocabulary. Pr., 203, prior or concurrently. Staff
 215, 216, 217. Latin-American Literature and Its Background. (2, 2, 2) 215: The Pre-Hispanic and Colonial periods; 216: the nineteenth century; 217: the contemporary period. Formerly 115, 116, 117.
 301, 302, 303. Advanced Composition and Conversation. (3, 3, 3) Pr., 203 or equivalent. Formerly 101, 102, 103. W. Wilson
 304, 305, 306. Survey of Spanish Literature. (2, 2, 2) From early times to the present. Pr., 212, which may be taken concurrently with 304. Formerly 104, 105, 106.
 327, 328, 329. Advanced Conversation. (2, 2, 2) Pr., 302 or permission. A required course for teaching majors. Formerly 127, 128, 129.
 358, 359. 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., 302 or equivalent. Formerly 158, 159. W. Wilson
 390. Supervised Study. (2-5, maximum 20) Pr., permission of executive officer. Formerly 190. W. Wilson
 441, 442, 443. Drama. (3, 3, 3) Historical development of the drama in Spain from its beginnings down to the present time. Selected texts, collateral reading and reports. Pr., 203 or equivalent. Formerly 141, 142, 143. W. Wilson

- 471, 472, 473. Individual Spanish Authors. (3, 3, 3) Each course will be devoted to one representative Spanish author of any period, according to the needs of the students. Pr., 306 or equivalent. Formerly 171, 172, 173.
484. The Romantic Movement in Spanish-American Literature. (3) A study of the leading romantic writers of Spanish America (1830-1890). Pr., 203 or equivalent. Formerly 184. Garcia-Prada
485. The Costumbrista Movement in Spanish-American Literature. (3) A study of the leading Costumbrista writers of Spanish America (1860-1900). Pr., 203 or equivalent. Formerly 185. Garcia-Prada
486. The Modernista Movement in Spanish-American Literature. (3) A study of the leading poets, essayists, and novelists of Spanish America (1890-1920). Pr., 203 or equivalent. Formerly 186. Garcia-Prada

Courses for Graduates Only

511. The Poema de Mio Cid. (3) An intensive study of the Poema de Mio Cid. Formerly 221.
512. Epic Poetry. (3) The epic material in old Spanish literature and its later treatment in poetry and drama. Special investigations and reports. Formerly 231.
513. The Spanish Ballad. (3) The origin and evolution of the Spanish ballad.
521. The Renaissance in Spain. (5) Formerly 252.
- Not offered in 1950-1951: 218, 219, 220, Survey of Spanish Literature and Its Background; 451, 452, 453, Spanish Literature since 1700; 481, 482, 483, Spanish-American Literature; 461, 462, 463, Spanish Literature of the Golden Era; 581, Spanish Historical Grammar.

SCANDINAVIAN LANGUAGES AND LITERATURE

Professor Emeritus Vickner; Associate Professors Arestad, Johnson; Acting Associate Johnson

For information about majoring in Swedish, Norwegian, or Danish, see page 154.

The department will place each student in the course for which he is ready and which meets his needs.

Fifteen quarter credits or the equivalent in any one of the four Scandinavian languages will satisfy the entrance deficiency of two high school units.

Swedish

- 100-101, 102. Elementary Swedish. (3-3, 3) The fundamentals of oral and written Swedish. Courses 100-101, 102 may be taken with 104-105, 106 to make 5-credit courses. 100, 101, 102 are hyphenated if 104-105 are not taken. Formerly 1-2, 3. Johnson
- 104-105, 106. Swedish Reading. (2-2, 2) A student who registers for this course should also be enrolled in 100-101, 102. No knowledge of Swedish necessary for registration in 104. Formerly 4-5, 6. Johnson
109. Swedish Literature. (2) Reading in Swedish. Pr., 102. Formerly 9. Johnson
- 220, 221, 222. Introduction to Swedish Literature. (2, 2, 2) An introduction to modern Swedish drama and prose fiction. Pr., 102 or ability to read easy Swedish. Formerly 23, 24, 25. Johnson
- 223, 224, 225. Conversational Swedish. (2, 2, 2) Pr., Swedish 102 or equivalent. Staff
- 226, 227, 228. Swedish Composition. (1, 1, 1) Pr., Swedish 102 or equivalent. Staff
- 300, 301, 302. Modern Swedish Literature. (2, 2, 2) The study of representative works of Strindberg, Fröding, Heidenstam, Lagerlöf, Söderberg, and other recent or contemporary writers. Pr., 222 or equivalent. Formerly 103, 104, 105. Johnson
- 303, 304, 305. Advanced Conversational Swedish. (2, 2, 2) Pr., 225 or equivalent. Staff
- 306, 307, 308. Advanced Swedish Composition. (1, 1, 1) Pr., 228 or equivalent. Staff
490. Supervised Reading. (*, maximum 5) Pr., 302 or permission. Formerly 190, 191, 192. Johnson

Danish

- 100-101, 102. Elementary Danish. (3-3, 3) The fundamentals of oral and written Danish. Courses 100-101, 102 may be taken with 104-105, 106 to make 5-credit courses. 100, 101, 102 are hyphenated if 104-105 are not taken. Formerly Scand. 10-11, 12. Staff
- 104-105, 106. Danish Reading. (2-2, 2) A student who registers for this course should also be enrolled in 100-101, 102. No knowledge of Danish necessary for registration in 104. Formerly Scand. 13-14, 15. Staff
- 220, 221, 222. Introduction to Danish Literature. (2, 2, 2) An introduction to modern drama and prose fiction. Pr., 102 or ability to read easy Danish. Formerly Scand. 20, 21, 22. Staff
- 300, 301, 302. Modern Danish Literature. (3, 3, 3) The reading of representative works from nineteenth and twentieth century Danish literature. Pr., 220, 221, 222 or fair reading knowledge of Danish. Formerly Scand. 106, 107, 108. Staff
490. Supervised Reading. (*, maximum 5) Pr., 302 or permission. Formerly 190, 191, 192. Arestad

Icelandic

- 100-101-102. Elementary Modern Icelandic. (3-3-3) The fundamentals of oral and written modern Icelandic. Formerly Scand. 16-17-18. Sigmar
104-105, 106. Reading Icelandic. (2-2, 2) Formerly 4-5, 6. Sigmar

Norwegian

- 100-101, 102. Elementary Norwegian. (3-3, 3) The fundamentals of oral and written Norwegian. Courses 100-101, 102 may be taken with 104-105, 106 to make 5-credit courses. 100, 101, 102 are hyphenated if 104-105 are not taken. Formerly Scand. 10-11, 12. Arestad
104-105, 106. Norwegian Reading. (2-2, 2) A student who registers for this course should also be enrolled in 100-101, 102. No knowledge of Norwegian necessary for registration in 104. Formerly Scand. 13-14, 15. Arestad
220, 221, 222. Introduction to Norwegian Literature. (2, 2, 2) An introduction to modern drama and prose fiction. Pr., 102 or ability to read easy Norwegian. Formerly 20, 21, 22. Arestad
223, 224, 225. Conversational Norwegian. (2, 2, 2) Pr., Norwegian 102 or equivalent. Staff
226, 227, 228. Norwegian Composition. (1, 1, 1) Pr., Norwegian 102 or equivalent. Staff
300, 301, 302. Modern Norwegian Literature. (*, maximum 3, 3, 3) The reading of representative works of Ibsen, Bjornson, Lie, Garborg, Hamsun, Bojer, and others. Pr., 222 or equivalent. Arestad
303, 304, 305. Advanced Conversational Norwegian. (2, 2, 2) Pr., 225 or equivalent. Staff
306, 307, 308. Advanced Norwegian Composition. (1, 1, 1) Pr., 228 or equivalent. Staff
490. Supervised Reading. (*, maximum 5) Pr., 302 or permission. Formerly 190, 191, 192. Arestad

Courses in English

230. Scandinavian Culture and Institutions. (2) Formerly 30. Arestad
299. Outline of Modern Scandinavian Culture. (1) Upper-division credit to upper-division students. Formerly 99. Arestad
309, 310, 311. The Scandinavian Novel. (2, 2, 2) A study of the sagas and representative novels by Hans Christian Andersen, Kielland, Strindberg, J. P. Jacobsen, Hjalmar Bergman, Hamsun, Undset, Nexø, Lagerlöf, and Gunnarsson. Formerly 109, 110, 111. Arestad, Johnson
380. Ibsen and His Major Plays. (2) Pr., junior standing. Formerly 180. Arestad, Johnson
381. Strindberg and His Major Plays. (2) Pr., junior standing. Formerly 181. Johnson
382. Recent and Contemporary Scandinavian Drama. (2) A study of outstanding twentieth-century plays with an introductory consideration of Ibsen and Strindberg. Formerly 182. Johnson

Courses for Graduates Only

- 501-502, 503. Old Icelandic. (2-2, 2) Formerly 201-202, 203. Johnson
504, 505, 506. History of Scandinavian Literature. (2, 2, 2) Formerly 209. Arestad, Johnson
507. Ibsen. (*, maximum 5) Formerly 205. Arestad
508. The Scandinavian Novel. (*, maximum 5) Arestad
510, 511, 512. Strindberg. (2, 2, 2) Formerly 206. Johnson

SOCIAL WORK, GRADUATE SCHOOL OF

Professor Ferguson; Acting Associate Professor Hunt; Assistant Professors Brown, McCullough, Mills; Acting Assistant Professor Grill; Lecturers Heilbrunn, Hollenbeck; Field Work Supervisors Bradford, Hoskins, Macdonald, Reiss

Permission of School of Social Work Required Before Registration

Preprofessional Undergraduate Courses

300. Field of Social Work. (3) Survey course of the principles and practices in the total field of social work, with a comprehensive picture of available services and future needs. Pr., permission. Formerly 192. Brown and Lecturers
301. Social Security and Social Work. (3) Changing concepts as reflected in reports and legislation for the care and treatment of dependent persons; development and present responsibility of welfare agencies with special reference to Washington State. Pr., permission. Formerly 193. McCullough
302. Problems of Child Welfare. (3) A survey of the social welfare programs relating to the well-being of children, including standards and objectives of foster home care, adoptions and institutional placement, as well as measures affecting children in their own homes. Pr., permission. Formerly 195. Bradford
303. Introduction to Case Work in Public Assistance. (3) Application of principles and policies in effective public assistance practice. Pr., permission. Brown

304. **Case Work Interviewing.** (2) Study of the interview as a basic method in helping people. Analysis of interviews from case records with the objective of identifying the processes and techniques of skillful interviewing. Study of the influence of the purpose and setting of the interview on its nature and course. Pr., permission. Formerly 198. Grill
305. **Health Aspects of Social Work.** (2) The role of social work in collaboration with medicine in the approach to problems of illness from the physical, emotional, and social aspects. Social factors in health problems, and the social worker's responsibility will constitute the major emphasis in this course. Designed principally for social work practitioners. Pr., permission. Formerly 133. Ferguson

Professional Graduate Courses

505. **History of Social Work.** (3) Pr., permission. Formerly 334. Ferguson
506. **Social Work as a Profession.** (3) The origin and nature of social work as a profession; its relation to other professions such as law and medicine; the history and status of its major professional associations; and its relation to the philosophy of human rights as clarified through religions and great documents of the past. Pr., permission. Formerly 340. Ferguson
509. **Readings in Social Work.** (3, maximum 6) Pr., permission. Formerly 320. Staff
510. **Social Case Work.** (3) Study of the case work process in a variety of settings through the analysis and discussion of case records. Consideration of basic principles of interviewing. Development of understanding of motivations in human behavior and application of this understanding in case work. Pr., permission. Formerly 200. Grill
511. **Social Case Work.** (3) Continuation of generic case work theory with emphasis on diagnosis and case work treatment. Pr., 510. Formerly 201. Grill
512. **Social Case Work.** (3) Elaboration and intensification of basic case work concepts and their application in practice in various types of agency structures. Pr., 511. Formerly 202. Grill
515. **Field Work: Family Social Case Work.** (4, maximum 16) Pr., permission. Formerly 215, 216, 217, 218. Staff
520. **Seminar.** (*, maximum 6) Pr., permission. Staff
521. **Social Group Work.** (3) Professional group work as a method and process within the total field of social work; its objectives, techniques, skills and media; criteria for evaluation of results. Pr., permission. Formerly 209. Hollenbeck
530. **Advanced Case Work.** (3) Intensive study of the case work process aimed at deepening and broadening the case worker's knowledge and understanding of the dynamics of human behavior and enabling him to develop greater skill in interviewing. Pr., permission. Formerly 220. Hunt
531. **Advanced Case Work.** (3) A continuation of the intensive study of case material with the emphasis on sound direction in case work treatment. Pr., 530. Formerly 222. Hunt
532. **Advanced Case Work.** (3) Intensive drill in case analysis, seeing the case as a whole, achieving a balanced perspective on the relation between inner and outer forces, and planning appropriate treatment. Pr., 531. Formerly 223. Hunt
535. **Field Work: Advanced Case Work.** (4, maximum 12) Pr., permission. Formerly 226, 228, 229. Staff
536. **Seminar: Supervision.** (3) Functions of the supervisor in case work agencies, as teacher, case consultant, and administrative officer. Review of literature. Study of supervisory processes and techniques through analysis of case material illustrating the three functions of the supervisor. The supervisory relationship, transference and counter-transference in supervision. Management of supervisory load. Pr., permission. Formerly 308. Staff
540. **Psychiatric Social Work.** (3) Course content is a general introduction and orientation to the field of psychiatric social work. The relationship of psychiatric social work to generic case work is brought out, emphasizing the relationship of the psychiatric social worker to the psychiatrist and, in addition, the role of the psychiatric social worker in the clinical child guidance team. How the social worker practices psychiatric case work treatment within the area of his professional competence in the hospital, clinic, or other psychiatric auspice, will be discussed. Case material selected by the instructor and when possible from student's field work placement will be utilized. Pr., permission. Formerly 258. Hunt
541. **Psychiatric Social Work.** (3) Through the seminar method, the content of previous courses and field work experience is synthesized into a concept of psychiatric social work and a philosophy of social case work through the use of material chosen by the instructor and supplemented by students. Pr., 540. Formerly 261. Hunt
545. **Field Work: Psychiatric Social Work.** (4, maximum 16) Pr., permission. Formerly 264, 265, 266, 267. Staff
550. **Medical Social Work.** (3) The generic aspects of case work in the medical setting; the integration of dynamic psychiatric theory of human behavior with medicine and case work; the role of the case worker in relation to that of the physician and other professional persons in the study and treatment of the social, emotional, and physical aspects of the ill person. Extensive use of case material. Pr., 512. Formerly 244. Ferguson
551. **Medical Social Work.** (3) Continuation of 550, with emphasis on analysis of student's own case material, and correlated with original papers based on integration of data from current professional literature in case work and related fields. Participation in clinical demonstration emphasizing the integration of case work, medicine, dentistry, nursing, and dietetics, as presented in the hospital setting and in the clinics. Pr., 550. Formerly 246. Ferguson
555. **Field Work: Medical Social Work.** (4, maximum 12) Pr., 550. Formerly 250, 251, 252, 253. Ferguson, Staff
556. **Medical Information for Social Work.** (2) Physical growth and change of the individual as correlated with factors of emotional and social development. Consideration of specific medical problems. Pr., permission. Formerly 204. Ferguson and Medical Lecturers

557. **Medical Information for Social Work.** (2) A continuation of 556. Pr., 556. Formerly 205.
Ferguson and Medical Lecturers
560. **Case Work with Children in Foster Care.** (2) Pr., permission. Formerly 234. Bradford
561. **Seminar: Social Work with Children.** (3) Pr., permission. Formerly 235. Bradford
565. **Field Work: Social Work with Children.** (4, maximum 12) Pr., permission. Formerly 238, 239, 240, 241. Bradford
570. **Administration of Social Agencies.** (3) Problems of administration that confront the administrator and his staff in any public or private agency; relations with board, staff; problems of finance and budget-making, office management. The dynamic principles of the administrative process will be emphasized. Pr., permission. Formerly 305. Brown
572. **Community Organization for Social Welfare.** (3) The problems involved in bringing about an adjustment between social welfare needs and resources, understanding the social forces of the community, and the methods used by public and private agencies to organize to meet these needs; the interpretation of agency programs to the community, and the place of boards and committees. Pr., permission. Formerly 214. Brown
575. **Field Work: Social Agency Administration.** (4, maximum 12) Pr., permission. Formerly 286, 287, 288, 289. Staff
580. **Introduction to Public Welfare.** (3) Care of needy under poor laws, emergency relief and modern public assistance programs; characteristics of state assistance plans; administration of work relief; federal grants-in-aid; adult probation and parole; vocational rehabilitation services. Pr., permission. Formerly 206. McCullough
581. **The Child and the State.** (2) The development of the rights of the child in relation to those of parents, the responsibility of the state in safeguarding those rights through laws and their administration by agencies; and their significance to family and children's social agencies. Pr., 510. Formerly 208. Bradford
582. **Administration of Social Insurances.** (3) The social insurance movement in the U. S. and selected countries. Present legislation and administrative problems in unemployment compensation and the insurances for the aged, survivors, disabled, and sick. Pr., 580. Formerly 210. McCullough
583. **Public Welfare Administration.** (3) Administrative structure at federal, state, and local levels; federal and state responsibilities in supervision; financing welfare services; research and reporting by welfare departments. Pr., 580. Formerly 270. McCullough
584. **Public Assistance Policy and Method.** (3) Administrative aspects of a public welfare agency program as related to case work services. The development and effective use of policy in agency planning and provision of individualized services as applied to practice. Pr., permission. Formerly 213. Brown
586. **Statistics in Social Work.** (3) Elementary statistical method applied to social welfare problems; sources for continuing statistical reports; interpretation and use of statistics in welfare administration. Pr., permission. Formerly 207. McCullough
587. **Law and Social Work.** (3) The basis of law, its philosophy and development, its broad principles, and the procedure by which it operates, and specific aspects pertinent to social work orientation, including law in relation to the family, children, guardianships, acts against society and property laws. Pr., permission. Formerly 211. Staff
600. **Research.** (3) Methods used in the study of social work practice, program evaluation and community needs and resources; procedures in collection, analysis, and presentation of data. Pr., 586. Formerly 300. McCullough

SOCIOLOGY

Professors Lundberg, Dodd, Faris, Hayner, Schmid; Professors Emeriti Steiner, Woolston; Associate Professors Miller, O'Brien; Assistant Professors Bowerman, Cohen, Jahn, Miyamoto, Sabagh, Schrag; Acting Assistant Professor Klepper; Acting Instructors Miles, Wendling

110. **Survey of Sociology.** (5) Basic principles for understanding social relationships. (Juniors and seniors are advised to take 310 rather than 110.) Formerly 1. Schrag and Staff
223. **Social Statistics.** (5) Methods and sources for quantitative investigation as applied to sociology and related fields. Pr., 110 or 310. Formerly 31. Cohen, Jahn, Miyamoto, Sabagh
230. **Introduction to Human Ecology.** (5) Factors and forces which determine the distribution of people and institutions. (Juniors and seniors take 430.) Pr., 110 or 310. Formerly 55. Cohen, Sabagh, Schmid
240. **Group Behavior.** (5) Socialization of the individual, social processes, and interactions of persons in groups. Pr., 110 or 310, and Psych. 100. Formerly 60. Bowerman, Klapper, Miyamoto
255. **American Housing Problems.** (5) A survey of housing needs, conditions, production, problems, and policies. Emphasis is placed upon the interrelation between the house, neighborhood, and community. Primarily for architecture students, but open to others. Formerly 16. Cohen
270. **Survey of Contemporary Social Problems.** (5) Analysis of processes of social and personal disorganization and reorganization in relation to poverty, crime, suicide, family disorganization, mental disorders, and similar social problems. Pr., 110 or 310. Formerly 27. Faris, Miles, Cavanaugh, Hirabayashi
310. **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 110, if possible. Credit cannot be received for both 110 and 310.) Formerly 100. Schrag and Staff
324. **Machine Techniques in Research.** (5) Theory and practice of tabulating and calculating machines, including mechanical and electronic, in statistics and research. Pr., 10 credits in statistics. Formerly 136. Jahn

331. **Population Problems.** (5) The major quantitative and qualitative problems of population in contemporary society. Pr., 110 or 310. Formerly 150. Sabagh
352. **The Family.** (5) The family as a social institution; personality development within the family; marriage adjustment; changing family patterns; disorganization and reorganization. Pr., 110 or 310. Formerly 112. Bowerman, Miyamoto
353. **Social Factors in Marriage.** (3) Analysis of courtship and marriage interaction; marital adjustments; specific problems of marriage and family life. Pr., 110 or 310. Formerly 114. Bowerman
362. **Race Relations.** (5) Study of interracial contacts and conflicts. Pr., 10 credits in social science. Formerly 142. O'Brien
364. **Rural Community.** (5) Social and economic problems. Pr., 110 or 310. Formerly 144. O'Brien
365. **Urban Community.** (5) Organization and activities of urban groups. Comparative and analytical study. Pr., 110. Formerly 145. Cohen
371. **Criminology.** (5) Individual and social factors in delinquency; history and methods of criminal justice. Field trips to local penal institutions. Pr., 110 or 310. Formerly 120. Schrag
389. **Reading in Selected Fields.** (2 to 5, maximum 15) Open only to qualified undergraduate students by consent of instructor. Formerly 181, 182, 183. Staff
410. **History of Sociological Thought.** (5) Background and trends in sociological thought from Comte to the present. Pr., 110 or 310. Formerly 174. Sabagh
411. **Systematic Sociology.** (3) Acquaintance with dimensional analysis and synthesis of all social data. Pr., permission of instructor. Formerly 175. Dodd
414. **Sociological Theory.** (5) Modern scientific theory applied to social behavior. Sociology as a natural science. Pr., 20 credits in social science. Formerly 178. Lundberg
420. **Methods of Sociological Research.** (5) Investigation of communities, institutions, and social conditions. Field and lab work. Pr., 223 or approved equivalent. Formerly 132. Faris
421. **Methodology: Case Studies and Interviewing.** (3) Pr., 223 and 420. Formerly 236. Klapper
423. **Advanced Social Statistics.** (5) The application of statistical methods to the analysis of sociological data. Pr., 223. Formerly 131. Jahn
425. **Graphic Techniques in Sociology.** (3) Theory and practice of constructing maps and graphs used in sociological research and exhibits. Pr., 223 or approved equivalent. Formerly 135. Schmid
426. **Methodology: Quantitative Techniques in Sociology.** (3) Pr., 223, 420 or 423, or approved equivalent. Formerly 235. Bowerman
427. **Statistical Classification, Measurement, and Prediction.** (3) Principles and methods of scale analysis applied to social attitudes, opinions, and behavior. Pr., 110 or 310, 240, 223, or approved equivalents. Formerly 137. Jahn
428. **Sampling and Experimentation.** (5) Pr., 423. Formerly 138. Jahn
430. **Human Ecology.** (5) Factors and forces which determine the distribution of people and institutions. Pr., 110 or 310. Formerly 155. Schmid, Cohen, Sabagh
432. **Human Migration.** (5) Determining factors and problems in human migration. Pr., 110 or 310. Formerly 151. Sabagh
440. **Primary Interaction and Personal Behavior.** (5) Social sources of cooperative motives; social basis of the self; nature of primary groups; institutional relations in roles, exceptional and unconventional roles; methodology. Pr., 240 or approved equivalent. Formerly 160. Faris
442. **Public Opinion.** (3) The nature of public opinion, how it is formed, and how it is measured. The operation of public opinion polls. Pr., 240 or approved equivalent. Formerly 162. Klapper
443. **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., 240 or approved equivalent. Formerly 163. Klapper
445. **Social Movements.** (3) Social movements as collective enterprises to establish new social orders. Types, formation, and organization of movements. Pr., 240 or approved equivalent. Formerly 260. Miyamoto
446. **Social Adjustment of the Worker.** (3) Adjustments worker makes during span of work life; cultural background of work values; transition from school to work. Pr., 240 or approved equivalent. Formerly 166. Miller
450. **Contemporary American Institutions.** (5) Study of origins and developments of major social institutions. The sociology of economic structure, political organization, religion, education, recreation, and other institutionalized patterns. Pr., 110 or 310. Formerly 110. Miller
451. **Social Change and Trends.** (5) Forces causing social change, basic trends in American life. Pr., 15 credits in social science. Formerly 111. Miller
455. **Housing in the American Community.** (5) (255 primarily for architecture students.) A survey of housing needs, conditions, production, problems, and policies. Emphasis is placed upon the interrelation between the house, neighborhood, and community. Pr., 110 or 310. Formerly 116. Cohen
456. **Latin-American Social Institutions.** (3) Social gradients and changing institutional patterns in representative Latin-American communities. Pr., 110 or 310. Formerly 149. Hayner
458. **Institutional Forms and Processes.** (5) The process of institutionalization and the general nature of institutions; relation of institutions to persons; institutions and social control; social change and institutional disorganization. Pr., 110 or 310. Formerly 119. Faris
460. **Social Differentiation.** (3) Analysis of societal organization based on sex, age, residence, occupation, community, class, caste, and race. Pr., 110 or 310. Formerly 140. O'Brien
463. **American Negro Community.** (3) Internal structure, class and caste patterns; resultant personality and institutional development. Pr., 110 or 310. Formerly 143. O'Brien

466. **Industrial Sociology.** (5) Analysis of work plants such as factory, office, and store; processes of personality socialization in work plants. Lab practice. Pr., 110 or 310, and upper-division standing. Formerly 146. **Miller**
467. **Industry and the Community.** (3) Impact of industrial organization on community life; the role of business and union leaders in community organization; community programs of management and labor; institutional pressures on industrial operations. Pr., 110 or 310. **Miller**
472. **Juvenile Delinquency.** (5) Family and community backgrounds; institutional treatment; juvenile court and probation; programs for prevention. Pr., 371 or approved equivalent. Formerly 122. **Hayner, Schrag**
473. **Penology.** (5) Social treatment of adult offenders. Pr., 371 or approved equivalent. Formerly 121. **Hayner**
499. **Undergraduate Research.** (2 to 5 each qtr., maximum 15) Open only to qualified undergraduate students by consent of instructor. Formerly 181, 182, 183. **Staff**
- N510, N511, N512. **Departmental Graduate Seminar.** (No credit.) Attendance required of graduate students. Reports on independent research by graduate students and staff members. Meets once each month during regular school year. Formerly 200, 201, 202. **Staff**
- 521, 522. **Seminar in Methods of Sociological Research.** (3, 3) Pr., 223, 414, and 420, or approved equivalents. Formerly 232, 233. **Lundberg**
530. **Advanced Human Ecology.** (3) Pr., 230 or 430, and 15 credits in social science. Formerly 255. **Schmid**
531. **Demography.** (3) Research problems in population and vital statistics. Pr., 331 and 15 credits in social science or approved equivalent. Formerly 250. **Schmid**
543. **Communication Seminar.** (3) Research problems in mass communication. Pr., 25 credits in social science. Formerly 263. **Klapper**
- 550, 551, 552. **Marriage and the Family.** (3, 3, 3) Analysis of marriage and family patterns and problems. Initial emphasis on research findings and methods. Individual research on selected projects. Pr., 352 or approved equivalent. Formerly 210, 211, 212. **Bowerman**
556. **Seminar on Sociological Problems of Latin America.** (3) Critical review of the literature; projects for student research. Pr., 456 or approved equivalent. Formerly 218. **Hayner**
562. **World Survey of Race Relations.** (3) Pr., 25 credits in social science. Formerly 242. **O'Brien**
- 566, 567. **Industrial Sociology Seminar.** (3, 3) Research training in industrial sociology. Readings and field projects. Pr., 466 or approved equivalent. Formerly 246, 247. **Miller**
571. **Correctional Institutions.** (3) Prisons and juvenile reformatories as communities. Pr., 371 or approved equivalent. Formerly 220. **Hayner**
573. **Crime Prevention.** (3) Critical consideration of programs for delinquency prevention. Pr., 371 or approved equivalent. Formerly 222. **Hayner**
600. **Nonthesis Research.** (2-5) Pr., permission of instructor. Formerly 300. **Staff**

Not offered in 1950-51: 412, **Systematic Sociology**; 447, **Social Control**; 457, **Japanese Social Institutions**; 517, **Systematic Sociology Seminar**; 532, **World Migration**; 572, **Analysis of Criminal Careers**.

SPEECH

Professors Rahskopf, Carrell; Professor Emeritus Orr; Associate Professors Bird, Franzke; Assistant Professors Baister, Bangs, Basherville, Crowell, Hile, Hoshor, Nelson, Pence; Instructors Brown, Enquist, Gormley, Grayum, Hogan, Jenks, Loebon, Mumford, Starr, Vinocour, Wagner; Associates Cox, Gannon, Morrison, Poorman, Rauck, Shapley, Smid, Wigley, Wilkins; Fellows Dawson, Godchaux, Handlin, McGrath, Palmer, Sugarman; Lecturer Phillips

General

100. **Basic Speech Improvement.** (5) A training course in fundamental elements of good speech, such as orderly thinking, emotional adjustment, adequate voice, distinct articulation, effective oral use of language. A study of speech as man's primary means of social interaction, with emphasis on the more informal uses of speech in daily life. Frequent conferences with instructor. Required for major or minor in speech. Formerly Speech 1-2. **Hoshor in Charge**
400. **Backgrounds in Speech.** (5) Consideration of the nature of speech as an activity of daily life and as a field of study. Required for major or minor in speech. Formerly Speech 100. **Rahskopf**
495. **Anatomy of the Vocal Organs and Ear.** (5) A lecture and demonstration course on the structure and function of the organs concerned with phonation, articulation, and hearing. Pr., one approved 5-credit course in anatomy, physiology, or zoology. Formerly 195. **Bangs**
498. **Senior Seminar in Speech.** (2) Required for major. Formerly Speech 198. **Rahskopf**
499. **Undergraduate Research.** (2 to 5 each qtr.) Sec. A, Public Address. Sec. B, Voice and Phonetics. Sec. C, Oral Interpretation. Sec. D, Radio Speech. Sec. E, Speech Correction and Hearing. Pr., permission. Formerly Speech 199. **Staff**

Voice and Phonetics

110. **The Speaking Voice.** (5) A fundamental training course in voice and articulation. Formerly Speech 10. **Baister in Charge**
410. **Advanced Voice and Phonetics.** (5) Continuation of 110, with emphasis on the physiology of voice production, the sound system of English, and the improvement of articulation. Pr., 110 or permission. Formerly Speech 110. **Baister**
412. **Experimental Methods in Voice and Phonetics.** (5) A survey of experimental methods and findings. Lectures and demonstrations. Formerly Speech 112. **Baister**

Public Address

120. **Introduction to Public Speaking.** (5) Audience analysis, choice and organization of material, oral style, and delivery. Frequent speeches before the class, followed by conference with instructor. Formerly Speech 20. Franzke in Charge
220. **Public Speaking.** (5) Continuation of 120 with emphasis on organization and delivery. Practice in the preparation and presentation of a variety of types of public speeches based on study of their structure and form. Pr., 120. Formerly 21. Franzke
327. **Extempore Speaking.** (3) Primarily for students in engineering. Not open to students in the College of Arts and Sciences, nor to students who have credit for 120. Formerly Speech 27. Franzke
420. **Advanced Problems in Speaking.** (5) Study of purposes, proof, organization, style, and delivery in public address, with emphasis on the speaker's personal problems and on psychological factors involved in public speaking. Pr., 120. Formerly Speech 120. Hoshor
425. **Public Speaking in America.** (5) A historical and critical study of principal speakers and speeches from 1765 to 1900 and of their relation to American political, social, and intellectual life. A lecture, discussion, and reading course. Formerly Speech 125. Baskerville

Argument and Discussion

230. **Essentials of Argument.** (5) Argument as a technique in the investigation of social problems; evidence, proof, refutation, persuasion. Training in argumentative speaking. Formerly Speech 30. Pence
232. **Principles of Group Discussion.** (3) Study and practice of discussion as an everyday community activity with emphasis on the informal, cooperative, problem-solving methods of committee, conference, and round-table groups. Formerly Speech 32. Crowell
235. **Parliamentary Procedure.** (3) Methods of organizing and conducting public meetings. Based on Robert's *Rules of Order*. Formerly Speech 35. Vinocour
239. **Public Discussion.** (3) Open only to members of the University discussion groups. No more than 3 credits may be earned in one year, and the total credits may not exceed 9. Formerly Speech 39. Pr., permission.
430. **Advanced Argument.** (5) Continuation of 230. Formerly Speech 130. Pr., 230. Pence
436. **Methods of Public Discussion.** (5) Study of the various types of public discussion and practice in their use. Formerly Speech 136. Pr., 120 or 230. Franzke

Oral Interpretation

240. **Oral Interpretation.** (5) Development of fundamental techniques for analysis and reading aloud of prose and poetry. Includes directed listening projects to artists' speech recordings. Required of students seeking a secondary certificate in English. Formerly Speech 42.
249. **Oral Interpretation Workshop.** (2) Selection, integration, and presentation of materials for specific occasions, purposes, and audiences. Involves performance before audiences on and off campus. No more than 2 credits may be earned in one year, and the total cannot exceed 6 credits. Open only to members of the Oral Interpretation Workshop. Formerly Speech 49. Pr., 240 and permission. Hile
440. **Advanced Oral Interpretation.** (5) Study and practice in interpretation of problems peculiar to various types of literature, the needs and interests of specific audiences, and definite themes or points of view. Includes directed listening projects. Formerly Speech 142. Pr., 240 or permission. Hile
445. **Oral Interpretation of Dialects.** (3) Study of the phonetic, vocal, and dictional changes in the common dialects of English found in America and the British Isles; the practice in the interpretation of poetic, dramatic, and narrative material employing them. Formerly Speech 145. Pr., 110 and 240, or permission. Hile

Teaching of Speech

352. **Introduction to the Teaching of Speech.** (2) Deals with the viewpoints, methodology, and curricula of speech education. Observation of teaching procedures. Required of candidates for the Three-Year Secondary Teaching Certificate with a major or minor in speech, and of those preparing for special speech and hearing rehabilitation work in the public schools. Formerly 50. Nelson
355. **Choral Speaking.** (2½) Study and practice in the use of group speaking as a classroom method in teaching speech and literature. Selection and use of prose and poetry materials for group utterance. Formerly Speech 55. Offered Summer Quarter only. Hile, Jenks
- 375X. **Debate and Discussion Problems in High School.** (2½) Evaluation of debate and discussion in high school and consideration of methods of directing them. Specific consideration of debate questions in current use; bibliographies, analyses, briefs. Formerly Speech 133. Offered Summer Quarter only. Pence
- See also Education 375X. **Special Methods in Speech.** (3) Required for Three-Year Secondary Certificate with major or first minor in speech. For upper-division students only. Nelson

Radio Speech

260. **Radio Speech.** (3) Basic microphone techniques, reading of script, announcing, interviews, and talks. Special attention to voice and diction. Formerly Speech 61. Pr., 110 or 240. Bird, Hogan
 261. **Advanced Radio Speech.** (3) Analysis of audience situations, group discussions, audience participation programs. Formerly Speech 62. Pr., 260. Bird, Hogan
 369. **Radio Speech Workshop.** (2) A radio speech performance course providing opportunity for supervised experience in actual broadcasting. No more than 4 credits may be earned in any one year, and the total cannot exceed 6 credits. Formerly Speech 169. Pr., 261 and permission. Bird, Hogan
 462. **Radio Production Methods.** (3) Sound effects, music in broadcasts, studio setup, timing, cutting of scripts, direction of programs. Formerly Speech 162. Pr., 260, 261. Bird
 463. **Radio Program Building.** (3) Adaptation of literary, informational, and persuasive material for radio. Formerly Speech 163. Pr., 260, 261. Bird
- See other radio courses listed in the Department of Radio Education, the School of Drama, and the School of Journalism.

Speech Correction

79. **Speech Clinic.** No credit. Formerly A.
Sec. A. Articulation Problems.
Sec. B. Foreign Dialect.
Sec. C. Stuttering.
Sec. D. Voice Problems.
Sec. E. Hearing Problems.
470. **Introduction to Speech Correction.** (5) Nature and etiology of disorders of speech. Formerly Speech 170. Carrell
471. **Methods of Speech Correction.** (5) Formerly Speech 171. Pr., 470. Carrell
473. **Diagnostic Methods in Speech Correction.** (2) Formerly Speech 173. Pr., 471. Bangs
474. **Clinical Training in Speech Correction.** (1-5) May be repeated for total not to exceed 15 credits. Total undergraduate credits in Speech 474 and 484 together cannot exceed 20. Formerly Speech 174. Pr., 471, 473 (473 may be taken concurrently). Staff
475. **Stuttering.** (2) Nature, etiology, and treatment of stuttering. Formerly Speech 175. Pr., 470 or permission. Carrell

Hearing

480. **Introduction to Hearing.** (5) Description of normal audition; elementary structure and functioning of the hearing mechanism; deficiency types of hearing; effects on speech; considerations of hearing education. Formerly Speech 180. Bangs
481. **Methods in Aural Rehabilitation.** (5) Formerly Speech 181. Pr., 480. Gormley
484. **Clinical Practice in Aural Rehabilitation.** (1-3) May be repeated for total not to exceed 9 credits. Total undergraduate credits in Speech 474 and 484 together cannot exceed 20. Pr., 480 and 481. Formerly 184. Phillips
485. **Medical Backgrounds for Audiology.** (2) Discussion of diseases and injuries of the ear resulting in reduced audition. Formerly Speech 185. Phillips
489. **Audiometry.** (2) Theory and practice of audiometry and other methods of measuring hearing. Formerly Speech 189. Bangs

Courses for Graduates Only

501. **Introduction to Graduate Study in Speech.** (2) Required of all graduate students in speech. Formerly Speech 201. Crowell
521. **Studies in Greek and Roman Rhetoric.** (5) Critical analysis of the writings on rhetoric by Plato, Aristotle, Cicero, Quintilian, and others. Formerly Speech 209. Rahskopf
522. **Studies in Modern Rhetoric.** (5) Critical analysis of the writings on rhetoric by Cox, Wilson, Bacon, Campbell, Blair, Whately, and others. Formerly Speech 210. Pr., 521. Pence
571. **Organic Disorders of Speech.** (5) The course covers the anatomy, neurology, etiology, symptoms, and principles of correction related to the following disorders: cerebral palsy, cleft palate, aphasia, idiopathic language retardation, esophageal speech, and significant neurological diseases in which speech disorders constitute a major symptom. Formerly Speech 271. Pr., 471 or permission. Bangs
600. **Nonthesis Research.** (*) Formerly Speech 306. Thesis.

ZOOLOGY

Professors Martin, Hatch, Svibla; Professor Emeritus Kincaid; Associate Professor Hsu; Assistant Professors Edmondson, Fernald, Osterud, Ray, Whiteley, Zakokar; Instructors Easton, Snyder

Biology

- 101J-102J. General Biology. (5-5) Principles of biology applying to all living forms, illustrated by representatives of major plant and animal groups and introducing man's place in nature. Recommended for teaching majors and for nonmajors in the biological sciences. Three lectures, one quiz, and three hours lab. Formerly 1J-2J. Staff
351. Human Genetics. (3) Genetics of man for premedical students and others in anthropology, psychology, and related fields dealing with human variation. Pr., Bot. 111 or Zool. 111 or equivalent plus junior standing. Hsu
401. Cytology. (3) The cell in structure and function. Three lectures, four hours lab. Pr., permission. Formerly Zool. 101. Hsu
- 401L. Cytology Lab. (3) Must be accompanied by 401. Hsu
408. Cellular Physiology. (3) Functional aspects of protoplasmic structures. Three lectures. Not open to students who received credit for Zool. 108 or 115. Pr., Zool. 400 or permission. Whiteley
- 408L. Cellular Physiology Lab. (2) Must be accompanied by 408. Six hours lab. Not open to students who received credit for Zool. 115L or 108L. Pr., permission.
451. Introduction to Genetics. (3, lecture only; or 5) Pr., 10 credits in biological sciences. Formerly Bot. 108. Roman
452. Cytogenetics. (3, lecture only; or 5) Chromosomal behavior in relation to genetics. Pr., 451, permission. Formerly Bot. 109. Roman
453. Topics in Genetics. (2) Current problems and research methods in genetics. Pr., 451, organic chemistry, and permission. May be repeated for a maximum of 6 credits. Formerly Bot. 110. Roman
472. Principles of Ecology. (3) Population biology including succession, competition, predation, symbiosis, sociality, relationship of community to environment. Pr., 10 hours upper-division zoology credit or permission. Formerly Zool. 172. Edmondson
- 472L. Ecology Lab. (2) Pr., 472 concurrently. Formerly Zool. 172L. Edmondson
473. Limnology. (5) Freshwater biology. Not open to students who received credit for Zool. 108 or 173. Three lectures, six hours lab, field work. Pr., Zool. 111, 112, one year college chemistry. Edmondson
501. Advanced Cytology. (5) Formerly Zool. 201.

Zoology

- 111, 112. General Zoology. (5) The structure of protoplasm, cell theory, structure and function of a typical vertebrate, cell division and lineage, survey of the animal kingdom. Three lectures, four hours lab. Zool. 111 or equivalent, prerequisite to 112. Formerly 1, 2.
114. Evolution. (2) Two lectures. Not open to students who received credit for 16 or 14.
118. Survey of Physiology. (5) Five lectures, no lab. Not open to students who received credit for 11 or 18.
208. Elementary Human Physiology. (5) Three lectures, four hours lab. Pr., freshman chemistry. Not open to students who received credit for 7 or 8.
258. Physiology. (6) Foundation work for physiology of exercise. Not open to students who have received credit for 7 or 8 or 50 or 58. Students who expect to take Anatomy 301 should do so before registering for this course. Four lectures, four hours lab. Pr., high school or freshman chemistry, Zool. 112 or Biol. 102J.
330. Natural History of Marine Invertebrates. (5) The natural history of marine invertebrates. A field and lab course emphasizing the habits, habitats, identification, and interrelationships of marine animals. Pr., 112 or 10 units of Biological Science with permission. Formerly 130.
381. Microtechnique. (4) Not open to students who received credit for 121 or 181. One lecture, six hours lab. Pr., 111, 112, and permission.
383. Museum Technique. (3) Preparation of museum specimens. Not open to students who received credit for 135 or 183. Six hours lab. Pr., permission. Flahaut
400. Introductory Physiology. (5) For majors in biological sciences. Pr., Chem. 232; 10 units of biological science, Physics 106, or high school physics. Formerly 100. Easton
402. History of Zoology. (3) Not open to students who received credit for 131 or 200. Three lectures. Pr., 20 credits in Zoology or permission. Hatch
- 416, 417. Chemical Embryology. (3, 3) An experimental analysis of the mechanics of development on the cytochemical and biochemical level. Three lectures. Pr., 408, 457 (may be taken concurrently). Formerly 116, 117. Whiteley
- 416L, 417L. Chemical Embryology Lab. (2, 2) Must be accompanied by 416, 417. Six hours lab. Pr., permission. Formerly 116L, 117L.
- 433, 434. Invertebrate Zoology. (5, 5) Morphology and phylogeny of invertebrates exclusive of terrestrial arthropods. Not open to students who received credit for 125, 126 or 133, 134. Two lectures, six hours lab, field work. Pr., 111, 112. Ray
435. Parasitology. (5) Animal parasites. Three lectures, six hours lab. Not open to students who received credit for 107 or 135. Pr., 111, 112.

438. *Comparative Invertebrate Physiology*. (3) Not open to students who received credit for 114 or 138. Three lectures. Pr., 400, 434.
- 438L. *Comparative Invertebrate Physiology Lab*. (2) Must be accompanied by 438. Six hours lab. Pr., permission. Formerly 138L.
444. *Entomology*. (5) Structure, classification and economic relations of insects. Not open to students who received credit for 111 or 144. Three lectures, six hours lab. Pr., 111, 112. Hatch
- 453-454. *Comparative Anatomy of Chordates*. (5-5) Not open to students who received credit for 127-128 or 153-154. Three lectures, six hours lab. Pr., 111, 112, 456.
456. *Vertebrate Embryology*. (5) Not open to students who received credit for 105 or 156. Three lectures, six hours lab. Pr., 111, 112. Fernald
457. *Experimental Morphogenesis*. (3) An experimental analysis of the mechanics of development on the morphological level. Not open to students who received credit for 110 or 157. Three lectures. Pr., 456. Fernald
- 457L. *Experimental Morphogenesis Laboratory*. (2) Not open to students who received credit for 110L or 157L. Pr., permission. Fernald
463. *Natural History of Amphibia and Reptiles*. (5) Not open to students who received credit for 129 or 163. Three lectures, six hours lab, field work. Pr., 111, 112. Svihla
464. *Natural History of Birds (Ornithology)*. (5) Three lectures, six hours lab, field work. Pr., 111, 112. Formerly 164. Svihla
465. *Natural History of Mammals*. (5) Three lectures, six hours lab, field work. Not open to students who received credit for 130 or 165. Pr., 111, 112. Svihla
475. *Vertebrate Zoogeography*. (3) Not open to students who received credit for 132 or 175. Pr., 5 hours of natural history. Three lectures. Svihla
498. *Special Problems in Zoology*. (3 or 5) Pr., 30 hours of Zoology and permission. Formerly 199. Staff

Courses for Graduates Only

- †506. *Topics in Experimental Embryology*. (6, may be repeated) Pr., permission. Formerly 206. Staff
- 520, 521, 522. *Seminar*. (1 each qtr.) Formerly 210, 211, 212. Staff
- †533. *Advanced Invertebrate Zoology*. (6) Marine invertebrate animals from the point of view of biological Oceanography. Not open to students who received credit for 225 or 233. Pr., Invertebrate Zoology.
- †536. *Advanced Invertebrate Embryology*. (6) Not open to students who received credit for 213 or 236. Pr., 433, 434, 456.
- †538. *Advanced Invertebrate Physiology*. (6) Pr., permission. Formerly 239.
558. *Comparative Vertebrate Physiology*. (6) Not open to students who received credit for 118 or 258. Pr., 400. Martin
600. *Nonthesis Research*. (*) Formerly 300. Staff

†Offered only at Friday Harbor in cooperation with the oceanographic laboratories.

SUMMARY OF DEGREES AND CERTIFICATES AWARDED

1948-1949

Bachelor's Degrees

B.A. (College of Arts and Sciences).....	837	B.S. in Electrical Engineering.....	104
B.A. (College of Education).....	106	B.S. in Fisheries.....	8
B.A. in Economics and Business.....	670	B.S. in Food Technology.....	2
B.A. in Education.....	2	B.S. in Forestry.....	69
B.A. in Home Economics.....	5	B.S. in Geology.....	2
B.A. in Law Librarianship.....	1	B.S. in Home Economics.....	25
B.A. in Librarianship.....	27	B.S. in Industrial Engineering.....	26
B.A. in Mathematics.....	1	B.S. in Law.....	51
B.A. in Music.....	17	B.S. in Mathematics.....	10
Bachelor of Architecture.....	33	B.S. in Mathematical Statistics.....	9
Bachelor of Business Administration.....	37	B.S. in Mechanical Engineering.....	127
Bachelor of Laws.....	139	B.S. in Metallurgical Engineering.....	6
B.S. (College of Arts and Sciences).....	255	B.S. in Mining Engineering.....	5
B.S. (College of Education).....	27	B.S. in Nursing.....	57
B.S. in Aeronautical Engineering.....	30	B.S. in Pharmacy.....	74
B.S. in Basic Medical Science.....	10	B.S. in Physics.....	3
B.S. in Ceramic Engineering.....	7	B.S. in Zoology.....	13
B.S. in Chemical Engineering.....	44		
B.S. in Chemistry.....	12		
B.S. in Civil Engineering.....	82		
B.S. in Commercial Engineering.....	1		
		Total.....	2934

Advanced and Professional Degrees

Master of Arts.....	106	Master of Science in Electrical Engineering..	5
Master of Arts in Home Economics.....	1	Master of Science in Engineering.....	2
Master of Arts in Music.....	7	Master of Science in Forestry.....	1
Master of Business Administration.....	8	Master of Science in Home Economics.....	5
Master of Fine Arts.....	3	Master of Science in Mathematical Statistics	1
Master of Education.....	6	Master of Science in Metallurgical Statistics	1
Master of Forestry.....	7	Master of Science in Mining Engineering.....	1
Master of Nursing.....	2	Master of Science in Pharmacy.....	3
Master of Science.....	26	Master of Science in Physical Education.....	3
Master of Social Work.....	14	Professional Degree, Electrical Engineer....	1
Master of Science in Aeronautical Engr.....	2	Doctor of Education.....	2
Master of Science in Ceramic Engineering....	2	Doctor of Philosophy.....	26
Master of Science in Chemical Engineering....	16		
Master of Science in Civil Engineering.....	12	Total.....	263

Certificates

Certificate in Nursing Supervision.....	25	Three-Year Secondary Certificate.....	147
Certificate in Public Health Nursing.....	32		
		Total.....	204

SUMMARY OF ENROLLMENT — TOTALS

EXTENSION STUDENTS

Classes.....	9241
Men.....	4258
Women.....	4983
Home Study.....	3556
Men.....	2123
Women.....	1433
Total.....	12797

STUDENTS IN RESIDENCE

Academic Year.....	18667
Summer Quarter (Entire).....	6498
Summer a First Term only.....	618
Summer b Second Term only.....	264
Short Courses.....	159
Education.....	114
Forestry.....	45
Deduct Summer Duplicates.....	4538
Total (Academic Year and Summer).....	21668

SUMMARY OF ENROLLMENT BY CLASSES, UNIVERSITY OF WASHINGTON, YEAR 1948-1949

331

CLASSES	Summer a First Term	Summer b Second Term	Entire Summer Qtr.	Total Individuals	Autumn	Winter	Spring	Total Individuals† Academic Year
FRESHMEN.....	9	6	551	566	3781	3426	2960	4524
Men.....	1	2	395	398	2548	2259	1915	3024
Women.....	8	4	156	168	1233	1167	1045	1500
SOPHOMORES.....	9	3	878	890	3459	3176	2802	3828
Men.....	6	2	669	677	2560	2343	2001	2818
Women.....	3	1	209	213	899	833	801	1010
JUNIORS.....	20	19	1351	1390	3799	3908	3759	4087
Men.....	8	12	1086	1106	3064	3128	3003	3255
Women.....	12	7	265	284	735	780	756	832
SENIORS.....	64	23	1568	1655	3114	3247	3376	3278
Men.....	24	9	1162	1195	2327	2444	2569	2428
Women.....	40	14	406	460	787	803	807	850
GRADUATES.....	285	101	1301	1687	1667	1642	1635	2009†
Men.....	83	46	887	1016	1217	1198	1203	1419
Women.....	202	55	414	671	450	444	432	590
SPECIALS.....	2	..	65	67	124	121	117	182
Men.....	2	..	54	56	105	105	99	157
Women.....	..	..	11	11	19	16	18	25
TRANSIENTS.....	229	112	563	904	..	..	..	..
Men.....	39	24	288	351	..	..	..	..
Women.....	190	88	275	553	..	..	..	..
TOTALS.....	618	264	6277	7159	15944	15520	14649	17908
Men.....	163	95	4541	4799	11821	11477	10790	13101
Women.....	455	169	1736	2360	4123	4043	3859	4807

†To this number add the graduates in Law, Medicine, and Dentistry from the following page.

†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.

SUMMARY OF ENROLLMENT BY SCHOOLS AND COLLEGES, UNIVERSITY OF WASHINGTON, YEAR 1948-1949

COLLEGE	Summer a First Term		Summer b Second Term		Entire Summer Qtr.		Total Individuals		Autumn		Winter		Spring		Total Individuals Academic Year	
Arts and Sciences.....	177		100		2462		2739		8265		8014		7406		9275	
Men.....	41		24		1697		1762		5273		5105		4705		5964	
Women.....	136		76		765		977		2992		2909		2701		3311	
Business Administration*	10		3		1098		1111		2818		2763		2627		3054	
Men.....	6		2		1039		1047		2627		2589		2462		2846	
Women.....	4		1		59		64		191		174		165		208	
Dentistry.....	..	..	..	..	..	..	..	..	103	103	145	145	151	151	152	152
Men.....	..	..	..	..	..	..	..	..	103	103	145	145	151	151	152	152
Women.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Education.....	137		56		336		529		326		374		430		370	
Men.....	27		19		186		232		218		253		287		242	
Women.....	110		37		150		297		108		121		143		128	
Engineering.....	1	1	..	..	587		588		1876		1759		1588		2001	
Men.....	1	1	..	..	586		587		1866		1750		1577		1989	
Women.....	..	..	..	..	1		1		10		9		11		12	
Forestry.....	1	1	..	..	60	60	61	61	358	358	341	341	321	321	378	378
Men.....	1	1	..	..	60	60	61	61	358	358	341	341	321	321	378	378
Women.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Graduate School.....	285		101		1301†		1687†		1667‡		1642§		1635¶		2009¶	
Men.....	83		46		887		1016		1217		1198		1203		1419	
Women.....	202		55		414		671		450		444		432		590	
Law.....	..	..	..	..	221		221		462		398		362		466	
Men.....	..	..	..	..	214		214		446		383		346		449	
Women.....	..	..	..	..	7		7		16		15		16		17	
Medicine.....	..	..	..	..	..		..		141		140		137		141	
Men.....	..	..	..	..	..		..		129		128		126		129	
Women.....	..	..	..	..	..		..		12		12		11		12	
Nursing.....	3		..	..	337		340		309		333		353		494	
Men.....	..	3	..	..	1		1		..		..		..		1	
Women.....	3		..	..	336		339		308		333		353		493	
Pharmacy.....	4	4	4	4	96		104		325		294		289		327	
Men.....	4	4	4	4	85		93		261		241		235		262	
Women.....	..	..	..	..	11		11		64		53		54		65	
GRAND TOTALS.....	618		264		6498		7380		16650		16203		15299		18667	
Men.....	163		95		4755		5013		12499		12133		11413		13831	
Women.....	455		169		1743		2367		4151		4070		3886		4836	

*The College of Economics & Business became College of Business Administration as of Autumn, 1948.

†To this number add 96 graduates in Law School.

‡To this number add 264 graduates in Law, Dentistry, and Medicine.

§To this number add 289 graduates in Law, Dentistry, and Medicine.

¶To this number add 297 graduates in Law, Dentistry, and Medicine and 6 postgraduates in the school of Dentistry.

¶To this number add 273 graduates in Law, Dentistry, and Medicine and 6 postgraduates in the school of Dentistry.

SUMMARY OF ENROLLMENT BY CLASSES—DENTISTRY, LAW, MEDICINE—UNIVERSITY OF WASHINGTON, YEAR 1948-1949

YEAR	Summer a First Term	Summer b Second Term	Entire Summer Qtr.	Total Individuals	Autumn	Winter	Spring	Total Individuals Academic Year
FIRST.....	4	4	305	284	268	309
Men.....	4	4	293	272	256	296
Women.....	12	12	12	13
SECOND.....	66	66	184	189	136	184
Men.....	64	64	176	181	130	176
Women.....	2	2	8	8	6	8
THIRD.....	114	114	159	152	184	202
Men.....	111	111	153	146	176	196
Women.....	3	3	6	6	8	6
FOURTH.....	25	25	58	58	56	58
Men.....	24	24	56	57	55	56
Women.....	1	1	2	1	1	2
GRADUATE.....	{ 91 96 }*	{ 91 96 }*	{ 246 264 }*	{ 272 289 }*	{ 280 297 }*	{ 256 273 }*
Men.....	{ 91 96 }*	{ 91 96 }*	{ 246 264 }*	{ 272 289 }*	{ 280 297 }*	{ 256 273 }*
Women.....	{ 5 5 }*	{ 5 5 }*	{ 18 18 }*	{ 17 17 }*	{ 17 17 }*	{ 17 17 }*
POST GRAD. DENT..	6	6
Men.....	6	6
Women.....
SPECIAL.....	2	2	.. ..	.. ..	.. ..	.. ..
Men.....	2	2	.. ..	.. ..	.. ..	.. ..
Women.....
TRANSIENT.....	10	10	.. ..	.. ..	.. ..	.. ..
Men.....	9	9	.. ..	.. ..	.. ..	.. ..
Women.....	1	1	.. ..	.. ..	.. ..	.. ..
TOTALS.....	221	221	706	683	650	759
Men.....	214	214	678	656	623	730
Women.....	7	7	28	27	27	29
GRAND TOTALS.....	618	264	6498	7380	16650	16203	15299	18667
Men.....	163	95	4755	5013	12499	12133	11413	13831
Women.....	455	169	1743	2367	4151	4070	3886	4836

*Graduate Students included in enrollment as First, Second, Third, and Fourth Year.

TABLE OF COURSE-NUMBER REVISION

New course numbers are in the left-hand column, old numbers in the right-hand column.
(An asterisk indicates that a change has been made in either content, title, level, or credit. See course descriptions in the 1950-51 *Catalogue*.)

ANTHRO- POLOGY				ART			
101	51	101	2			360	160
102	52	105	3	100	1	361	161
103	53	124	24	105	5	362	162
210	60	125	25	106	6	369	169
213	63	126	26	107	7	370	170
215	65	224	54	109	9	371	171
217	66	225	55	110	10	375	175
*270	199	226	56	111	11	376	176
280	91	230	61	112	12	377	177
*310		231	62	115	15	382	182
*311		232	63	116	16	383	183
*312		240	40	151	51	384	184
320	103	241	41	253	53	413	113
350	105	242	42	254	54	414	114
*370		*276	47	255	55	415	115
371	107	*277	48	256	56	436	136
*380		*278	49	257	57	437	137
390	152	300	51	258	58	438	138
411	111	301	52	262	62	445	145
413	113	314	110	265	65	446	146
414	114	315	111	266	66	447	147
419J	179J	316	112	267	67	450	150
431	141	324	104	272	72	451	151
432	142	325	105	273	73	452	152
433	143	326	106	274	74	453	153
435	145	360	152	280	80	454	154
436	146	361	153	281	81	455	155
*437	185	*376	116	282	82	463	163
441J	101J	*377	117	283	83	464	164
442	149	*378	118	300	100	465	165
*450J		*380	135	301	101	466	166
451	151	400	101	302	102	467	167
460	160	401	102	303	103	472	172
480	186	402	103	304	104	473	173
481	187	403	151	305	105	474	174
482	188	424	154	307	107	479	179
499	190	425	155	308	108	480	180
*505	250	426	156	309	109	481	181
*506	205	427	160	310	110	485	185
*511		428	161	311	111	486	186
519J	224J	429	162	312	112	487	187
521	203	430	120	316	116	495	195
*522	120	431	121	317	117	496	196
*525	207	432	122	318	118	497	197
*531	241	435	126	320	120	*498	198
*542	208	436	127	322	122	507	207
*551	252	437	128	323	123	508	208
560	260	469	169	324	124	509	209
561	204		180	326	126	522	222
*570	251	*480	181	329	129	523	223
*580	206		182	330	130	524	224
600	300		183	332	132	550	250
			190	333	133	551	251
			191	334	134	552	252
			192	340	140	553	253
			193	357	157	554	254
			194	358	158	555	255
				359	159	560	260
ARCHITEC- TURE							
100	1	494	194				

ART		461	115	*470	157	*475	198
561	261	462	140	*480	152	*477	198
562	262	463	141	*490	158	590	208
563	263	471	150	*499	195	604	304
564	264	472	144	*590	258	Marketing	
565	265	473	145	591	259		
600	300	474	146	*592	258	301	106
		498	199	604	304	*351	
		520	200	Business Law		361	131
ASTRONOMY		*521	221			*371	
201	1	561	242	201	54	381	133
401	101	571	247	202	55	391	134
403	103	572	248	207	57	401	130
404	104	600	300	410	161	421	138
405	105			420	178	*431	
499	199					*441	
		BUSINESS ADMINIS- TRATION		Business Statistics		*451	139
				201	60	*461	135
101J	1J	*101	1	340	170	*471	136
102J	2J	310	115	*341	171	*481	137
*351		365	166	*342	172	*495	193
401	{Zool	439	175	443	191	*496	193
	{101	460	165	590	270	*590	235
408	{Zool	470	163	604	304	*591	235
	{108	*495	199B			*592	235
451	{Bot	*496	199C	Finance		604	304
	{108	560	260	*201	102	Personnel	
452	{Bot	*561	261	301	121		
	{109	*562		*334	124	310	167
453	{Bot	*570		367	127	345	173
	{110	*571		*420	120	346	174
472	{Zool	590	251	425	125	450	164
	{172	591	255	428	126	604	304
472L	{Zool	592	256	*432		Production	
	{172L	*593		444	122		
473	{Zool	*594		446	123	*301	101
	{173	595	201	*590	202B	*351	151
501	{Zool	*596	257	*592	225	*355	162
	{201	598	215	*593	226	*380	180
		604	304	*594	221	*460	150
				*596	202A	*470	
				*597	202A	*499	195
				*598		*590	
				604	304	*591	
						604	304
				Foreign Trade		Real Estate	
111	1	*150	62	310	181	301	109
112	2	*151	63	*450		410	169
113	3	*250	{62	460	182	*495	199
114	17		{63	495	197B	*496	199
115	18	*255		496	197C	*590	
116	19	305	119	590	214	604	304
201	24L	*310	110	591	213	Secretarial Training	
202	25L	*320	156	604	304		
331	101	330	154	Insurance		*10	12
333	151	*340	153	301	108	*111	13
341	119	*341		302	128	*112	14
361	111	*360	111	303	129	115	19
371	143	*370	157	359	187	120	16
431	134	*371	159	453	188	121	17
432	135	*380	152	*473	198	122	18
441	105	*390	112				
442	106	*393	112				
443	107	*420	156				
444	129	*440	153				
445	132	*450					

Secretarial Training		327	110	528	228	*419	
		333	133	535	234	*453	
		*335	131★	536	235	*499	
130	26	*336	132★	537	237	*540	191
131	27	*337	133★	*538		*541	192
132	28	*345	128★	*555		*542	193
*310	116	346	130★	*556		600	300
*311	117	*351	140	*557			
*312	113	*352	141	*558			
520	118	*353	213	*559			
Transportation		*355	{181	561	224	*101	1
201	70		lect	*565		*102	2
202	71	*356	{182	*566	{264	*103	3
203	72		lect	*567	{265	201	4
204	73	*357	183	*591		202	5
301	104		lect	*592		203	6
*311	143	*358	181	*593		207	8
313	146		lab	*595		208	9
315	145	*359	182	*596		*309	140
317	144		lab	600	300	312	101
*440	148		360			313	151
*450	147	*415	361			322	130
452	149	*416	144			323	104
495	194	*417	223			324	132
496	194	421	221			342	133
590	204	422	222	101	15	355	102
604	304	*425	155	102	16	356	131
		*426	156	250	115	357	103
				260	17	358	105
				*320	12	*390	100
				*321	13	*401	287
				*322	14	412	154
				*330	18	413	153
						*414	207
						*422	204
						*423	214
						*430	211
						451	151
						*499	
						513	218
						600	300

COURSE-NUMBER REVISION

Dentistry		Oral Diagnosis & Treatment Planning		447	179	251	51
*500	{Perio			448	180	252	52
	{200, 201			500	203	253	53
*510	{Ortho	*216	126	501	204	307	107
	{200	*217	127	502	205	308	108
*511	{Ortho	300	150	503	206	309	109
	{201	301	151	504	207	403	103
*512	{Ortho	331	156	546	208	404	104
	{202	346	153	547	209	405	105
*513	{Ortho	347	154	548	210	406	106
	{203	348	155	549	211	411	111
*521	{Pedo	400	175	550	212	412	112
	{202	401	176			413	113
*522	{Pedo	402	177	Periodontology		414	114
	{213	446	178	100	101	415	115
*523	{Pedo	447	179	131	102	417	117
	{200	448	180	200	125	418	118
*530	{Oral D			231	126	419	119
	{200			300	153	421	121
Fixed Partial Dentures		Oral Surgery		301	154	422	122
231	125	*300	150	302	159	423	123
232	126	*301	151	346	156	426	126
233	127	*302	152	347	157	427	127
234	128	303	157	348	158	428	128
300	150	346	153	349	162	429	129
301	151	347	154	350	163	434	134
302	152	348	155	351	164	435	135
346	153	400	175	400	175	436	136
347	154	401	176	401	176	437	137
348	155	402	177	446	178	438	138
400	175	446	178	447	179	439	139
401	176	447	179	448	180	441	141
446	178	448	180	449	186	442	142
447	179			450	187	443	143
448	180			451	188	444	144
Operative Dentistry		Orthodontics				445	145
131	101	300	150	Prosthodontics		446	146
132	103	316	153	*131	{101	451	151
133	104	400	175		{102	452	152
134	105	401	176	*231	128	453	153
231	125	500	204	*300	150	481	181
232	126	501	205	*301	151	482	182
233	127	502	206	*302	152	483	183
261	128	503	207	*303	153	497	197
300	150	504	208	*304	154	499	199
301	151	546	209	*346	156	601	301
302	152	547	210	*347	157	602	302
346	153	548	211	*348	158	603	303
347	154	549	212	*400	175		
348	155	550	213	*401	176		
400	175			*402	178		
401	176	Pedodontics		*446	181	ECONOMICS	
402	177	100	101	*447	182	*160	16
446	178	200	126	*448	183	200	10
447	179	201	127			*201	
448	180	202	128			211	66
		216	125			212	70
		300	150			301	102
		301	151	DRAMA		302	100
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		347	154	102	2	*306	106
		348	155	103	3	320	120
		400	175	146	46	*330	130
		446	178	147	47	332	132
				148	48		

ECONOMICS

336	134	372E	72 E	427C	138A	535	235
340	140	371N	71N	427D	127D	536	236
345	145	372N	72N	427E	127E	537	237
350	150	371P	71P	427F	127	541	241
353	153	372P	72P	429F	129F	542	242
361	162	371U	71U	430	130	543	243
*362	160	372U	72U	431	131	547	247
*363	161	373	73	432c	132c	550	250
370	170	374	74	433	133	551	251
373	173	375A	75A	434	134	552	252
390	190	375AE	75AE	435	135	560	260
*403	103	375B	75B	436c	136c	561	261
*407	107	375C	75C	437	137	570	270
421	121	375D	75D	438	138	571	271
422	122	375E	75E	443A	143A	587	287
423	123	375F	75F	444B	144B	588	288
433	133	375FT	75FT	444DV	144DV	589	289
437	135	375H	75H	444P	144P	591	291
441	141	375J	75G	444X	144X	600	300
442	143	375K	75K	445V	145V		
443	144	375L	75L	445VA	145VA		
446	146	375M	75M	445VT	145VT		
451	151	375NA	75NA	447	147		
*471	171	375NB	75NB	448	148		
*472	172	375O	75O	461	161		
492	192	375P	75P	462	162		
*493	193	375Q	75Q	464	164		
*499	199	375R	75R	466	166		
*505	200	375RE	75RE	466H	166G		
*506	201	375T	75T	466P	166P		
*511	202	375U	75U	467	167		
*512	203	375V	75V	468	168		
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*515	206	*375W	75W	470	170		
521	220	375X	75X	475A	175A		
522	221	375Y	75Y	475B	175B		
530	230	375Z	75Z	475H	175H		
532	232	376	76	475N	175N		
536	234	377A	77A	475Nc	145Kc		
*541	241	377B	77B	475S	175S		
542	242	377C	77C	476A	176A		
550	250	377D	77D	476B	176B		
571	270	378A	78A	476C	176C		
572	271	378B	78B	476D	176D		
600	300	390	90	476E	176E		
		401	101	476F	176F		
		402	102	476H	176H		
		403	103	476I	176I		
		*404	104	476K	176K		
		405	105	476L	176G		
		406	106	*477	177		
		408	105G	480	180		
		409	109	484	184		
		410	110	488	188		
		415	115B	490	190		
		417	117	491	191		
		418	118	499	199		
		421	121	501	201		
		422	122	510	210		
		423	123	522	222		
		425	125	531	231		
		427A	127A	532	232		
		427B	127B	533	233		

EDUCATION

74A	N74A						
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101E	1E						
N125S	N125S						
209	9						
230	30						
360	60						
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370E	70E						
371	71						
371E	71E						
372	72						

ENGINEERING

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*422	106
*441	
*461	141
*462	142
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516	203
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518	241
520	294
521	295
522	296
*530	224
*531	225
*532	226

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Mechanical		561	231	264	64	437	137
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410	108	*563		266	66	439	139
411	109	571	261	267	67	440	140
415	161			269	69	441	141
417	162		Mining	270	70	447	147
424	184	10	10	272	72	448	148
425	182	11	11	273	73	449	149
428	189	20	20	277	77	456	156
433	188	21	21	278	78	457	157
463	165	221	51	279	79	458	158
464	166	222	52	301	101	466	166
481	170	223	103	320	120	484	184
482	172	306	106	328	128	485	185
483	171	307	107	329	129	486	186
490	185	421	151	330	130	488	188
491	186	422	152	344	144	489	189
492	187	423	152	345	145	505	201
499	199	430	108	350	150	507	202
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543	206	433	171	352	152	509	200
544	208	*461	101	353	153	510	210
568	200	*462	161	354	154	511	211
584	204	*463	164	361	161	512	212
600	300	*464		362	162	513	213
		*465		363	163	514	204
		*466		367	167	515	205
		*467		368	168	516	206
Metallurgical				369	169	517	217
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*202		480	180	372	172	521	221
203	53	481J	181	374	174	522	222
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306	106	491	191	377	177	525	225
307	107	498		378	178	526	226
321	104	520	201	379	179	527	207
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FAR EASTERN

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		521	201
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243	43		
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291	91	*523	203
292	92	*524	204
310	110	*525	205
313	113	*526	206
415	155	*527	207
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	{150	*529	209
*421	{Russ	*530	210
	{151	*531	211
*422	{Russ	*532	212
	{152	*550	250
423J	167J	*555	
*424J			
*426			
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	{153	103	2
*430		104	3
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445	145	304	103
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457	157	206	3
478	168	301	101
490	190	402	102
499	199	403	103
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519J	224J	405	105
521	220	406	106
522	221	407	107
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		409	109
*524	{Russ	499	199
	{285	510	200
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526	226	522	202
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532	212	525	205
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Mongolian

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301	101
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*491	191
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560	260

Serbo-Croatian

102	1
103	2
104	3
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FISHERIES

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401	101
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407	107
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427	127
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461	161
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484	184
485	185
486	186
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FORESTRY

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107	1b
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442	186
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FORESTRY

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GENERAL
LITERATURE

300	151
301	152
302	153
*350	
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*481	
*482	
*510	
*511	

GENERAL
STUDIES

391	191
451	151
455	155
456	156
493	193

GEOGRAPHY

100	1
102	2
107	7
111	11

115	15
170	70
202	102
210	110
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325	125
395	195
403	103
404	104
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419J	179J
421	121
432	132
433	133
436	171
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461	161
*462	162
470	170
475	175
477	177
*499	199
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502	202
503	203
504	204
505	205
513	213
515	215
517	217
537	207
540	220
*550	
551	295
555	255

GEOLOGY

101	1
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103	3
205	5
206	6
207	7
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310	10
323	123
324	124
325	125
330	130
332	132
344	144
361	131

400	200S
412	112
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414	114
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516	116
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530	330
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534	134
537	137
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*560	330
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*568	
570	320
580	327
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GERMANIC
LANGUAGES

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103	3
110	1S
111	2S
112	3S
121	1R
122	2R
131	1X
132	2X
204	4
205	5
206	6
207	7
210	10
230	30
260	60
300	128
301	117
302	118
303	119
310	130
311	131
312	132
320	113

321	114
322	115
325	116
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351	101
401	120
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403	122
404	129
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411	184
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417	182
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419	144
422	149
431	160
433	162
434	163
436	166
437	167
438	168
*450J	
462	102
464	104
497	199
498	198
500	200
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512	212
513	213
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516	231
517	232
518	235
519	236
530	214
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535	216
538	221
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597	297

LAW

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*489	199R	153	53
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498	199K	156	56
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		242	42
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		253	63
		307	107
		308	108
		309	109
		313	113
		350	64
		385	185
		414	114
		415	115
		416	116
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		421	121
		422	122
		423	123
		433	133
		452	152
		453	153
		460	160
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		496	195
		497	197
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		*502	
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		504	204
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		*512	
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		514	214
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		524	224
		525	225
		526	226
		531	230
		532	231
		533	232
		544	244
		545	245
		546	246

LIBERAL ARTS

101	I
111	II

LIBRARIAN-
SHIP

100	I
451	151
452	252
460	260
461	161
462	262
463	163
464	164
470	270
500	200
501	204
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509	209
510	210
511	211
512	212
513	213
514	214
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532	222
540	240
*541	241
542	242
543	243
550	250
553	253
554	254
599	299
601	300
602	300

MATHE-
MATICS

101	1
102	2
104	4
105	5
106	6
111	11
112	12
113	13
122	22
151	51

571	271	251G	151
572	272	252G	152
573	273	253G	153
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*575		301	101
*576		420	120
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582	282	430	130
583	283	431	131
584	284	499	199
585	285	510	201
589	289	520	200
		530	206
		540	202
		550	213
		600	300

MEDICINE

Conjoint

158	158J
159	159J
163G	163J
256	156J
257	157J
485	185J
488	188J
*490	{Med 190}

Anatomy

128G	128
129G	129
130G	130
131G	131
151G	151
152G	152
*155G	
*156G	
161G	161
162G	162
217JG	117
218JG	118
301	103
*405	
*410	
*415	
*421	
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*435	
*440	
*445	
*450	
*455	
*460	
*465	165
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Biochemistry

362	127
461	167
462	168

Microbiology

235G	135
236G	136

Pathology

231}	{131
232}	{132
	{133
251	151
252	152
253	153
301	101
321	121
322	122
323	123
324	124
325	125
326	126
360	160
370	170
376	176
483	253
504	254
520	200
550	250
551	251
552	252
555	255
600	300

Pharmacology

234	134
252G	152
253G	153
301	101
302	102
303	103
485	185
486	186
487	187
501	201
503	203
504	204
505	205
506	206
507	207
508	208
600	300

Physiology		Obstetrics		452	152	255	76
126	126	365	165	462	162	300B	120
150G	150	470	170	492	192	301	131
151C	151			493	193	302	132
217JG	117	Pediatrics		494	194	304	104
218JG	118	365	165	495	195	307	127
416	116	470	170	520	200	308	128
421	180			541	241	309	129
520	200	*505	{Pedo	542	242	311	101
525	225		{201	*543		312	102
526	226	Psychiatry		600	300	314	114
527	227	100G	151			*324	{124
531	231	110G	153	MUSIC		*326	{125
532	232	200G	154	*100A	20	330	126
533	233		{161	100B	120	331	130
600	300	300	{162	100C	80E	332	121
			{163	101	21	333	122
Public Health		*367	167	102	22	334	123
111G	152	467	100	103	23	335	144
112G	153	468	200	104	4	336	145
272G	151	*470	170	107	7	340	146
*301	118	475	175	*110A	10AX	347	140
310	161	*480	190	*110C	10CX	348	147
311	162	503	203	*110Y	10YX	*350	148
312	163	504	204	*110Z	10ZX	354	150
330	101	505	205	111	11	355	154
*402	119	Radiology		112	12	357	156
405	192			113	13	357	157
407	193	*300	{151	117	17	360	160
*412	120		{152	118	18	361	112
414	121		{153	119	19	*380	180
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