

O R E G O N
State System of
Higher Education
B U L L E T I N



Graduate Division
1939-40

University of Oregon ♦ Oregon State College

GRADUATE DIVISION

Oregon State System
of Higher Education

1939-40

Oregon State System of Higher Education

THE Oregon State System of Higher Education, as organized in 1932 by the State Board of Higher Education following a Federal survey of higher education in Oregon, includes all the state-supported institutions of higher learning. The several institutions, located at six different places in the state, are now elements in an articulated system, parts of an integrated whole. The educational program is so organized as to distribute as widely as possible throughout the state the opportunities for general education and to center on a particular campus specialized, technical, and professional curricula closely related to one another.

The institutions of the State System of Higher Education are the University of Oregon at Eugene, Oregon State College at Corvallis, the University of Oregon Medical School at Portland, the Oregon College of Education at Monmouth, the Southern Oregon College of Education at Ashland, and the Eastern Oregon College of Education at La Grande.

Each of these institutions, except the Medical School which is on a graduate basis, provides the general studies fundamental to a well-rounded education. At the three colleges of education general and professional studies are combined in the teacher-training curriculum. At the Southern Oregon College of Education and the Eastern Oregon College of Education students who do not plan to become elementary school teachers may devote their time exclusively to lower-division studies in the liberal arts and sciences.

At the University and the State College two years of unspecialized work in liberal arts and sciences are provided on a parallel basis in the Lower Division. Beyond the lower-division level the work of the two institutions is distinctly differentiated. At the University are centered the advanced curricula in the arts, letters, and social sciences, and the professional schools resting on these fundamental fields of knowledge. At the State College are centered the advanced curricula in the physical and biological sciences and the professional schools resting on these natural sciences.

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State Board of Higher Education

	Term Expires
EDWARD C. PEASE, The Dalles.....	1940
F. E. CALLISTER, Albany.....	1941
BEATRICE WALTON SACKETT, Marshfield.....	1942
C. A. BRAND, Roseburg.....	1943
E. C. SAMMONS, Portland.....	1944
ROBERT W. RUHL, Medford.....	1945
EDGAR W. SMITH, Portland.....	1946
WILLARD L. MARKS, Albany.....	1947
HERMAN OLIVER, John Day.....	1948

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EDWARD C. PEASE.....	Vice-President

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EDWARD C. PEASE	

FREDERICK M. HUNTER, Chancellor

CHARLES D. BYRNE, Secretary

Office of the State Board of Higher Education
Eugene, Oregon

Oregon State System of Higher Education

Executive Officers

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WILLIAM JASPER KERR, D.Sc., LL.D., Chancellor Emeritus	
DONALD MILTON ERB, Ph.D. President, University of Oregon	GEORGE WILCOX PEAVY, Sc.D., LL.D. President, Oregon State College
RICHARD BENJAMIN DILLEHUNT, M.D. Dean, University of Oregon Medical School	JULIUS ALONZO CHURCHILL, M.A. President, Oregon College of Education
WALTER REDFORD, Ph.D. President, Southern Oregon College of Education	CHARLES ABNER HOWARD, M.A., LL.D. President, Eastern Oregon College of Education

Deans and Directors*

ERIC WILLIAM ALLEN, A.B.....	Dean and Director of Journalism
HERBERT ARNOLD BORK, B.A., C.P.A.....	Comptroller
CLARENCE VALENTINE BOYER, Ph.D.....	Dean and Director of Arts and Letters
CHARLES DAVID BYRNE, M.S.....	Director of Information
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FRANCOIS ARCHIBALD GILFILLAN, Ph.D.....	Acting Dean and Director of Science
JAMES RALPH JEWELL, Ph.D., LL.D.....	Dean of Education; Director of High School Teacher Training
†JOHN JACOB LANDSBURY, Mus.D.....	Dean and Director of Music
OLOF LARSELL, Ph.D., Sc.D.....	Dean and Director of Graduate Division
ELLIS FULLER LAWRENCE, M.S., F.A.I.A.....	Dean and Director of Architecture and Allied Arts
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LUCY MAY LEWIS, A.B., B.L.S.....	Director of Libraries
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ADOLPH ZIEFLE, M.S., Phar.D.....	Dean and Director of Pharmacy

*Each dean and director in this list is interinstitutional in function, and the chancellor's principal adviser in his field.

† Resigned, June 30, 1939.

Graduate Division Calendar

UNIVERSITY AND STATE COLLEGE

Summer Session, 1939:

June 12.....Summer session begins, University
 June 19.....Summer session begins, State College

Fall Term, 1939-40:

September 30 to October 7.....Graduate registration, State College
 October 2 to 7.....Graduate registration, University
 October 2.....Classes begin
 December 15.....Classes end
 December 16, 18 to 21.....Final examinations

Winter Term, 1939-40:

January 3 to 10.....Graduate registration, State College
 January 4 to 6.....Graduate registration, University
 January 4.....Classes begin
 March 9.....Classes end
 March 11 to 15.....Final examinations

Spring Term, 1939-40:

March 25 to April 1.....Graduate registration, State College
 March 26 to 30.....Graduate registration, University
 March 26.....Classes begin
 May 31.....Classes end
 June 3 to 7.....Final examinations
 June 3.....Commencement at State College
 June 9.....Commencement at University

Summer Session, 1940:

June 17.....Summer session begins, University
 June 24.....Summer session begins, State College

MEDICAL SCHOOL

Fall Term, 1939-40:

October 2.....Registration
 October 3.....Classes begin
 December 22.....Fall term ends

Winter Term, 1939-40:

January 2.....Classes begin
 March 16.....Winter term ends

Spring Term, 1939-40:

March 22.....Classes begin
 June 7.....Spring term ends

PORTLAND CENTER

Fall Term, 1939-40:

October 1.....Classes begin
 December 11 to 16.....Final examinations

Winter Term, 1939-40:

January 2.....Classes begin
 March 13 to 16.....Final examinations

Spring Term, 1939-40:

March 25.....Classes begin
 June 3 to 8.....Final examinations

Summer Session, 1940:

June 17.....Summer session begins

OREGON STATE SYSTEM OF HIGHER EDUCATION

Graduate Division

OLOF LARSELL, Ph.D., Sc.D., Dean and Director of the Graduate Division, Oregon State System of Higher Education.

GEORGE REBEC, Ph.D., Dean and Director Emeritus of the Graduate Division, Oregon State System of Higher Education.

HOWARD RICE TAYLOR, Ph.D., Assistant Dean of the Graduate Division, in charge at the University.

WILLIBALD WENIGER, Ph.D., Assistant Dean of the Graduate Division, in charge at the State College.

MAXINE MANN, Secretary to the Dean.

CLARA LYNN FITCH, Secretary of the Graduate Division at the University.

GEORGENA SAMSON, B.S., Secretary of the Graduate Division at the State College.

Graduate Council

University Council

OLOF LARSELL, Ph.D., Sc.D.,
 Chairman.

HOWARD RICE TAYLOR, Ph.D.,
 Vice-Chairman.

C. VALENTINE BOYER, Ph.D.,
 Arts and Letters.

LOUIS ARTAU,
 Architecture and Allied
 Arts; Music.

ORIN KAY BURRELL, M.A.,
 Business Administration.

FRED LEA STETSON, M.A.,
 Education.

ERIC WILLIAM ALLEN, A.B.,
 Journalism.

RALPH WALDO LEIGHTON, Ph.D.,
 Physical Education.

ELON HOWARD MOORE, Ph.D.,
 Social Science; General Studies.

State College Council

OLOF LARSELL, Ph.D., Sc.D.,
 Chairman.

WILLIBALD WENIGER, Ph.D.,
 Vice-Chairman; Science.

PHILIP MARTIN BRANDT, A.M.,
 Agriculture.

JAMES RALPH JEWELL, Ph.D., LL.D.;
 vice CARL WALTER SALSER, Ed.M.;
 Education.

SAMUEL HERMAN GRAF, M.E., M.S.,
 Engineering and Industrial Arts.

EARL GEORGE MASON, M.F.,
 Forestry.

FLORENCE BLAZIER, Ph.D.,
 Home Economics.

LEWIS CLEMENCE BRITT, Ph.D.,
 Pharmacy.

Graduate Committees

University Graduate Committees

Arts and Letters (including Philosophy): CLARENCE VALENTINE BOYER, Ph.D., Chairman; FREDERICK M. COMBELLACK, Ph.D.; EDWARD CHRISTIAN ALAN LESCHE, Ph.D.

Social Science and Journalism: ERIC WILLIAM ALLEN, A.B., Chairman; JAMES HENRY GILBERT, Ph.D.; ROBERT CARLTON CLARK, Ph.D.; ELON HOWARD MOORE, Ph.D.

Architecture and Allied Arts and Music: LOUIS ARTAU, Chairman; EYLER BROWN, M.Arch.

Business Administration: ORIN KAY BURRELL, M.A., Chairman; NEWEL HOWLAND COMISEH, Ph.D.; CARDINAL LYLE KELLY, M.A., C.P.A.

Education and Physical Education: RALPH WALDO LEIGHTON, Ph.D., Chairman; FLORENCE DELIA ALDEN, M.A.; CARL LEO HUFFAKER, Ph.D.; FRED LEA STETSON, M.A.

General Studies: ELON HOWARD MOORE, Ph.D., Chairman; ERIC WILLIAM ALLEN, A.B.; LOUIS BERELSON, Ph.D.; ORIN KAY BURRELL, M.A.; RUDOLF HERBERT ERNST, Ph.D.; LANCE HART; RALPH RUSKIN HURSTIS, Ph.D.; ELIZABETH BRIGGS MONTGOMERY, Ph.D.

State College Graduate Committees

Science: WILLIBALD WENIGER, Ph.D., Chairman; WILLIAM EDMUND MILNE, Ph.D.; DON CARLOS MOTE, Ph.D.

Agriculture: PHILIP MARTIN BRANDT, A.M., Chairman; WILLIAM HENRY DRESEN, Ph.D.; WILLIS PIERRE DURUZ, Ph.D.

Education: JAMES RALPH JEWELL, Ph.D., LL.D., Chairman; CARL WALTER SALTER, Ed.M.; RILEY JENKINS CLINTON, Ed.D.; OTHNIEL ROBERT CHAMBERS, Ph.D.

Engineering and Industrial Arts: SAMUEL HERMAN GRAF, M.E., M.S., Chairman; FRED ORVILLE McMILLAN, M.S.; CHARLES ARTHUR MOCKMORE, C.E., Ph.D.

Forestry: EARL GEORGE MASON, M.F., Chairman; THURMAN JAMES STARKER, B.S.; RICHARD SENG KEARNS, M.S.

Home Economics: FLORENCE BLAZIER, Ph.D., Chairman; VERA HASKELL BRANDON, Ph.D.; JESSAMINE CHAPMAN WILLIAMS, M.A.

Pharmacy: LEWIS CLEMENCE BRITT, Ph.D., Chairman; ERNST THEODORE STUHR, M.S.; ERNEST LESLIE BEALS, M.S.

Medical School Graduate Committee

OLOF LARSELL, Ph.D., Chairman; EDWARD STAUNTON WEST, Ph.D.; FRANK RAYMOND MENNE, M.D.

Graduate Study

IN the disciplines of undergraduate education the primary aim is to prepare the student for cultured living and intelligent citizenship, and in techniques leading to a professional career. In graduate study the dominant aim is the development of the scholar, capable of original thinking and of creative achievement in the advancement and extension of knowledge. Hence, a graduate degree indicates more than the mere completion of a prescribed amount of advanced study; it indicates that the student has shown both promise and performance in the field of independent scholarship.

Graduate study in the Oregon State System of Higher Education is defined to include all study beyond the bachelor's degree, in other than strictly professional curricula. By professional curricula are meant clearly defined and sharply specialized curricula, such as those in law and medicine, leading to professional degrees. A student who has received a bachelor's degree at an accredited college or university will be admitted to the University of Oregon or Oregon State College as a graduate student. Such admission, however, does not in itself admit him to candidacy for a degree. Candidacy for an advanced degree is granted only after the student has demonstrated, by passing a preliminary examination, the thoroughness of his previous preparation and his ability to do work of graduate character.

Advanced degrees were conferred occasionally at the University from the earliest days. In 1897 definite requirements of residence work were established for the master's degree. Graduate instruction was placed under the administrative control of the Graduate School in 1899-1900.

At the State College, the first advanced degree (A.M.) was conferred in 1876; in 1910 graduate study was placed under the supervision of a special standing committee of the faculty.

In 1933 all graduate work in the State System was coordinated under the Graduate Division.

Organization of Graduate Division

THE Graduate Division has jurisdiction over all graduate study in the State System leading to other than strictly professional degrees. The administration of the Graduate Division is in the hands of the graduate dean and the graduate councils at the University and the State College. The graduate council at each institution consists of a representative from each major school or college offering graduate work. The dean of the Graduate Division is chairman of both institutional councils. The two councils meet separately and in joint session. In joint session the councils formulate policies for the Graduate Division as a whole. Meeting separately, the University and State College councils have jurisdiction over graduate work within their respective institutions.

In each of the major schools or colleges, a graduate committee, appointed by the president of the institution in consultation with the dean of the Graduate Division, has supervision over standards of graduate performance and study programs (both general departmental plans for graduate work and the programs of individual students). The actual formulation of departmental programs and

the working out and direction of the programs of individual students remain with the department. No school or college committee has authority to waive or supersede the general rules or requirements of the Graduate Division.

Institutional Allocation of Graduate Work

ON the basis of the 1932 allocations of curricula in the Oregon State System of Higher Education, all graduate study leading to advanced degrees at the institutions of the State System has been allocated by curricula or major subjects as follows:

At the University—

Arts and letters, the social sciences (including psychology), and the professional fields of architecture and allied arts, business administration, education, journalism, law, music, and physical education.

At the State College—

The biological sciences, the physical sciences (including mathematics), and the professional and technical fields of agriculture, education, engineering, forestry, home economics, and pharmacy.

In certain fields graduate work may be carried on at the University of Oregon Medical School in Portland or at the Portland Extension Center, leading to degrees, through the Graduate Division, at the University or the State College.

Students may be enrolled for major work on one campus and for minor work on another.

General Regulations

TWO classes of graduate students are recognized: (1) those wishing to become candidates for an advanced degree; and (2) those wishing merely to take work beyond the requirements for the bachelor's degree. Students of the first class make out a program in conformity with the rules stated below. Students of the second class register for the courses they desire, with the understanding that the institution is under no implied obligation to accept credits earned as work toward a degree. Whether a student is adequately prepared to enter a particular course is determined by the instructor in charge and the head of the department.

Admission. A graduate of any accredited college or university is admitted to the Graduate Division by the registrar of the institution which he wishes to enter, upon filing an application for admission and an official transcript of the credits upon which his bachelor's degree is based. Such admission, however, does not of itself entitle a student to become a candidate for a degree.

Preparation Required for Graduate Study. Preparation for a graduate major must be an undergraduate major in the same subject, or a fair equivalent. Preparation for a graduate minor must be at least one year sequence of upper-division work in addition to foundational courses in the subject. Graduate credit may not be earned in courses for which the student does not show proper preparation by previous record or qualifying examination.

Study Program and Load. Graduate students beginning work toward a degree will be expected to work out, in tentative form at least, a complete program of study leading toward the degree desired. This program should allow sufficient time for completion of the thesis or essay. Work on the thesis or essay should be begun as early as possible.

The normal load for a graduate student devoting all of his time to graduate study is 12 term hours in courses each term, plus 3 hours for thesis. The maximum load is 16 term hours (at the State College, 17 term hours on petition). For assistants, scholars, and fellows, the maximum load is 10 term hours; for part-time assistants, scholars, and fellows, the maximum is 12 term hours. All graduate students who devote part of their time to other occupations will be expected to limit their programs in a similar fashion, according to the share of their time available for graduate work.

Each candidate must take at least 6 term hours of graduate work from each of at least three members of the graduate faculty.

Grade Requirement. A grade-point average of 3.00 (a B average) is required for every graduate degree. Grades below C are not accepted for graduate credit.

Thesis. Every candidate for an advanced degree must file in the office of the Graduate Division three copies of an accepted thesis, and five copies of an abstract of the thesis not later than two weeks before the date of his final examination. Every thesis for an advanced degree must have the approval of the major professor and the graduate committee of the school or college in which the candidate is majoring, before being filed with the Graduate Division.

The three copies of the thesis shall be filed unbound. Two copies are bound at the expense of the institution granting the degree after the examination, and deposited in the institutional library. The third copy is the property of the major department. One of the library copies is available for general circulation.

Full information concerning the prescribed style for theses may be obtained on request at the office of the Graduate Division.

Graduate Courses. All courses numbered in the 500s carry graduate credit, as do those in the 400s which have been approved by the Graduate Council. Approved courses in the 400s are designated in the catalogs by (G) or (g) following the course title. Courses designated (G) may form a part of either a major or a minor; courses designated (g) may be taken toward a minor only. Graduate students taking courses in the 400s are expected to do work of a higher order and broader scope than the work of undergraduate students in the same courses.

Master of Arts and Master of Science Degrees

Credit Requirements. For the Master of Arts or Master of Science degree, the student must complete a program of study totaling not less than 45 term hours, approximately two-thirds of which must be in the major (including thesis), and one-third in the minor.

Residence Requirement. For all master's degrees the residence requirement is one academic year (three terms). Five summer sessions or three summer terms is the equivalent of an academic year. Graduate or research assistants may satisfy the residence requirement by five terms of work. Students who have taken graduate work at another institution may lighten their load by

transferring credit; but transferred credit will not shorten the residence requirement.

Transferred Credit. Credit not to exceed one-third of the work for a master's degree may be transferred for graduate work done at another accredited institution, provided: (1) that the work fits into a logical curriculum for the degree; (2) that the transfer is approved by the major department and by the Graduate Council; (3) that grades of A or B have been earned. Credit granted for work done at another institution is tentative until validated by work in residence. (See also "Time Limit" below.)

Language Requirements. For the Master of Arts degree, the student must show, by examination or by adequate undergraduate courses, a reading knowledge of one relevant foreign language, preferably French or German. For the Master of Science degree there is no foreign-language requirement.

Course Requirements. For the Master of Arts (Departmental) and Master of Science degrees at least one year sequence in the 500-599 series (normally of seminar or research nature and for approximately 3 hours of credit per term) is required.

Time Limit. All work counted toward the master's degree, including work for which credit is transferred from another institution, the thesis, and the final examination, must be completed within a period of five years.

Preliminary Examination. A student working toward a master's degree is given a preliminary examination to ascertain whether he is fitted, both by temperament and by basic training, to pursue work on the graduate level in his chosen fields. The student should arrange with his adviser to take this examination before he has completed one-third of the work for the degree. When the preliminary examination has been passed, the student is advanced to candidacy for the degree. Not less than one-third of the course work for the degree should be registered for and completed after the student has been advanced to candidacy. Graduates of the University who have taken the bachelor's degree with honors in the field of the graduate major are ordinarily exempt from the preliminary examination for the master's degree. Graduates of the State College who have maintained a grade-point average of at least 3.25 throughout their undergraduate work may be exempted from taking the preliminary examination.

Thesis. Every candidate for a master's degree must submit a thesis. For general regulations concerning graduate theses, see page 11.

Final Examination. A final oral examination of not less than two hours is required of every candidate for the master's degree; when deemed desirable a written examination may also be required. For the master's degree, the examining committee consists of at least three members of the faculty (two in the student's major field, one in the minor field). It is recommended, and may be required by the graduate committee of any school or department, that at the master's examination there shall be one member of the committee not directly connected with the candidate's studies. At the University, a student presenting a thesis and passing a final examination of exceptional merit may, by vote of the examining committee, be awarded a master's degree with honors.

The examination committee is nominated by the student's adviser, subject to the approval of the dean of the Graduate Division, who is *ex officio* a member of all examining committees.

Master of Arts (General Studies). In addition to the regular Master of Arts (Departmental) degree, the University and the State College offer the degree of Master of Arts (General Studies) in fields in which graduate work is allocated to the institution. This degree is granted for achievement in cultural scholarship, not for specialized work in one of the traditional fields of learning. The student pursues a program of study selected from the offerings of several departments. The requirements are flexible, but the program must be integrated and organic. A special committee supervises all work toward the M.A. (General Studies).

The credit requirement for this degree is 45 term hours, including credit for thesis or essay. The thesis or essay shall be the equivalent, in point of performance, of 9 term hours of course work.

The committee may, on recommendation of the student's adviser, waive the foreign-language requirement.

If adequate offerings are available in the fields in which he wishes to work, a student may complete all the requirements for the M.A. (General Studies) at the Portland Center.

Doctor of Philosophy Degree

General Requirements. No definite credit requirement is set for the degree of Doctor of Philosophy, since it is granted primarily for attainments and proved ability. It is not the policy of the Graduate Division to accept as a candidate for the Ph.D. degree any student whose academic training, both undergraduate and graduate, has been exclusively at the institution from which the degree is sought. The candidate chooses a major and, subject to the approval of his major professor, one or two minor lines of study (at the State College, always two). If the major department offers several distinct lines of study, one minor may lie in that department; in case only one minor is chosen, it must lie in some other than the major department. With the assistance of his advisory committee, the student outlines a program devoting approximately sixty per cent of his time to the major, including thesis, and approximately forty per cent to the minor or minors.

Residence. For the doctor's degree, two years of full-time work beyond the master's degree, in residence at an institution of higher education, are required, of which one year (usually the last) must be spent on the campus of the institution from which the degree is to be received.

Language Requirements. For the Doctor of Philosophy degree, a reading knowledge of French and German must be demonstrated by a formal examination in each language. These examinations should be taken as early as possible after the beginning of graduate work, and must be passed before the preliminary examinations can be taken.

Preliminary Examinations. The student working toward the doctor's degree must pass a group of comprehensive preliminary examinations in his major and minor subjects not less than one academic year before he expects to receive the degree. Advancement to candidacy ordinarily follows the passing of these examinations.

Thesis. Every candidate for the doctor's degree must submit a thesis. Approximately fifteen term hours of credit toward the degree are granted for the

satisfactory completion of this work. For general regulations concerning graduate theses, see page 11.

Final Examination. For the doctor's degree the final oral examination is public, and usually of three hours' duration. The candidate is expected to defend his thesis and to show a satisfactory knowledge of his chosen fields. The examining committee consists of the candidate's advisory committee, any additional members judged desirable, and at least one member not directly connected with the candidate's work. The examination committee is nominated by the student's adviser, subject to the approval of the dean of the Graduate Division, who is ex officio a member of all examining committees.

Other Graduate Degrees

Master of Education and Doctor of Education Degrees. The requirements for the degrees of Master of Education and Doctor of Education are in general similar to those for the degrees of Master of Science and Doctor of Philosophy, respectively, except that the applied or professional aspects of the fields selected are stressed and teaching experience is required. There is no formal foreign-language requirement for these degrees. The candidate for the Doctor of Education degree may, however, be required to show a reading knowledge of one or more foreign languages, if his program demands an acquaintance with foreign literature.

Master of Fine Arts Degree. Graduate students who show superior creative ability may become candidates for the degree of Master of Fine Arts in the School of Architecture and Allied Arts or the School of Music at the University. The requirements are similar to the requirements for other master's degrees, except that the student will meet the major, minor, seminar, and thesis requirements by a program normally distributed as follows: (1) Piece of creative work as "thesis"; 5 hours each term throughout the year. (2) Special study, research, or seminar on theoretical and technical problems closely related to the "thesis"; 5 hours each term, throughout the year. (3) General theoretical reading in the field of art or music in which the "thesis" lies; 5 hours a term throughout the year. On the approval of the student's adviser and the graduate dean, regularly scheduled courses which are closely related to the student's program may be substituted for (2) or (3); but "thesis" work must always total 15 term hours.

Master of Forestry Degree. While the general requirements for the professional degree of Master of Forestry are the same as those for the Master of Science, the program of study is designed, not primarily for the research worker, but for the administrator. The thesis for the M.F. degree must be an original study showing the application of professional knowledge to the accomplishment of a specific practical objective.

Engineer Degrees. For the degrees of Chemical Engineer, Civil Engineer, Electrical Engineer, Forest Engineer, and Mechanical Engineer, the candidate must hold the degree of B.S. or M.S. in the corresponding field of engineering from the State College, must have had at least five years of successful professional practice following graduation, and must present a satisfactory thesis. Before January 1 of the academic year in which the degree is desired, the candidate submits to the head of the department in which his major interest lies a complete statement of his professional experience since receiving the bachelor's

degree. If the statement is approved, after it has been examined by the head of the department, the school graduate committee, and the Graduate Council, the candidate is instructed to prepare and submit his thesis. The thesis must be of high order and is subjected to the same scrutiny and regulations as other graduate theses. Upon acceptance of the thesis the candidate is recommended for the degree in the usual manner. The candidate registers for the degree with the State College registrar, either in person or by mail, not later than March 1, and pays the thesis examination fee of \$10.00. After his thesis has been accepted he pays the usual graduation fee of \$6.50.

Fees and Deposits

G RADUATE students at the University and the State College who are registered for seven term hours of work or more pay a fee of \$30.00 a term. Graduate students registered for six term hours or less pay the regular part-time fee of \$3.00 a term hour. Graduate students do not pay the nonresident fee.

Payment of the graduate fee entitles the student to the use of library facilities, to the use of laboratory equipment in connection with courses for which he is registered, to medical attention and advice at the Student Health Service, to the use of gymnasium equipment (including gymnasium suits and laundry service), and to all other services maintained by the institutions for the benefit of students.

Regulations governing the refund of fees are on file in the institutional business offices.

Every person enrolled for credit at the University or the State College is required to make a deposit of \$5.00, payable once each year at the time of first registration. This deposit is required as a protection against the loss or damage by the student of institutional property. If at any time charges against this deposit become excessive, the student may be called upon to re-establish the original amount. The deposit, less any deductions which may have been made, is refunded about three weeks after the close of the academic year. Students who discontinue their work before the end of the year may receive refunds, upon petition to the Business Office, about three weeks after the close of the fall or winter term.

For graduate fees at the University of Oregon Medical School and the Portland Extension Center, see pages 85 and 90.

Assistantships, Scholarships, Fellowships, and Prizes

A VARYING number of graduate and research assistantships, scholarships, and fellowships are awarded annually to graduates of accredited universities and colleges who have superior records in their undergraduate work. All persons holding these positions are expected to register in the Graduate Division, and to take work toward an advanced degree. Assistants, scholars, and fellows pay the same fees as other graduate students. Applications for these positions should be made before March 31. Application blanks are furnished on request by the Graduate Division. Assistants, scholars, and fellows receive their stipends in nine monthly installments.

These aids to graduate study, together with other scholarships, fellowships, and prizes awarded to graduate students at the institutions of the State System of Higher Education, are listed below.

Graduate Assistantships. A graduate assistant renders services amounting to not more than 18 hours a week—reading papers, handling laboratory and quiz sections, etc. He is permitted to enroll for a maximum of 10 term hours of course work. A graduate assistant commonly completes the work for a master's degree in two years. He may, however, complete the work in one year plus an additional full summer quarter. The stipend is \$540 a year. The position is tenable for two years only.

A part-time graduate assistant receives \$270 a year. His maximum course load is 12 term hours.

Research Assistantships. A research assistant aids a faculty member in carrying on a research project. Compensation and enrollment limitations are the same as for a graduate assistant.

Graduate and Research Scholarships. Scholarships are awarded to students whose promise is considered exceptional. Ordinarily, award of a scholarship is based on the student's record during a previous year of study and service at the institution. Required services and enrollment limitations are the same as for assistants. The stipend is \$640 a year.

Graduate and Research Fellowships. A fellow is normally a person proceeding toward the doctorate, with at least one year of markedly superior work toward that degree completed. The graduate fellow gives instructional assistance in his department. The duties of a research fellow are similar to the duties of a research assistant; a fellow is, however, expected to assume greater responsibility in connection with the research project to which he is assigned. Fellows are allowed to enroll for a maximum of 10 term hours of course work. The stipend is \$750 a year.

State Scholarships. A limited number of scholarships covering tuition and laboratory and course fees are available to graduate students in the institutions of the Oregon State System of Higher Education. All applicants, to be eligible, must be in need of financial assistance, and must show evidence of superior scholarship. Applications (on official blanks) should be sent, not later than June 15, to the office of the Graduate Division at the institution which the student wishes to attend.

American Association of University Women Graduate Scholarship. Every three years beginning 1931 the Oregon division of the American Association of University Women gives a \$1,200 scholarship to a woman who is a resident of Oregon, and who holds at least a bachelor's degree, for advanced study at any American or foreign university.

University of Oregon

Ion Lewis Scholarship in Architecture. This fellowship, worth approximately \$1,200, is awarded whenever sufficient funds are available to an advanced student in architecture at the University of Oregon. Award is made on the basis of character, health, ability, promise, and need of travel. The fellowship is supported

by a trust fund established by the late Ion Lewis of Portland. The fund is administered by a managing committee.

Sigma Xi Graduate Research Prize. A prize of \$25.00 is awarded by the Oregon Chapter of Sigma Xi to a student, working in one of the fields from which Sigma Xi selects its members, for the most outstanding research.

Oregon State College

Sigma Xi Graduate Research Prize. A prize of \$25.00 is awarded by the Oregon State chapter of Sigma Xi to a candidate for a master's degree in one of the fields from which Sigma Xi selects its members, for the most outstanding thesis. Theses, to be eligible for consideration, must be deposited by the candidate in the office of the Graduate Division not later than May 5.

Phi Kappa Phi Exchange Scholarship. To encourage interchange among students of the cultures of this and other countries, the local chapter of Phi Kappa Phi supports an international exchange scholarship, under which a foreign student receives tuition and room for one academic year at Oregon State College. The Oregon State student who goes abroad receives similar assistance from the foreign institution; he returns to this campus for the year following the one spent abroad.

Standard Oil Company Fellowship. A grant from the Standard Oil Company of California to the State College provides a \$750 fellowship for fundamental research in the Department of Chemistry.

Kingery Dermatological Research Assistantship in Chemistry. A research assistantship is available for the study of chemical means for combating pathogenic yeast infections. The stipend of approximately \$300 is given by Dr. Lyle B. Kingery of Portland, and the project is under the immediate direction of Dr. Roger J. Williams of the Chemistry Department.

The Mary J. L. McDonald Fellowship in Reforestation. Through the generosity of the late Mrs. Mary J. L. McDonald of San Francisco, a fellowship has been established giving opportunity to do advanced study in problems of reforestation. The fellowship is awarded each year by a committee of the faculty of the Oregon State School of Forestry to a graduate of a recognized school of forestry on the basis of proficiency in forestry studies, personality, and demonstrated ability to do independent work.

Standard Brands, Inc. Grant. A grant of \$1,200 a year is given for chemical research on yeast by Standard Brands, Inc. of New York, successor to the Fleischmann Company. This grant is expended under the direction of Dr. Roger J. Williams of the Chemistry Department for equipment, supplies, and assistance, and allows the appointment of one or more research assistants.

International Friendship Scholarship. The Home Economics Club of the State College on March 2, 1926 established a scholarship of \$500 which is awarded annually to a graduate foreign student to study home economics at Oregon State College. The recipient of the scholarship is selected by a committee composed of the executive council of the Home Economics Club, the dean of the School of Home Economics, and a representative of Omicron Nu.

The Drucilla Shepard Smith Prize. Through the generosity of John E. Smith of the Class of 1902 a sum of \$500 has been contributed as a memorial to his mother, the late Drucilla Shepard Smith (Mrs. F. S. Smith) formerly of McCoy, Polk County, Oregon. The income from this gift is awarded annually to the graduate or undergraduate student who during the year has had published the best article or series of articles dealing with practical solutions of problems that confront women in rural homes. These problems may be concerned with club work, education, finance, family government, health and sanitation, marketing, psychology, recreation, social affairs, or any other subject in which difficulties arise for the rural homemaker. The judges determining the award of this prize are appointed by the president of the State College.

University of Oregon Medical School

Noble Wiley Jones Pathology Research Fellowship. This fellowship, founded in 1919, consisting of the interest on \$5,000 held in trust, is the gift of Dr. Noble Wiley Jones of Portland and is awarded annually to a medical student on the basis of scholastic ability, training in pathology, and interest in the work.

Henry Waldo Coe Prize. This prize, founded in 1929, is awarded annually to a second-, third-, or fourth-year student in the Medical School who presents an essay on a medical subject exhibiting superiority and originality in composition. The prize consists of the interest on a gift of \$1,000 from the late Dr. Henry Waldo Coe.

Library Facilities

THE libraries of the institutions of the Oregon State System of Higher Education contain a total of 530,876 volumes. The libraries of the State System are organized into a single unit under the supervision of a director, with a local librarian on each campus. The director is also librarian of the State College at Corvallis, where the central offices of the library system are located.

The collections at the several institutions are developed to meet the special needs on each campus; but the book stock of the libraries, as property of the state, circulates freely to permit the fullest use of all books.

A combined author list of all books and periodicals in the State System is maintained in the central office to facilitate a better distribution of the book stock and to eliminate unnecessary duplication of published material. The combined author list also provides a valuable aid for bibliographical research.

For more detailed statements of library facilities, see pages 25, 55, 85 and 89.

Research

RESearch by members of the faculties of the institutions of the Oregon State System of Higher Education is encouraged and subsidized through the interinstitutional General Research Council and through special institutional research agencies. The research and graduate-study programs are closely coordinated. Qualified graduate students have the opportunity of working with faculty members on original investigations. A limited number of graduate

students receive financial aid through research assistantships, scholarships, and fellowships (see page 16).

The General Research Council is concerned with general policies affecting the research interests of members of the faculties. It prepares annually and submits a budget for the support of research. The council is made up of the following members: Earl Leroy Packard, Dean and Director of General Research, chairman; Olof Larsell, Dean of the Graduate Division, vice-chairman; William F. Allen, Chandler Baker Beall, Ralph Ruskin Huestis, Ralph Waldo Leighton, Fred Orville McMillan, William Edmund Milne, William Alfred Schoenfeld, Howard Rice Taylor, Willibald Weniger, Louis Aubrey Wood.

Under the General Research Council are organized four divisional councils: Language, Literature, and Art (Chandler Baker Beall, chairman); Natural Science (William Edmund Milne, chairman); Social Science (Louis Aubrey Wood, chairman); Medical Science (William F. Allen, chairman). The divisional councils are advisory bodies assisting in the encouragement of research in their respective fields, in the development of cooperative research, and in the examination and evaluation of projects for which research funds are requested.

Special research agencies at the University are the Commonwealth Service Council (Calvin Crumbaker, chairman) and the Institutional Research Council (Donald Milton Erb, chairman). Special research agencies at the State College are the Agricultural Experiment Station (William Alfred Schoenfeld, director) and the Engineering Experiment Station (Richard Harold Dearborn, director).

University of Oregon

Graduate Faculty

DONALD MILTON ERB, Ph.D., President; Professor of Economics.
OLOF LARSELL, Ph.D., Sc.D., Dean and Director of the Graduate Division, State System; Professor of Anatomy.
GEORGE REBEC, Ph.D., Dean Emeritus of the Graduate Division, State System; Prince Lucien Campbell Professor Emeritus of Philosophy.
HOWARD RICE TAYLOR, Ph.D., Assistant Dean of the Graduate Division; Professor of Psychology; Head of Department; Director, Bureau of Personnel Research.

PERCY PAGET ADAMS, A.B., B.S., Assistant Dean of the School of Architecture and Allied Arts; Professor of Graphics.
FLORENCE DELIA ALDEN, M.A., Professor of Physical Education.
ALTON LOVELL ALDERMAN, Ph.D., Assistant Professor of Zoology.
ERIC WILLIAM ALLEN, A.B., Dean of the School of Journalism; Professor of Journalism; Manager of University Press.
LOUIS ARTAU, Assistant Professor of Music.
VICTORIA AVAKIAN, B.A., Associate Professor of Applied Design.
JAMES DUFF BARNETT, Ph.D., Professor of Political Science; Head of Department.
OLIVER LAURENCE BARRETT, Associate Professor of Sculpture.
CHANDLER BAKER BEALL, Ph.D., Professor of Romance Languages.
LESTER F. BECK, Ph.D., Associate Professor of Psychology.
LOUIS BERELSON, Ph.D., Adviser in General Studies, Portland Center.
HAROLD WRIGHT BERNARD, Ph.D., Assistant Professor of Education.
FRANK GEES BLACK, Ph.D., Assistant Professor of English.
JESSE HICKMAN BOND, Ph.D., Professor of Business Administration.
RAY PRESTON BOWEN, Ph.D., Professor of Romance Languages; Head of Department.
CLARENCE VALENTINE BOYER, Ph.D., Dean of the College of Arts and Letters; Professor of English; Head of Department.
QUIRINUS BREEN, Ph.D., Instructor in History.
EYLER BROWN, M.Arch., Associate Professor of Architecture.
JULIA BURGESS, M.A., Professor of English.
ORIN KAY BURRELL, M.A., C.P.A., Professor of Business Administration.
DAN ELBERT CLARK, Ph.D., Professor of History; Assistant Director of General Extension and Summer Sessions.
ROBERT CARLTON CLARK, Ph.D., Professor of History; Head of Department.
FREDERICK MALCOLM COMBELLACK, Ph.D., Instructor in Latin and Greek.

NEWEL HOWLAND COMISH, Ph.D., Professor of Business Administration.
LUTHER SHEELEIGH CRESSMAN, Ph.D., Professor of Anthropology; Head of Department; Curator of Anthropology; Director, Museum of Natural History.
HAROLD RANDOLPH CROSLAND, Ph.D., Associate Professor of Psychology.
CALVIN CRUMBAKER, Ph.D., Professor of Economics.
FREDERICK ALEXANDER CUTHBERT, M.L.D., Associate Professor of Landscape Architecture.
RUDOLF HERBERT ERNST, Ph.D., Professor of English.
JOHN STARK EVANS, A.B., Professor of Organ and Structure of Music.
ANDREW FISH, Ph.D., Associate Professor of History.
BROWNELL FRASIER, B.A., Associate Professor of Interior Design.
DELBERT RANSOM FRENCH, Ph.D., Associate Professor of Economics.
DANIEL DUDLEY GAGE, JR., Ph.D., Associate Professor of Business Administration.
JOHN TILSON GANOE, Ph.D., Associate Professor of History.
JAMES HENRY GILBERT, Ph.D., Dean of the College of Social Science; Professor of Economics; Head of Department.
ROBERT CARR HALL, Associate Professor of Journalism; Superintendent of University Press.
GEORGE HOPKINS, A.B., Professor of Piano.
ROBERT DEWEY HORN, Ph.D., Associate Professor of English.
HERBERT CROMBIE HOWE, B.L., A.B., Professor of English.
CARL LEO HUFFAKER, Ph.D., Professor of Education.
FREDERICK MAURICE HUNTER, Ed.D., LL.D., Professor of Education.
SAMUEL HAIG JAMESON, Ph.D., Professor of Sociology.
BERTRAM EMIL JESSUP, Ph.D., Assistant Professor of English.
JAMES RALPH JEWELL, Ph.D., LL.D., Dean of the School of Education; Professor of Education.
CARL LEONARD JOHNSON, Ph.D., Assistant Professor of Romance Languages.
CARDINAL LYLE KELLY, M.A., C.P.A., Professor of Business Administration.
MAUDE IRVINE KERNS, B.A., B.S., Associate Professor of Normal Art.
ERNESTO RAY KNOLLIN, M.A., Professor of Physical Education.
EDMUND PHILIPP KREMER, J.U.D., Professor of Germanic Languages and Literatures.
EDNA LANDROS, Ph.D., Assistant Professor of Latin and Greek.
*JOHN JACOB LANDBURY, Mus.D., Dean of the School of Music; Professor of Music.
ELLIS FULLER LAWRENCE, M.S., F.A.I.A., Dean of the School of Architecture and Allied Arts; Professor of Architecture.
ROBERT W. LEEPER, Ph.D., Assistant Professor of Psychology.
RALPH WALDO LEIGHTON, Ph.D., Dean of the School of Physical Education; Professor of Education.
EDWARD CHRISTIAN ALAN LESCH, Ph.D., Associate Professor of English.

ALFRED LEWIS LOMAX, M.A., Professor of Business Administration.
 ROSE ELIZABETH MCGREW, Professor of Voice.
 FREEMAN GLENN MACOMBER, Ed.D., Professor of Education.
 ERNEST GEORGE MOLL, A.M., Associate Professor of English.
 ELIZABETH BRIGGS MONTGOMERY, Ph.D., Assistant Professor of Education.
 ARTHUR RUSSELL MOORE, Ph.D., Research Professor of General Physiology.
 ELON HOWARD MOORE, Ph.D., Professor of Sociology.
 VICTOR PIERPONT MORRIS, Ph.D., Dean of the School of Business Administration;
 Professor of Economics.
 ANDREW FLEMING MOURSUND, Ph.D., Associate Professor of Mathematics.
 HAROLD JOYCE NOBLE, Ph.D., Associate Professor of History.
 KARL WILLIAM ONTHANK, M.A., Dean of Personnel Administration.
 PHILIP ARCHIBALD PARSONS, Ph.D., LL.D., Professor of Sociology; Head of
 Department.
 MARY HALLOWELL PERKINS, M.A., Professor of English.
 ARNE RAE, B.S. in Journ., Assistant Professor of Journalism.
 JOHN GILBERT REID, Ph.D., Assistant Professor of History.
 WILBUR POWELSON RIDDLESBARGER, A.M., J.D., Assistant Professor of Business
 Administration.
 FRIEDRICH GEORG GOTTLIEB SCHMIDT, Ph.D., Professor of Germanic Languages
 and Literatures; Head of Department.
 WALDO SCHUMACHER, Ph.D., Professor of Political Science.
 HENRY DAVIDSON SHELDON, Ph.D., Research Professor of History and Educa-
 tion.
 SAMUEL STEPHENSON SMITH, B.Litt. (Oxon.), Professor of English.
 WARREN DUPRE SMITH, Ph.D., Professor of Geography and Geology; Head of
 Department of Geography; Head of Department of Geology; Curator, Con-
 don Museum of Geology.
 JOHN STEHN, M.S., Assistant Professor of Wind Instruments.
 FRED LEA STETSON, M.A., Professor of Education.
 ARTHUR BENJAMIN STILLMAN, M.B.A., Associate Professor of Business Ad-
 ministration.
 CELESTINE JAMES SULLIVAN, JR., Ph.D., Assistant Professor of Philosophy.
 JANE THACHER, Professor of Piano.
 W. F. GOODWIN THACHER, M.A., Professor of Advertising.
 ANNA MCFEELY THOMPSON, M.A., Assistant Professor of Romance Languages.
 HARRIET WATERBURY THOMSON, A.B., Professor of Physical Education.
 HARVEY GATES TOWNSEND, Ph.D., Professor of Philosophy; Head of Depart-
 ment.
 GEORGE STANLEY TURNBULL, M.A., Professor of Journalism.
 REX UNDERWOOD, Professor of Music.
 ANDREW MCDUFFIE VINCENT, Professor of Drawing and Painting.
 PAUL RUDOLPH WASHKE, A.M., Professor of Physical Education.
 WALTER ROSS BAUMES WILLCOX, Professor of Architecture.

ASTRID MÖRK WILLIAMS, Ph.D., Assistant Professor of Germanic Languages
 and Literatures.
 LOUIS AUBREY WOOD, Ph.D., Professor of Economics.
 JANET GRANT WOODRUFF, M.A., Associate Professor of Physical Education.
 LEAVITT OLDS WRIGHT, Ph.D., Professor of Romance Languages.
 NOWLAND BRITTIN ZANE, Associate Professor of Space Arts.

Associates, Fellows, and Assistants 1938-39

MABEL McCLAIN, B.A., B.S., Research Associate in History.
 MATHEA HANSON, B.A., Teaching Fellow in English.
 LOUISE AIKEN, B.A., Graduate Assistant in Economics.
 ROBERT EUGENE ANDERSON, M.S., Graduate Assistant in Education.
 MORTIMER ANDRON, A.B., Graduate Assistant in Economics.
 DAVID GAMMONS ARNOLD, B.A., Graduate Assistant in Drawing and Painting.
 RALPH G. BAILEY, M.A., Graduate Assistant in Education.
 FREED BALES, B.S., Graduate Assistant in Social Science.
 ORPHEA MAY BECK, B.S., Graduate Assistant in Social Science.
 PAUL BEISTEL, B.A., Graduate Assistant in English.
 BENJAMIN COOK BOWMAN, B.A., Graduate Assistant in English.
 HARLAN PAUL BRAMBLE, B.A., Graduate Assistant in Economics.
 RAYMOND ELLSWORTH BROOKS, B.A., Graduate Assistant in Psychology.
 RUTH MARCIA BROWN, B.A., Graduate Assistant in English.
 MARJORIE SHANE CHAGNON, M.A., Graduate Assistant in English.
 FRANK LEWIS CHAMBERS, B.S., Graduate Assistant in Economics.
 FREDERICK HERBERT COLWELL, M.A., Graduate Assistant in Physical Education.
 PAUL THOMAS CULBERTSON, A.B., Graduate Assistant in History.
 ELIZABETH ANN DEBUSK, B.A., Graduate Assistant in Psychology.
 RONALD BERNARD DICKIE, B.S., Graduate Assistant in Physical Education.
 ROBIN ARTHUR DREWS, B.A., Research Assistant in Anthropology.
 MARJORIE JANE EARLL, B.A., Graduate Assistant in English.
 WALTER ESCHBECK, B.A., Graduate Assistant in Speech.
 MARION GRACE FULLER, B.A., Graduate Assistant in Romance Languages.
 LOIS HELEN FUQUA, B.A., Graduate Assistant in English.
 FRANCES MARGUERITE HARLAND, M.A., Graduate Assistant in Romance Lan-
 guages.
 DORIS RAE HARTSHORNE, B.A., Graduate Assistant in English.
 PAUL E. HAYMAN, B.A., Graduate Assistant in Business Administration.
 FREDERICK JOHN HOFFSTAED, B.S., Graduate Assistant in Geography.
 ALICE HOLMBACK, B.A., Graduate Assistant in Public-School Music.
 MARY MING HOLMES, B.A., Research Assistant in Personnel Research Bureau.

DORTHALEE B. HORNE, B.S. in Ed., Graduate Assistant in Physical Education.
 MARY KESSI, B.A., Research Assistant in Romance Languages.
 ROBERT H. KNAPP, B.A., Graduate Assistant in Psychology.
 WALTER CARL KRAFT, B.A., Graduate Assistant in Germanic Languages and Literatures.
 GLEN R. MCDANIEL, B.S., Graduate Assistant in Business Administration.
 GRACE P. MORRIS, B.S., Research Assistant in History.
 DAVID BURBANK PENNELL, B.A., Graduate Assistant in English.
 CHARLES EDGAR RASOR, B.S., Graduate Assistant in Business Administration.
 J. MONROE RICHARDSON, B.A., Graduate Assistant in Public-School Music.
 EDWIN CLYDE ROBBINS, B.A., Graduate Assistant in Economics.
 STANLEY ROBE, B.A., Research Assistant in Romance Languages.
 RUTH IRENE RUSSELL, B.S. in P.E., Graduate Assistant in Physical Education.
 JOHN WALLACE RYDER, B.S., Graduate Assistant in General Art.
 WAYNE SATCHELWELL, B.A., Graduate Assistant in Sociology.
 JAMES ROY SCHWARTZ, B.S., Graduate Assistant in English.
 JEAN SUTHERLAND, B.A., Graduate Assistant in Sculpture.
 BETH ELAINE TAYLOR, B.S., Graduate Assistant in Physical Education.
 DOROTHEA TUNNEY, B.A., Research Assistant in History.
 ROBERT G. VOSPER, B.A., Research Assistant in English.
 JAMES CUNNINGHAM WELCH, M.A., Research Assistant in Psychology.
 MARY FITCH WERNHAM, B.A., Graduate Assistant in Romance Languages.
 JAY RUSSELL WILSON, B.A., Graduate Assistant in Business Administration.

Graduate Work at the University

GRADUATE work at the University is carried on under the auspices of the Graduate Division and under the direction of the Graduate Council of the University and the dean of the Graduate Division. Correspondence relating to graduate work in the fields allocated to the University should be addressed to the Graduate Division, University of Oregon, Eugene, Oregon, or to the department concerned.

The University offers graduate work leading to advanced degrees in: arts and letters, social science (including psychology), architecture and allied arts, business administration, education, journalism, music, and physical education.

The following degrees are granted by the University through the Graduate Division:

Doctor of Philosophy: Economics, Education, English, German, History, Psychology, Romance Languages, Sociology.

Doctor of Education: Education.

Master of Arts (Departmental): Anthropology, Architecture, Art, Business Administration, Classics, Economics, Education, English, Geography, German, History, Journalism, Landscape Architecture, Music, Philosophy, Physical Education, Political Science, Psychology, Romance Languages, Sociology.

Master of Arts (General Studies).

Master of Science: Anthropology, Architecture, Art, Business Administration, Economics, Education, English, Geography, History, Journalism, Landscape Architecture, Music, Philosophy, Physical Education, Political Science, Psychology, Sociology.

Master of Fine Arts: Art and Architecture, Landscape Architecture, Music.

Master of Architecture: Architecture.

Master of Business Administration: Business Administration.

Master of Education: Education.

Master of Landscape Architecture: Landscape Architecture.

Students who are preparing for a medical career or who have the M.D. degree may take graduate work at the University of Oregon Medical School toward the M.A., M.S., or Ph.D. degree in preclinical fields. These students receive their degrees from the University.

Library

DURING the summer of 1937, the University Library moved into a new \$500,000 building. The building is carefully planned for reading comfort and efficiency. The reading rooms seat 900 readers. After many years of cramped conditions, all the Library's books are now under one roof and in modern fireproof stacks. The stacks will shelve 400,000 books; the building is planned to make the addition of stack space simple and economical.

The University Library now contains 293,346 volumes. All the books (530,876 volumes on March 1, 1939) in the libraries of the several institutions of the Oregon State System of Higher Education are available to the students and faculty of the University. The University Library maintains an author list of books in the State College Library.

The Library is well equipped with standard reference books. About 2,260 periodicals and 150 newspapers are regularly received.

Some of the Library's resources of particular value for advanced study are: a collection of source materials on English life and letters in the seventeenth century; a collection of books, reports, and periodicals on English opinion and politics in the nineteenth century, including considerable material on English liberalism in its relation to public education; materials on the history of American education in the nineteenth century; a valuable collection of pamphlets on the English Corn Laws; the Overmeyer Collection of published works on the Civil War; the Oregon Collection of 5,400 books and pamphlets on Northwest history (the Library has, in addition, nearly 5,000 volumes of files of Oregon newspapers); a collection of League of Nations documents (1,050 volumes); a collection of Balzaciana; unusually extensive and complete files of psychological journals.

The Burgess Collection of Rare Books and Manuscripts contains 1,000 volumes from the library of Dr. Edward S. Burgess, late professor of biological sciences at Hunter College. The collection is the gift of Miss Julia Burgess, professor of English at the University, and of friends of the institution. It includes fifteen Latin manuscripts, a number of Near Eastern manuscripts, thirty-eight volumes of incunabula, and rare books of the seventeenth, eighteenth, and nineteenth centuries.

John Henry Nash, San Francisco printer, has placed his collection of 2,400 volumes illustrating the history of printing in the University Library as a semi-permanent loan. The Nash library is one of the world's best collections in this field.

The Municipal Reference Library, maintained by the Bureau of Municipal Research and Service in Fenton Hall, contains about 3,500 items, mainly pamphlets dealing with problems of local government.

The Law Library in Fenton Hall contains approximately 25,000 books. It includes gifts from the libraries of Mr. Lewis Russell, Judge Matthew P. Deady, Judge W. D. Fenton, and Judge Robert Sharp Bean. Judge Fenton's gift, the Kenneth Lucas Fenton Memorial Library, contains about 8,000 volumes. The Robert Sharp Bean Memorial Library contains about 1,000 volumes.

The Museum Library, 3,500 books dealing with the history, literature, life, and particularly the art of Oriental countries, is the gift of Mrs. Gertrude Bass Warner, and is growing steadily through additional gifts from Mrs. Warner. The Museum Library, which occupies attractive quarters on the first floor of the Museum of Art, is open daily from 2:00 to 5:00 p.m., except Saturdays and Sundays.

The School of Architecture and Allied Arts has a reference collection in the Art and Architecture Building. The collection includes the architecture library of the late Mr. Ion Lewis, Portland architect, given in 1929 by Mr. Lewis, and the library of Mr. William Whidden, given by his heirs.

Service. During the regular session the main Library is regularly open on Mondays, Tuesdays, Wednesdays, and Thursdays from 7:45 a.m. to 10:00 p.m.; on Fridays from 7:45 a.m. to 6:00 p.m.; on Saturdays from 8:00 a.m. to 6:00 p.m.; and on Sundays from 2:00 to 9:00 p.m. During vacations, hours are from 9:00 a.m. to 6:00 p.m. Books (other than reference books and those especially reserved for use in the Library) may be drawn out for a period of one month, with the privilege of renewal if there is no other demand. All persons connected with the University have the privilege of drawing books. The use of the Library for reference purposes is extended to the general public.

Living Expenses

THE average cost of a year at the University of Oregon has been estimated at approximately \$480.00, including fees, books, supplies, board and room, and incidentals. The actual cost will, of course, vary considerably. Some students with ample means spend more; but many students find it possible to attend the University at a lower cost.

The cost of board and room in the University halls of residence is \$33.00 a calendar month when the student shares a double room with another, and \$38.00 a calendar month when the student occupies a single room.

Board and room can be obtained in private homes or boarding houses at rates varying from \$22.00 to \$35.00 a month.

The University Employment Service assists self-supporting students in finding jobs. Applications should be filed in the office of the Employment Service in the Y.M.C.A. Hut.

For several years the National Youth Administration has furnished part-time employment for many students on campus projects. Students wishing NYA work should make application through the Employment Service or through the Dean of Personnel Administration.

General Studies

ELON HOWARD MOORE (chairman of committee in charge)

- GSt 501. **Research in General Studies.** Terms and hours to be arranged.
 GSt 503. **Graduate Thesis.** Terms and hours to be arranged.
 GSt 505. **Reading and Conference.** Terms and hours to be arranged.

College of Arts and Letters

DEAN: C. VALENTINE BOYER

General Arts and Letters

- AL 411, 412, 413. **Philosophical Backgrounds of Modern Literature.** (G) Three terms, 3 hours each term. Sullivan.
 AL 462, 463, 464. **The Psychological Novel.** (G) Three terms, 2 or 3 hours each term. Prerequisite: upper-division course in literature. Smith.
 AL 477, 478, 479. **Dante and His Times.** (G) Three terms, 3 hours each term. Prerequisite: upper-division course in literature. Beall.

Classics

ASSISTANT PROFESSOR: EDNA LANDROS; INSTRUCTOR: FREDERICK MALCOLM COMBELLACK

GREEK

- Gr 411, 412, 413. **Plato and Aristotle.** (G) Three terms, 3 hours each term. Combellack.
 Gr 414, 415, 416. **Attic Orators.** (G) Three terms, 2 hours each term. Landros.
 Gr 503. **Thesis.** Terms and hours to be arranged.
 Gr 505. **Reading and Conference.** Terms and hours to be arranged.
 Gr 511, 512, 513. **Greek Literature.** Terms and hours to be arranged. Combellack.

LATIN

- Lat 407. **Undergraduate Seminar.** (G) Terms and hours to be arranged.
 Lat 461, 462, 463. **Latin Literature: The Historians.** (G) Three terms, 3 hours each term. Landros.
 Lat 503. **Thesis.** Terms and hours to be arranged.
 Lat 505. **Reading and Conference.** Terms and hours to be arranged.
 Lat 507. **Seminar.** Terms and hours to be arranged.
 Lat 511, 512, 513. **Readings in Medieval Latin.** Hours to be arranged. Landros.
 Lat 514, 515, 516. **History of Latin Literature.** Three terms, hours to be arranged. Landros.
 Lat 526, 527, 528. **Historical Latin Grammar.** Hours to be arranged. Landros.

English

PROFESSORS: C. VALENTINE BOYER (department head), JULIA BURGESS, RUDOLF HERBERT ERNST, HERBERT CROMBIE HOWE, MARY HALLOWELL PERKINS, S. STEPHENSON SMITH;
ASSOCIATE PROFESSORS: ROBERT DEWEY HORN, EDWARD CHRISTIAN ALAN LESCH, ERNEST GEORGE MOLL; ASSISTANT PROFESSORS:
FRANK GEES BLACK, BERTRAM EMIL JESSUP

- Eng 407. Seminar in Special Authors. (G) Hours to be arranged.
Eng 411, 412, 413. Anglo-Saxon. (G) Three terms, 3 hours each term. Perkins.
Eng 414. Chaucer. (G) Fall term, 3 hours. Perkins, Lesch.
Eng 415. Late Medieval Prose and Poetry. (G) Winter term, 3 hours. Perkins.
Eng 416. Arthurian Legend in English Literature. (G) Spring term, 3 hours. Perkins.
Eng 417, 418, 419. Development of the English Language. (G) Three terms, 3 hours each term. Perkins.
Eng 421. Spenser. (G) Winter term, 3 hours. Lesch.
Eng 431, 432, 433. Eighteenth-Century Literature. (G) Three terms, 3 hours each term. Horn.
Eng 434, 435, 436. English Drama. (G) Three terms, 3 hours each term. Ernst.
Eng 440. Advanced Shakespeare. (G) Fall term, 3 hours. Prerequisite: sophomore sequence or any one-year sequence in Shakespeare. Lesch.
Eng 444, 445, 446. Eighteenth-Century Prose. (G) Three terms, 3 hours each term. Smith.
Eng 447, 448, 449. Seventeenth-Century Literature. (G) Three terms, 3 hours each term.
Eng 450. Pope. (G) Fall term, 3 hours.
Eng 451. Milton. (G) Spring term, 3 hours. Lesch.
Eng 457, 458, 459. Literature of the Renaissance. (G) Three terms, 3 hours each term. Smith.
Eng 460. Shelley. (G) Winter term, 3 hours. Howe.
Eng 472. Jacobean Drama. (G) Spring term, 3 hours.
Eng 481, 482, 483. Nineteenth-Century Prose. (G) Three terms, 3 hours each term. Boyer.
Eng 485. Arnold. (G) Spring term, 3 hours.
Eng 501. Research. Hours to be arranged.
Eng 503. Thesis. Terms and hours to be arranged.
Eng 505. Reading and Conference. Terms and hours to be arranged.
Eng 507. Seminar in Special Authors. Hours to be arranged.
Eng 511, 512, 513. Carlyle. Three terms, 2 or 3 hours each term.
Eng 517, 518, 519. Romantic Tendencies in the Eighteenth Century. Three terms, 3 hours each term. Ernst.
Eng 521, 522, 523. English Comedy (Seminar). Three terms, 2 or 3 hours each term. Smith.

- Eng 527, 528, 529. Seminar in Elizabethan Drama. Three terms, 3 hours each term.
Eng 531, 532, 533. The Evolution of Tragedy. Three terms, 2 or 3 hours each term. Ernst.
Eng 534, 535, 536. Seminar in American Literature. Three terms, 2 hours each term. Burgess.
Eng 537, 538, 539. Social Problems in English Literature. Three terms, 2 or 3 hours each term.
Eng 540. Problems and Methods of Literary Study. Fall term, 3 hours.
Eng 541, 542, 543. History of Criticism (Seminar). Three terms, 3 hours each term. Jessup, Burgess.

Germanic Languages and Literatures

PROFESSORS: FRIEDRICH GEORG GOTTLÖB SCHMIDT (department head), EDMUND PHILIPP KREMER; ASSISTANT PROFESSOR: ASTRID MÖRK WILLIAMS

- GL 407. Seminar. (G) Terms and hours to be arranged. Schmidt.
GL 411, 412, 413. History of German Literature. (G) Three terms, 1 to 3 hours each term.
GL 414. Physiological Phonetics. (G) Any term, 2 hours. Schmidt.
GL 461, 462, 463. Scandinavian Literature and Its Relation to World Literature. (G) Three terms, 3 hours each term. Prerequisite: GL 451, 452, 453, together with a reading knowledge of Scandinavian and one year of upper-division German literature.
GL 503. Thesis. Terms and hours to be arranged.
GL 505. Reading and Conference. Any term, 1 to 3 hours.
GL 507. Seminar. Terms and hours to be arranged. Schmidt.
GL 511, 512, 513. Middle High German. Terms and hours to be arranged. Schmidt and Williams.
GL 514, 515, 516. Old High German and Old Saxon. Terms and hours to be arranged.
GL 517, 518, 519. Gothic and Comparative German Grammar. Three terms, 3 hours each term.
GL 550. Old Icelandic. Term and hours to be arranged.

Philosophy

PROFESSOR: HARVEY GATES TOWNSEND (department head); PROFESSOR EMERITUS: GEORGE REBEC; ASSISTANT PROFESSOR: CELESTINE JAMES SULLIVAN, JR.

A candidate for a master's degree in philosophy must have completed at least two upper-division year sequences in philosophy during his undergraduate years. Private study of philosophical books and theories may be taken into account in the evaluation of undergraduate preparation. Before receiving an advanced degree, the candidate must show an accurate acquaintance with the leading systems in the history of philosophy, and be familiar with the major divisions of philosophy—logic, ethics, and metaphysics.

- Phl 407. **Undergraduate Seminar.** (G) Terms and hours to be arranged.
- AL 411, 412, 413. **Philosophical Backgrounds of Modern Literature.** (G) Three terms, 3 hours each term. Sullivan.
- Phl 431, 432, 433. **History of Philosophy.** (g) Three terms, 3 hours each term. Townsend.
- Phl 503. **Graduate Thesis.** Terms and hours to be arranged.
- Phl 505. **Reading and Conference.** Terms and hours to be arranged.
- Phl 507. **Graduate Seminar.** Terms and hours to be arranged.

Romance Languages

PROFESSORS: RAY PRESTON BOWEN (department head), CHANDLER BAKER BEALL, LEAVITT OLDS WRIGHT; ASSISTANT PROFESSORS: CARL LEONARD JOHNSON, ANNA MCFEELY THOMPSON

A candidate for the doctorate in Romance languages must possess a satisfactory knowledge of the literature of French, Italian, and Spanish; or of two of the Romance languages and one other foreign language; or of two of the Romance languages and English literature. His knowledge must include also the phonology and morphology of at least two of the Romance languages. He must have studied Vulgar Latin and Provençal. A reading knowledge of Medieval Latin is highly recommended.

- RL 411, 412, 413. **Seventeenth-Century French Literature.** (G) Three terms, 3 hours each term. Bowen.
- RL 417, 418, 419. **Nineteenth-Century French Novel.** (G) Three terms, 3 hours each term. Bowen.
- RL 420, 421, 422. **Modern French Drama and Lyric Poetry.** (G) Three terms, 3 hours each term. Johnson.
- RL 429, 430, 431. **French Culture and Civilization.** (G) Three terms, 3 hours each term. Johnson.
- RL 441, 442, 443. **Modern Spanish Literature.** (G) Three terms, 3 hours each term. Thompson.
- RL 444, 445, 446. **Spanish-American Literature.** (G) Three terms, 3 hours each term. Wright.
- RL 474, 475, 476. **Fourth-Year Italian.** (G) Three terms, 2 hours each term. Beall.
- AL 477, 478, 479. **Dante and His Times.** (G) Three terms, 3 hours each term. Prerequisite: upper-division course in literature. Beall.
- RL 503. **Thesis.** Three terms, hours to be arranged.
- RL 505. **Readings in Romance Languages.** Terms and hours to be arranged.
- RL 507. **French Seminar.** Three terms, hours to be arranged. Bowen.
- RL 508. **Spanish Seminar.** Three terms, hours to be arranged. Wright.
- RL 511, 512, 513. **French Literature in the Nineteenth Century.** Three terms, 3 hours each term. Bowen.
- RL 514, 515, 516. **French Literature in the Eighteenth Century.** Three terms, 3 hours each term. Beall.

- RL 517, 518, 519. **French Literature in the Sixteenth Century.** Three terms, 3 hours each term. Beall.
- RL 520, 521, 522. **Romance Philology.** Three terms, 2 hours each term. Bowen.
- RL 523, 524, 525. **Vulgar Latin and Old Provençal.** Three terms, 2 hours each term. Wright.
- RL 529, 530, 531. **Spanish Literature of the Sixteenth and Seventeenth Centuries.** Three terms, 3 hours each term. Wright.
- RL 535, 536, 537. **Old Spanish.** Three terms, 2 hours each term. Wright.
- RL 538, 539, 540. **Old French Readings.** Three terms, 2 hours each term. Johnson.

College of Social Science

DEAN: JAMES HENRY GILBERT

General Social Science

- SSc 411. **Social-Science Synthesis for Teachers.** (G) Fall or winter term, 3 hours. Sheldon and social-science staff.
- SSc 508. **Social-Science Symposium.** Terms and hours to be arranged.

Anthropology

PROFESSOR: LUTHER SHEELEIGH CRESSMAN (department head)

All graduate students must enroll in the graduate seminar. Students specializing in archaeology must do field work for at least one summer. Service courses or a graduate minor in the following fields are suggested as particularly desirable for a graduate student in anthropology: geography, history, psychology, sociology. The department offers graduate work toward the master's degree only. It is recommended that the student qualify for the Master of Arts degree by acquiring a reading knowledge of a foreign language.

- Anth 411, 412, 413. **Problems of Race and Culture.** (G) Three terms, 2 hours each term. Prerequisite: Anth 207, 208, 209; or Anth 311, 312, 313; or consent of instructor. Cressman.
- Anth 431, 432, 433. **Primitive Social Institutions: Their Nature and Development.** (G) Three terms, 3 hours each term. Prerequisite: course in anthropology, or equivalent. Cressman.
- Anth 501. **Research in Anthropology.** Terms and hours to be arranged. Cressman.
- Anth 503. **Thesis.** Terms and hours to be arranged. Cressman.
- Anth 505. **Reading and Conference.** Terms and hours to be arranged. Cressman.
- Anth 507. **Seminar in Anthropology.** Any term, 3 hours. Cressman.

Economics

PROFESSORS: JAMES HENRY GILBERT (department head), CALVIN CRUMBAKER, DONALD MILTON ERB, VICTOR PIERPONT MORRIS, LOUIS AUBREY WOOD; ASSOCIATE PROFESSOR: DELBERT RANSOM FRENCH

A graduate major in economics may select his courses in accordance with his special interest. All graduate students must, however, enroll for the graduate seminar. Graduate students are also expected to arrange their study programs to compensate for any deficiencies in their undergraduate training.

Candidates for the doctorate are expected to show a familiarity with five main divisions of the field of economics: public and private finance, labor problems, international trade and economic policy, public utilities and government control, economic history and theory.

- Ec 413. **Money, Banking, and Economic Crises.** (G) Fall term, 5 hours. Prerequisite: Ec 201, 202, 203. Gilbert.
- Ec 418, 419. **Public Finance.** (G) Winter and spring terms, 4 hours each term. Prerequisite: Ec 201, 202, 203. Gilbert.
- Ec 425. **Labor Problems.** (G) Fall term, 4 hours. Open to students who have studied the principles of economics or the principles of sociology. Wood.
- Ec 426. **Organized Labor.** (G) Winter term, 4 hours. Prerequisite: Ec 425. Wood.
- Ec 427. **Labor Legislation.** (G) Spring term, 4 hours. Wood.
- Ec 435. **Economic Problems of State Regulation.** (G) Fall term, 4 hours. Prerequisite: Ec 334, 335, 336, 337, or 338; or consent of instructor. Crumbaker.
- Ec 437. **Economic Problems of Federal Regulation.** (G) Winter term, 4 hours. Prerequisite: Ec 334, 335, 336, 337, or 338; or consent of instructor. Crumbaker.
- Ec 438. **Government Control of Private Business.** (G) Spring term, 4 hours. Prerequisite: Ec 334, 335, 336, 337, or 338; or consent of instructor. Crumbaker.
- Ec 440. **International Trade.** (G) Fall term, 3 hours. Prerequisite: Ec 201, 202, 203. Morris.
- Ec 441, 442. **International Economic Policies.** (G) Winter and spring terms, 3 hours each term. Prerequisite: Ec 201, 202, 203. Morris.
- Ec 445. **Conservation of Natural Resources.** (G) Fall term, 3 hours. Prerequisite: Ec 201, 202, 203. Morris.
- Ec 446, 447. **Economic Problems of the Pacific.** (G) Winter and spring terms, 3 hours each term. Prerequisite: Ec 201, 202, 203. Morris.
- Ec 450, 451. **Modern Theories of Social Reform.** (G) Winter and spring terms, 3 hours each term. Wood.
- Ec 466. **Labor and Remuneration.** (G) Winter term, 3 hours. Prerequisite: Ec 201, 202, 203. Wood.
- Ec 467. **Labor and Agrarian Movements.** (G) Fall term, 3 hours. Prerequisite: Ec 425. Wood.
- Ec 468. **The Mathematical Economists.** (G) Spring term, 3 hours.

- Ec 470, 471, 472. **History of Economic Thought.** (G) Three terms, 3 hours each term. Prerequisite: Ec 201, 202, 203. French.
- Ec 475, 476, 477. **Economic Theory and Problems.** (G) Three terms, 2 hours each term. Prerequisite: Ec 201, 202, 203. Crumbaker.
- Ec 501. **Research in Economics.** Terms and hours to be arranged. Gilbert and staff.
- Ec 503. **Thesis.** Terms and hours to be arranged.
- Ec 507. **Economics Seminar.** Terms and hours to be arranged.

Geography

PROFESSOR: WARREN DUPRE SMITH (department head)

A graduate major in geography may select his courses in accordance with his special interest. All graduate students must, however, enroll for the graduate seminar. Graduate students are also expected to arrange their study programs to compensate for any deficiencies in undergraduate training. Certain advanced courses in anthropology, history, economics, and business administration are closely related to graduate work in geography, and may be incorporated in a program of study toward a master's degree.

- Geo 413. **Geography of Oregon.** (G) Terms and hours to be arranged. Prerequisite: Geo 105, 106, 107; or G 101, 102, 103. Smith.
- Geo 426. **The Geography of Europe.** (G) One term, 3 hours. Prerequisite: Geo 105, 106, 107; or G 101, 102, 103. Smith.
- Geo 428. **The Geography of the Pacific.** (G) One term, 3 hours. Prerequisite: Geo 105, 106, 107; or G 101, 102, 103. Smith.
- Geo 429. **The Geography of North America.** (G) One term, 3 hours. Prerequisite: Geo 105, 106, 107; or G 101, 102, 103.
- Geo 430. **Geography of South America.** (G) One term, 3 hours. Prerequisite: Geo 105, 106, 107; or G 101, 102, 103. Smith.
- Geo 431. **The Geography of Asia.** (G) One term, 3 hours. Prerequisite: Geo 105, 106, 107; or G 101, 102, 103. Smith.
- Geo 432. **Geography of Africa.** (G) One term, 3 hours. Prerequisite: Geo 105, 106, 107; or G 101, 102, 103. Smith.
- Geo 501. **Research.** Terms and hours to be arranged.
- Geo 503. **Graduate Thesis.** Terms and hours to be arranged. Smith.
- Geo 505. **Reading and Conference.** Terms and hours to be arranged.
- Geo 507. **Seminar in Geography.** Terms and hours to be arranged. Smith.

History

PROFESSORS: ROBERT CARLTON CLARK (department head), DAN ELBERT CLARK, HENRY DAVIDSON SHELDON; ASSOCIATE PROFESSORS: ANDREW FISH, JOHN TILSON GANOR, HAROLD JOYCE NOBLE; ASSISTANT PROFESSOR: JOHN GILBERT REID; INSTRUCTOR: QUIRINUS BREEN

Every candidate for a master's degree in history must take graduate courses in three different fields of history and must be prepared for examination in these fields. One of these fields must be selected from each of the following three groups:

Group I: (1) Ancient History; (2) Middle Ages; (3) The Far East; (4) Intellectual and Cultural History.

Group II: (1) Europe, 1500-1815; (2) Europe since 1815; (3) England; (4) British Empire.

Group III: (1) History of the United States to 1788; (2) History of the United States, 1788-1877; (3) History of the United States since 1877.

The department may require a written examination, in addition to the usual oral examination for the master's degree, if this seems desirable as a means of determining the qualifications of the candidate.

Every candidate for the doctor's degree in history must be prepared for examination in the field in which he has written his thesis, in four other fields of history, and in historiography. The four fields (in addition to the field of the thesis) must be selected so that not more than two fall within any one of the following four groups:

Group I: (1) Ancient History; (2) Middle Ages; (3) Renaissance and Reformation; (4) History of England to 1660; (5) Intellectual and Cultural History.

Group II: (1) Germany since 1648; (2) England since 1660; (3) Revolutionary Europe, 1789-1815.

Group III: (1) American History to 1788; (2) History of the United States, 1788-1877; (3) The United States since 1877; (4) Oregon History.

Group IV: (1) Europe since 1871; (2) The Far East; (3) Latin-American History.

Within the fields selected the candidate may give special emphasis to social and intellectual history, constitutional and political history, diplomatic history, or economic history, according to his interests. The department may require written examinations, in addition to the final oral examination.

- Hst 411. History of Greece. (G) Fall term, 3 hours. Breen.
 Hst 412, 413. History of Rome. (G) Winter and spring terms, 3 hours each term. Breen.
 Hst 414, 415, 416. Intellectual and Cultural History of Western Europe. (G) Three terms, 3 hours each term. Fish.
 Hst 417, 418, 419. Great Historians. (G) Three terms, 2 hours each term. Fish.
 Hst 421, 422. The Middle Ages. (G) Two terms, 3 hours each term. Breen.
 Hst 431. The Renaissance. (G) Fall term, 3 hours. Breen.
 Hst 432. The Reformation. (G) Winter term, 3 hours. Breen.
 Hst 433. The Age of Louis XIV. (G) Spring term, 3 hours. Breen.
 Hst 441. French Revolution and Napoleon. (G) Fall term, 3 hours. Breen.
 Hst 445. Post-War Europe. (G) Spring term, 3 hours. Noble.
 Hst 456. Recent Germany. (G) Fall term, 3 hours. Noble.
 Hst 457. Recent Russia. (G) Winter term, 3 hours. Noble.
 Hst 460, 461, 462. History of Civilization in the United States. (G) Three terms, 2 hours each term. Sheldon.
 Hst 467. Tudor England. (G) Fall term, 3 hours. Fish.
 Hst 468. The British Overseas Empire. (G) Winter term, 3 hours. Fish.
 Hst 469. Twentieth-Century England. (G) Spring term, 3 hours. Fish.
 Hst 471, 472. Leading Americans. (G) Fall and winter terms, 3 hours each term. R. C. Clark.

- Hst 473, 474. American Foreign Relations. (G) Fall and winter terms, 3 hours each term. R. C. Clark.
 Hst 475, 476. History of the West. (G) Two terms, 3 hours each term. D. E. Clark.
 Hst 478. History of Political Parties in the United States. (G) Fall term, 3 hours. D. E. Clark.
 Hst 479. Forces and Influences in American History. (G) Winter term, 3 hours. D. E. Clark.
 Hst 480. Colonial North America. (G) Fall term, 3 hours. Ganoe.
 Hst 481. Colonial South America. (G) Winter term, 3 hours. Ganoe.
 Hst 482. Hispanic America since 1815. (G) Spring term, 3 hours. Ganoe.
 Hst 483, 484, 485. Constitutional History of the United States. (G) Three terms, 3 hours each term. Ganoe.
 Hst 491, 492, 493. History of the Far East in Modern Times. (G) Three terms, 3 hours each term. Noble.
 Hst 495, 496, 497. History of Civilizations of China and Japan. (G) Three terms, 2 hours each term. Noble.
 Hst 500. Historical Method. Three terms, 1 hour each term. Ganoe.
 Hst 501. History Research. Terms and hours to be arranged.
 Hst 503. History Thesis. Terms and hours to be arranged.
 Hst 505. Reading and Conference. Terms and hours to be arranged.
 Hst 541, 542, 543. Seminar in Modern European History. Three terms, 2 hours each term. Noble.
 Hst 551, 552. Liberalism and Modern Education. Fall and winter terms, 3 hours each term. Sheldon.
 Hst 565, 566, 567. Seminar in Nineteenth-Century England. Three terms, 2 hours each term. Fish.
 Hst 570, 571. Seminar in United States Economic History. Winter and spring terms, 2 hours each term. Ganoe.
 Hst 575. Seminar in United States Foreign Relations. Spring term, 3 hours. R. C. Clark.
 Hst 577, 578. Seminar in Oregon History. Three terms, 2 hours each term. R. C. Clark.
 Hst 591, 592, 593. Seminar in Far-Eastern History. Three terms, 2 hours each term. Noble.

Philosophy

See COLLEGE OF ARTS AND LETTERS, page 29.

Political Science

PROFESSORS: JAMES DUFF BARNETT (department head); WALDO SCHUMACHER

At least 12 term hours of lower-division and 12 term hours of upper-division courses in political science are required preparation for a graduate major in this field. All graduate students in political science must take Political Theory (PS 416).

- PS 414. **Political Parties and Election Problems.** (G) Fall term, 4 hours. Barnett.
- PS 415. **City Government.** (G) Winter term, 4 hours. Barnett.
- PS 416. **Political Theory.** (G) Spring term, 4 hours. Barnett.
- PS 417, 418, 419. **International Organization and World Politics.** (G) Three terms, 4 hours each term. Schumacher.
- PS 420. **Democracy.** (G) Fall term, 4 hours. Schumacher.
- PS 421. **Public Opinion.** (G) Winter term, 4 hours. Schumacher.
- PS 422. **Political Problems.** (G) Spring term, 4 hours. Schumacher.
- PS 427. **Foreign Service of the United States.** (G) Fall term, 4 hours. Prerequisite: PS 201, 202, 203 or equivalent. Schumacher.
- PS 441. **Constitutional Law.** (G) Fall term, 4 hours. Barnett.
- PS 442. **International Law.** (G) Winter term, 4 hours. Barnett.
- PS 443. **Law of Municipal Corporations.** (G) Spring term, 3 hours. Open to students credited with at least one course in law. Barnett.
- PS 501. **Research in Political Science.** Terms and hours to be arranged. Schumacher.
- PS 503. **Graduate Thesis.** Terms and hours to be arranged. Schumacher.
- PS 507. **Seminar in Political Science.** Terms and hours to be arranged. Schumacher.

Psychology

PROFESSORS: HOWARD RICE TAYLOR (department head), ARTHUR RUSSELL MOORE;
ASSOCIATE PROFESSORS: LESTER F. BECK, HAROLD RANDOLPH CROSLAND;
ASSISTANT PROFESSOR: ROBERT W. LEEPER

Graduate students in psychology must satisfy the general requirement of the Graduate Division that "preparation for the graduate major must be an undergraduate major in the same subject, or a fair equivalent." However, courses in physiology, philosophy, education, sociology, and anthropology which are closely related in method and subject matter to the field of psychology may be offered to satisfy part of this requirement.

The candidate for the master's degree is expected to show, in the preliminary and final examinations, a reasonable command of the following fields: (1) general experimental literature; (2) interpretation of statistical results; (3) major systematic points of view. The candidate will also be examined on the material studied in the several graduate courses he has taken.

The candidate for the doctorate is expected to show a comprehensive knowledge of at least four main divisions of the subject, in addition to those listed above. The divisions from which the candidate may choose his special fields are: genetic, abnormal, social, comparative, clinical, applied, and physiological psychology.

With the approval of the department head and the dean of the Graduate Division, courses in physiology, philosophy, education, sociology, and anthropology may be included in a program of work in psychology provided they are closely integrated with the student's special interests and plans for advanced study.

- Psy 411. **Genetic Psychology.** (G) Fall term, 3 hours. Beck.
- Psy 412. **Adolescence, Maturity, and Senescence.** (G) Winter term, 3 hours. This course is intended to follow Psy 411.
- Psy 413. **Abnormal Psychology.** (G) Spring term, 3 hours. Beck.
- Psy 415, 416, 417. **Advanced Laboratory.** (G) Three terms, 2 hours each term. Beck.
- Psy 421, 422, 423. **Systematic Psychology.** (G) Three terms, 2 hours each term. Leeper.
- Psy 431, 432. **Clinical Methods in Psychology.** (G) Winter and spring terms, 3 hours each term. Beck and Leeper.
- Psy 434, 435, 436. **Physiological Foundations of Human Behavior.** (G) Three terms, 4 hours each term. Prerequisite: General Chemistry and General Zoology, or consent of instructor. Moore.
- Psy 451, 452, 453. **Advanced Experimental Psychology.** (G) Three terms, 3 hours each term. Crosland.
- Psy 462. **Nature of Intelligence.** (G) Spring term, 3 hours. Taylor.
- Psy 463. **Employment Psychology.** (G) Winter term, 3 hours. Taylor.
- Psy 464. **Comparative Psychology.** (G) Fall term, 2 hours. Leeper.
- Psy 465. **Motivation.** (G) Winter term, 2 hours. Leeper.
- Psy 466. **The Learning Process.** (G) Spring term, 2 hours. Leeper.
- Psy 501. **Research.** Terms and hours to be arranged.
- Psy 502. **Research Symposium.** Three terms, 1 or more hours each term.
- Psy 503. **Thesis.** Terms and hours to be arranged. Taylor, Moore, Crosland, Beck, and Leeper.
- Psy 507. **Seminar (Biopsychology).** Three terms, 1 to 3 hours each term. Moore.
- Psy 511. **Psychology of Attention and Perception.** Fall term, 2 hours. Crosland.
- Psy 512. **Psychology of Memory and the Image.** Winter term, 2 hours. Crosland.
- Psy 516. **Seminar in Abnormal Psychology.** Fall term, 2 hours. Beck.
- Psy 518. **Association.** Spring term, 2 hours. Crosland.
- Psy 525, 526, 527. **Seminar in Experimental Psychology.** Three terms, 2 hours each term. Crosland.
- Psy 530. **Seminar in Genetic Psychology.** Spring term, 2 hours. Beck.

Sociology

PROFESSORS: PHILIP ARCHIBALD PARSONS (department head), SAMUEL HAIG JAMESON,
ELON HOWARD MOORE, KARL WILLIAM ONTHANK

A graduate major in sociology may select his courses in accordance with his special interest. All graduate students must, however, enroll for the graduate seminar. Graduate students are also expected to arrange their study programs to compensate for any deficiencies in undergraduate training.

Candidates for the doctorate are examined on four main divisions of the field of sociology: social origins, social theory, social methodology, problems of contemporary society.

- Soc 411, 412, 413. **Advanced Personnel Practice.** (G) Three terms, 2 hours each term. Prerequisite: consent of instructor; Soc 204, 205; elementary psychology. Onthank.
- Soc 431. **Community Organization.** (G) Winter term, 3 hours.
- Soc 435. **Population and Population Theory.** (G) Fall term, 3 hours. Moore.
- Soc 437. **Immigration and Race Relations.** (G) Spring term, 3 hours. Jameson.
- Soc 438. **Human Ecology.** (G) Fall term, 3 hours.
- Soc 442. **Theories of Social Disorganization.** (G) Spring term, 3 hours. Prerequisite: Soc 206 or Psy 418. Jameson.
- Soc 447, 448. **Advanced Social Analysis.** (G) Fall and winter terms, 2 hours each term. Moore.
- Soc 451, 452. **History of Social Thought.** (G) Fall and winter terms, 3 hours each term. Jameson.
- Soc 453. **Contemporary Sociological Theories.** (G) Spring term, 3 hours. Moore.
- Soc 454. **Principles of Sociology.** (G) Fall term, 3 hours. Jameson.
- Soc 464, 465. **Contemporary Problems Involving Social Institutions.** (G) Winter and spring terms, 3 hours each term. Parsons.
- Soc 501. **Social Research.** Terms and hours to be arranged.
- Soc 503. **Thesis.** Terms and hours to be arranged.
- Soc 507. **Seminar in Sociology.** Any term, 3 hours.

School of Architecture and Allied Arts

PROFESSORS: ELLIS FULLER LAWRENCE (dean), PERCY PAGET ADAMS, ANDREW McDUFFIE
VINCENT, WALTER ROSS BAUMES WILLCOX; ASSOCIATE PROFESSORS: VICTORIA
AVAKIAN, OLIVER LAURENCE BARRETT, EYLER BROWN, FREDERICK
ALEXANDER CUTHBERT, BROWNELL FRASIER, MAUDE IRVINE
KERNS, NOWLAND BRITTIN ZANE

Architectural Design and Interior Design

- AA 411, 412, 413. **Advanced Domestic Architecture.** (G) Three terms, 1 to 4 hours each term. Lawrence.
- AA 420, 421, 422. **Construction VI.** (G) Three terms, 2 hours each term. Adams.
- AA 443, 444, 445. **Architectural History V.** (G) Three terms, 1 to 2 hours each term. Lawrence.
- AA 497. **Upper-Division Architectural Design.** (G) Any term, 1 to 10 hours.
- AA 498. **Upper-Division Interior Design.** (G) Any term, 1 to 10 hours. Frasier.

Landscape Architecture

- LA 454. **Advanced City Planning.** (G) Any term, 1 to 6 hours. Cuthbert.
- LA 490. **Upper-Division Landscape Design.** (G) Any term, 1 to 10 hours. Prerequisite: LA 290. Cuthbert.
- LA 501. **Research or Other Supervised Work.** Terms and hours to be arranged.
- LA 503. **Graduate Thesis.** Terms and hours to be arranged.
- LA 505. **Graduate Assigned Reading.** Terms and hours to be arranged.
- LA 507. **Graduate Seminar.** Terms and hours to be arranged.

Drawing and Painting

- AA 490. **Upper-Division Painting.** (G) Any term, 2 to 5 hours.
- AA 491. **Upper-Division Drawing.** (G) Any term, 1 to 5 hours.
- AA 492. **Upper-Division Composition.** (G) Any term, 2 to 5 hours.

Sculpture

- AA 493. **Upper-Division Sculpture.** (G) Any term, 2 to 6 hours. Barrett.
- AA 494. **Upper-Division Sculpture Composition.** (G) Any term, 2 to 4 hours. Barrett.

General Art

- AA 446, 447, 448. **Civilization and Art Epochs.** (G) Three terms, 2 hours each term. Zane.
- AA 495. **Upper-Division Decorative Design.** (G) Any term, 2 to 3 hours. Zane.
- AA 496. **Upper-Division Applied Design.** (G) Any term, 1 to 6 hours. Avakian.

Special Studies

- AA 501. **Research or Other Supervised Work.** Terms and hours to be arranged.
- AA 503. **Thesis.** Terms and hours to be arranged.
- AA 505. **Assigned Reading.** Terms and hours to be arranged.
- AA 507. **Seminar.** Terms and hours to be arranged.

School of Business Administration

PROFESSORS: VICTOR PIERPONT MORRIS (dean), JESSE HICKMAN BOND, ORIN KAY BURRELL,
NEWEL HOWLAND COMISH, CARDINAL LYLE KELLY, ALFRED LEWIS LOMAX,
W. F. GOODWIN THACHER; ASSOCIATE PROFESSORS: DANIEL DUDLEY
GAGE, JR., ARTHUR BENJAMIN STILLMAN; ASSISTANT
PROFESSOR: WILBUR POWELSON RIDDLESBARGER

A total of 45 term hours of undergraduate work in business administration and economics is required as preparation for a graduate major in

business administration. Less formal preparation may, however, be accepted if the student shows evidence of ability to do the work. A fundamental undergraduate course in accounting is required of all graduate majors in the school.

Graduates of accredited colleges and universities who wish to take advanced work in business administration, but who do not wish to become candidates for graduate degrees, may register in the Graduate Division and be extended the privileges of classification as graduate students. Such students may take courses which suit their individual needs, without regard to requirements for students working toward a degree.

- BA 407. **Seminar in Business Problems.** (G) Terms and hours to be arranged. Prerequisite: BA 221, 222, 223. Morris and staff.
- BA 412. **Manufacturing.** (G) Fall term, 4 hours. Prerequisite: BA 221, 222, 223. Bond.
- BA 413. **Production Management.** (G) Fall or winter term, 4 hours. Prerequisite: BA 221, 222, 223. Bond.
- BA 414. **Personnel Management.** (G) Winter or spring term, 4 hours. Prerequisite: BA 221, 222, 223. Bond.
- BA 415. **Regional Planning for Commerce and Industry.** (G) Winter term, 2 hours.
- BA 416, 417, 418. **Business Law.** (G) Three terms, 4 hours each term. Riddlesbarger.
- BA 425. **Real-Estate Fundamentals.** (G) One term, 3 hours. Gage.
- BA 426. **Real-Estate Practice.** One term, 3 hours. Prerequisite: BA 425. Gage.
- BA 432. **Business Statistics.** (G) One term, 3 hours. Prerequisite: Mth 337 or Mth 325, 326; or equivalent. Gage.
- BA 433. **Advanced Business Statistics.** (G) One term, 3 hours. Prerequisite: BA 432 or equivalent. Gage.
- BA 434. **Problems in Distribution.** (G) Fall or winter term, 4 hours. Prerequisite: BA 223. Comish.
- BA 435. **Sales Management.** (G) Winter or spring term, 4 hours. Prerequisite: BA 223. Comish.
- BA 436. **Merchandising.** (G) Fall or spring term, 4 hours. Prerequisite: BA 223. Comish.
- BA 437. **Credit Management.** (G) Fall term, 3 hours. Prerequisite: BA 221, 222, 223; Eng 217. Gage.
- BA 439. **General Advertising.** (G) One term, 3 hours. Thacher.
- BA 440. **Advertising Production.** (G) Spring term, 3 hours. Thacher.
- BA 442. **Principles of Salesmanship.** (G) Spring term, 3 hours. Prerequisite: BA 223.
- BA 443. **Space Selling.** (G) Winter term, 3 hours. Prerequisite: BA 439.
- BA 444. **Advertising Problems.** (G) Fall term, 3 hours. Thacher.
- BA 445. **Retail Advertising.** (G) Winter term, 3 hours. Thacher.

- BA 450. **Traffic Management.** (G) Fall term, 3 hours. Prerequisite: BA 221, 222, 223. Lomax.
- BA 453. **Business Policy.** (G) Winter term, 3 hours. Open to students who have had Principles of Economics and who have had or are taking Business Law. Prerequisite: BA 221, 222, 223.
- BA 459. **Finance Management.** (G) Winter or spring term, 5 hours. Prerequisite: BA 221, 222, 223. Burrell.
- BA 460. **Bank Management.** (G) Winter term, 3 hours. Prerequisite: BA 222; Ec 413. Gage.
- BA 463. **Investments.** (G) Fall term, 3 hours. Prerequisite: BA 221, 222, 223. Burrell.
- BA 464. **Investments.** (G) Winter term, 3 hours. Prerequisite: BA 463. Burrell.
- BA 465. **Investment Analysis.** (G) Spring term, 3 hours. Prerequisite: BA 463, 464. Burrell.
- BA 467. **Public-Utility Management.** (G) Spring term, 3 hours. Prerequisite: BA 221, 222, 223.
- BA 471, 472, 473. **Foreign-Trade Technique.** (G) Three terms, 3 hours each term. Prerequisite: BA 221, 222, 223. Lomax.
- BA 474. **Foreign Exchange and International Finance.** (G) Spring term, 3 hours.
- BA 475, 476, 477. **Foreign-Trade Marketing.** (G) Three terms, 3 hours each term. Prerequisite: BA 471, 472, 473. Lomax.
- BA 479. **Casualty Insurance.** (G) Fall term, 3 hours. Kelly.
- BA 480. **Life Insurance.** (G) Winter term, 3 hours. Kelly.
- BA 481. **Property Insurance.** (G) Spring term, 3 hours. Bond.
- BA 483, 484, 485. **Accounting Theory and Practice.** (G) Three terms, 3 hours each term. Prerequisite: BA 221, 222, 223. Burrell.
- BA 487, 488. **Auditing.** (G) Winter and spring terms, 3 hours each term. Prerequisite: BA 490. Kelly.
- BA 490, 491, 492. **Advanced Accounting Theory and Practice.** (G) Three terms, 3 hours each term. Prerequisite: BA 483, 484, 485, and prescribed work in business administration. Kelly.
- BA 493. **Income-Tax Procedure.** (G) Fall term, 3 hours. Prerequisite: BA 483, 484, 485 or equivalent. Kelly.
- BA 494, 495. **Advanced Cost Accounting.** (G) Winter and spring terms, 3 hours each term. Prerequisite: BA 111, 112, 113. Stillman.
- BA 496, 497, 498. **Accounting Systems.** (G) Three terms, 3 hours each term.
- BA 501. **Advanced Commercial Research.** Terms and hours to be arranged.
- BA 503. **Graduate Thesis.** Terms and hours to be arranged.
- BA 507. **Graduate Seminar.** Terms and hours to be arranged.
- BA 520, 521, 522. **C. P. A. Problems.** Three terms, 5 hours each term. Prerequisite: adequate preparation, to be determined by the instructor. Kelly.

School of Education

PROFESSORS: JAMES RALPH JEWELL (dean), NELSON LOUIS BOSSING, CARL LEO HUFFAKER, FREDERICK MAURICE HUNTER, RALPH WALDO LEIGHTON, FREEMAN GLENN MACOMBER, HENRY DAVIDSON SHELDON, FRED LEA STETSON; **ASSISTANT PROFESSORS:** HAROLD WRIGHT BERNARD, ELIZABETH BRIGGS MONTGOMERY

The upper-division courses required for certification in Oregon, or their equivalent, are prerequisite to graduate work toward a master's degree in education. Graduate students preparing for classroom teaching must have satisfied also the Oregon subject-matter norm requirements, or their equivalent.

All graduate majors in education must take Education Seminar (Ed 507), Modern Educational Principles and Problems (Ed 511), and Research Procedures and Thesis Writing (Ed 512).

A candidate for the master's degree takes the preliminary examination not less than one-half year before completing work for the degree. The student is examined in the basic fields of: secondary (or elementary) education, educational psychology, and principles of teaching.

A candidate for the doctor's degree takes preliminary examinations after the completion of 60 term hours of graduate work and (normally) before work on the thesis is begun. These examinations cover the field of education in which the candidate is specializing and in which he will write his thesis, and one or two other fields. Not less than 40 term hours of work in education (exclusive of thesis) and not less than 40 term hours in a field or fields other than education are required for the doctor's degree.

The thesis for the Doctor of Education degree may be: (1) a mature and expert evaluation of existing knowledge, involving the application of such knowledge to some of the major problems in education; or (2) an original contribution through research in education.

- Ed 409. **Psycho-Educational Clinic.** (G) Terms and hours to be arranged. 9 hours maximum credit. Prerequisite: Ed 461-466 inclusive, except by special permission. Montgomery.
- Ed 440. **History of Education.** (G) Fall term, 3 hours. Prerequisite: Ed 311, 312, 313. Jewell.
- Ed 441. **Comparative Education.** (G) Winter term, 3 hours. Prerequisite: Ed 311, 312, 313. Jewell.
- Ed 460. **Psychology of Childhood.** (G) Fall term, 2 hours. Prerequisite: two terms of elementary psychology. Montgomery.
- Ed 461. **Adolescence: Growth and Development of the Individual.** (G) Winter term, 3 hours. Prerequisite: two terms of elementary psychology; Ed 312. Jewell.
- Ed 462, 463. **Psychology of Exceptional Children.** (G) Winter and spring terms, 2 hours each term. Prerequisite: Ed 312. Montgomery.
- Ed 464. **The Reading Process.** (G) One term, 2 hours. Prerequisite: Ed 311, 312, 313. Montgomery.
- Ed 465, 466. **Diagnostic and Remedial Techniques.** (G) Two terms, 2 hours each term. Prerequisite: Ed 464. Montgomery.
- Ed 467. **Hygiene of the Child.** (G) One term, 3 hours. Bernard.
- Ed 468. **Hygiene of Learning.** (G) One term, 3 hours. Prerequisite: Ed 311, 312, 313 or equivalent. Bernard.

- Ed 470. **The Junior High School.** (G) Fall term, 3 hours. Prerequisite: Ed 311, 312, 313. Stetson.
- Ed 471. **School Activity Program.** (G) Spring term, 3 hours. Prerequisite: Ed 311, 312, 313. Stetson.
- Ed 472. **Basic Course in School Administration: Organization.** (G) Fall term, 4 hours. Prerequisite: Ed 311, 312, 313 or equivalent. Huffaker and Stetson.
- Ed 473. **Basic Course in School Administration: Administration.** (G) Winter term, 4 hours. Prerequisite: Ed 311, 312, 313 or equivalent. Huffaker and Stetson.
- Ed 474. **Basic Course in School Administration: Supervision.** (G) Spring term, 4 hours. Prerequisite: Ed 311, 312, 313 or equivalent. Huffaker and Stetson.
- Ed 475. **Measurement in Secondary Education.** (G) Any term, 3 hours. Prerequisite: Ed 311, 312, 313, or equivalent. Huffaker.
- Ed 480. **Pupil Personnel Work.** (G) Winter term, 3 hours. Stetson.
- Ed 486. **Curriculum Construction.** Spring term, 3 hours. Prerequisite: Ed 311, 312, 313 or equivalent. Macomber.
- Ed 487. **Curriculum Laboratory.** (G) Term and hours to be arranged, 9 hours maximum credit.
- Ed 488. **Units of Work.** (G) One term, 3 hours. Prerequisite: Ed 312, 313, 415 or equivalent.
- Ed 490. **Character Education.** (G) Fall and winter terms, 3 hours each term. Prerequisite: Ed 311, 312, 313 or equivalent.
- Ed 491. **Group Thinking.** (G) Winter term, 3 hours.
- Ed 492. **Social Education.** (G) Winter term, 3 hours. Prerequisite: Ed 311, 312, 313 or equivalent. Stetson.
- Ed 497. **Adult Education.** (G) One term, 3 hours.
- Ed 501. **Educational Research.** Terms and hours to be arranged. Prerequisite: graduate standing in education.
- Ed 503. **Thesis.** Terms and hours to be arranged.
- Ed 505. **Reading and Conference.** Terms and hours to be arranged.
- Ed 507. **Education Seminar.** Any term, 1 or 2 hours. Bernard.
- Ed 511. **Modern Educational Principles and Problems.** Fall term, 3 hours. Huffaker.
- Ed 512. **Research Procedures and Thesis Writing.** Fall term, 3 hours. Stetson.
- Ed 515, 516, 517. **Statistical and Experimental Methods of Education.** Three terms, 3 hours each term. Prerequisite: graduate standing in education. Huffaker.
- Ed 543. **History of American Education.** Spring term, 3 hours. Prerequisite: Ed 311, 312, 313 or equivalent. Sheldon.
- Ed 544, 545. **History of American Education: Seminar.** Winter and spring terms, 3 hours each term. Prerequisite: Ed 543. Sheldon.
- Ed 546. **Philosophy of Education.** Spring term, 3 hours. Prerequisite: Ed 311, 312, 313. Jewell.

- Ed 548, 549. **Liberalism and Modern Education.** Fall and winter terms, 3 hours each term. Sheldon.
- Ed 554, 555. **Organization and Administration of Higher Education.** Fall and winter terms, 2 or 3 hours each term. Stetson.
- Ed 556. **College and University Teaching.** Spring term, 2 or 3 hours. Stetson.
- Ed 561, 562, 563. **Advanced Educational Psychology.** Three terms, 2 hours each term. Prerequisite: graduate standing in education. Bernard.
- Ed 564, 565, 566. **Mental Tests.** Three terms, 2 hours each term. Prerequisite: Ed 312. Montgomery.
- Ed 570. **Intellectual Problems of Education.** Fall term, 3 hours.
- Ed 571, 572. **Affective Phases of Education.** Winter and spring terms, 3 hours each term. Leighton.

School of Journalism

PROFESSORS: ERIC WILLIAM ALLEN (dean), W. F. GOODWIN THACHER, GEORGE STANLEY TURNBULL; ASSOCIATE PROFESSOR: ROBERT CARR HALL; ASSISTANT PROFESSOR: ARNE RAE

- J 411, 412, 413. **Newspaper Problems and Shop Management.** (G) Three terms, 3 hours each term.
- J 420. **Law of the Press.** (G) One term, 3 hours. Hulten.
- J 421, 422, 423. **Articles and Features.** (G) Three terms, 2 hours each term. Allen.
- J 439. **General Advertising.** (G) One term, 3 hours. Thacher.
- J 440. **Advertising Production.** (G) Spring term, 3 hours. Thacher.
- J 443. **Space Selling.** (G) Winter term, 3 hours. Thacher.
- J 444. **Advertising Problems.** (G) Fall term, 3 hours. Thacher.
- J 445. **Retail Advertising.** (G) Winter term, 3 hours. Thacher.
- J 481, 482, 483. **Investigative Methods in Editing.** (G) Three terms, 5 hours each term. Allen.
- J 503. **Thesis.** Three terms, hours to be arranged. Allen.
- J 505. **Reading and Conference.** Any term, hours to be arranged.
- J 507. **Seminar.** Three terms, hours to be arranged. Allen.

School of Music

PROFESSORS: JOHN JACOB LANDBURY (dean), JOHN STARK EVANS, GEORGE HOPKINS, JANE THACHER, REX UNDERWOOD; ASSISTANT PROFESSOR: LOUIS ARTAU

- Mus 407. **Seminar.** (G) Terms and hours to be arranged.
- Mus 411. **Choral Arranging.** (G) One term, 2 hours. Prerequisite: Mus 311, 312, 313; Mus 314, 315, 316. Evans.
- Mus 412. **Song Writing.** (G) One term, 2 hours. Prerequisite: Mus 311, 312, 313; Mus 314, 315, 316. Evans.
- Mus 413. **Improvisation.** (G) One term, 1 hour. Prerequisite: Mus 311, 312, 313; Mus 314, 315, 316. Evans.

- Mus 414. **Strict Counterpoint.** (G) Fall term, 2 hours. Prerequisite: Mus 111, 112, 113; Mus 211, 212, 213. Hopkins.
- Mus 415. **Harmonic Counterpoint.** (G) Winter term, 2 hours. Prerequisite: Mus 414. Hopkins.
- Mus 416. **Harmonic Counterpoint.** (G) Spring term, 2 hours. Prerequisite: Mus 415. Hopkins.
- Mus 419. **Formal Analysis.** (G) Fall term, 3 hours. Prerequisite: Mus 111, 112, 113; Mus 211, 212, 213. Landsbury.
- Mus 420. **Harmonical Analysis.** (G) Winter term, 3 hours. Prerequisite: Mus 419. Landsbury.
- Mus 421. **Philosophy of Music.** (G) Spring term, 2 hours. Prerequisite: Mus 420. Landsbury.
- Mus 422, 423, 424. **History of Music.** (G) Three terms, 2 hours each term. Artau.
- Mus 425, 426, 427. **Music of the Eighteenth Century.** (G) Three terms, 2 or 3 hours each term. Prerequisite: Mus 422, 423, 424; or equivalent working knowledge of musical history and analysis of musical forms. Artau.
- Mus 428, 429, 430. **Proseminar in Musicology.** (G) Three terms, hours to be arranged. Prerequisite: Mus 422, 423, 424; or equivalent working knowledge of musical history and analysis of musical forms. Artau.
- Mus 501. **Research.** Terms and hours to be arranged.
- Mus 503. **Thesis.** Terms and hours to be arranged.
- Mus 505. **Reading and Conference.** Terms and hours to be arranged.
- Mus 507. **Seminar.** Terms and hours to be arranged.
- Mus 511, 512, 513. **Advanced Free Composition.** Three terms, 2 to 3 hours each term. Open to students showing marked creative ability, who have had adequate preparation. Hopkins.
- Mus 517, 518, 519. **Multiple Counterpoint, Canon, and Fugue.** Three terms, 2 hours each term. Landsbury and Hopkins.
- Mus 590. **Practical Artistry.** Any term, 2 to 3 hours each term. Landsbury, Thacher, Evans, Hopkins, Underwood, and Artau.

School of Physical Education

PROFESSORS: RALPH WALDO LEIGHTON (dean), FLORENCE DELIA ALDEN, ERNESTO RAY KNOLLIN, HARRIET WATERBURY THOMSON, PAUL RUDOLPH WASHKE; ASSOCIATE PROFESSOR: JANET GRANT WOODRUFF

To be eligible to work toward a master's degree in physical education, a student must hold a bachelor's degree with a major in physical education from an accredited college or university; or must satisfy the following minimum requirements:

- (1) A year sequence or equivalent in biological science.
- (2) A year sequence or equivalent in sociology.
- (3) Physical education: (a) recreation, equivalent of a 2-hour course; (b) basic course in physical education, 6 hours; (c) basic courses in health, 6 hours to enter as a graduate student, 12 hours before graduate work may be taken in health; (d) average skill in two team sports, four individual and dual sports, and (for women) two of the following—folk dancing, clogging, modern dance.
- (4) Evidence from undergraduate record of potential ability to succeed in work at the graduate level.

- Z 451, 452, 453. **Anatomy and Physiology of Exercise.** (g) Three terms, 3 hours each term. Prerequisite: two years of biological science. Alderman.
- PE 481, 482, 483. **Theory and Practice of the Dance.** (G) Three terms, 2 hours each term. Prerequisite: one year of elementary dancing. Paasikivi.
- PE 501. **Research in Health and Physical Education.** Terms and hours to be arranged.
- PE 503. **Thesis.** Terms and hours to be arranged.
- PE 505. **Reading and Conference.** Terms and hours to be arranged.
- PE 506. **Problems in Health and Physical Education.** Any term, hours to be arranged.
- PE 507. **Seminar.** Three terms, hours to be arranged.
- PE 521, 522, 523. **Corrective Physical Education Studies.** Three terms, hours to be arranged. Thomson.
- PE 531, 532, 533. **Physiotherapy Studies.** Three terms, hours to be arranged. Thomson.
- PE 543. **Biological Backgrounds for Physical Education.** Spring term, 3 hours. Alderman.
- PE 551, 552, 553. **Administration of Physical Education.** Three terms, 3 hours each term. Knollin.
- PE 571, 572. **Affective Phases of Education.** Winter and spring terms, 3 hours each term. Leighton.

Service Departments

Science

MATHEMATICS

ASSOCIATE PROFESSOR: ANDREW FLEMING MOURSUND

- Mth 448. **Advanced Statistical Method.** (g) One term, 3 hours. Prerequisite: Mth 325, 326 or Mth 337; one term of applied statistics or 3 hours of college mathematics beyond college algebra. Moursund.

ZOOLOGY

ASSISTANT PROFESSOR: ALTON LOVELL ALDERMAN

- Z 451, 452, 453. **Anatomy and Physiology of Exercise.** (g) Three terms, 3 hours each term. Prerequisite: two years of biological science. Alderman.

Oregon State College

Graduate Faculty

- GEORGE WILCOX PEAVY, M.S.F., Sc.D., LL.D., President; Dean of the School of Forestry; Professor of Forestry.
- OLOF LARSELL, Ph.D., Sc.D., Dean and Director of the Graduate Division, State System; Professor of Anatomy.
- GEORGE REBEC, Ph.D., Dean Emeritus of the Graduate Division, State System.
- WILLIBALD WENIGER, Ph.D., Assistant Dean of the Graduate Division; Professor of Physics; Head of Department.
-
- ORVILLE DANIEL ADAMS, M.S., Associate Professor of Vocational Education.
- ARTHUR LEMUEL ALBERT, M.S., Professor of Communication Engineering.
- IRA SHIMMIN ALLISON, Ph.D., Professor of Geology.
- DELMAR ISAAC ALLMAN, Dr.P.H., Associate Professor of Hygiene.
- WILLIAM BALLANTYNE ANDERSON, Ph.D., Professor of Physics.
- WINFRED MCKENZIE ATWOOD, Ph.D., Professor of Plant Physiology.
- GLENN ALMER BAKKUM, Ph.D., Professor of Sociology; Chairman of Department.
- FRANK LEWELLYN BALLARD, B.S., Vice Director, Federal Cooperative Extension Service; State County Agent Leader; Professor of Extension Methods.
- BERNICE BAND, M.A., Assistant Professor of Clothing, Textiles, and Related Arts.
- JAMES HERVEY BATCHELLER, B.S. (Min. E.), Professor of Mining Engineering; Head of Department.
- ERNEST LESLIE BEALS, M.S., Associate Professor of Pharmacy.
- EDWARD BENJAMIN BEATY, M.A., Professor of Mathematics.
- GEORGIA CHAPMAN BIBEE, B.S., Assistant Professor of Institution Economics.
- FLORENCE BLAZIER, Ph.D., Professor of Home Economics Education; Head of Department.
- WALTER BENO BOLLEN, Ph.D., Associate Professor of Bacteriology; Associate Bacteriologist, Agricultural Experiment Station.
- ARTHUR GEORGE BRISTOW BOUQUET, M.S., Professor of Vegetable Crops; Horticulturist (Vegetable Crops), Agricultural Experiment Station.
- WILLIAM PINGRY BOYNTON, Ph.D., Sc.D., Professor Emeritus of Physics.
- JAMES JOSEPH BRADY, Ph.D., Assistant Professor of Physics.
- VERA HASKELL BRANDON, Ph.D., Professor of Child Development.
- PHILIP MARTIN BRANDT, A.M., Professor of Dairy Husbandry; In Charge, Division of Animal Industries; Head of Department of Dairy Husbandry; Acting Head of Department of Animal Husbandry; Dairy Husbandman, Agricultural Experiment Station.

LEWIS CLEMENCE BRITT, Ph.D., Assistant Professor of Pharmaceutical Analysis; In Charge of Department; Director, Drug Laboratory of the Oregon State Board of Pharmacy.

WALTER SHELDON BROWN, M.S., D.Sc., Professor of Horticulture; Head of Department; Horticulturist, Agricultural Experiment Station.

WILLIAM ELMER CALDWELL, Ph.D., Assistant Professor of Chemistry.

WILLARD JOSEPH CHAMBERLIN, Ph.D., Associate Professor of Entomology.

OTHNIEL ROBERT CHAMBERS, Ph.D., Professor of Psychology, In Charge of Department.

BERT EINAR CHRISTENSEN, Ph.D., Assistant Professor of Chemistry.

RILEY JENKINS CLINTON, Ed.D., Professor of Education.

RALPH ORVAL COLEMAN, M.A., Professor of Physical Education; Director of Intramural Sports; Head Coach of Baseball.

GODFREY VERNON COPSON, M.S., Professor of Bacteriology; Head of Department; Bacteriologist in Charge, Agricultural Experiment Station.

HUBERT ELMER COSBY, Professor of Poultry Husbandry; Head of Department; Poultry Husbandman, Agricultural Experiment Station.

GEORGE BRYAN COX, B.S., Professor of Industrial Arts; Professor of Industrial Education; Head of Department; Director of Engineering Shops.

ROBERT HORNIMAN DANN, M.A., Associate Professor of Economics and Sociology.

RICHARD HAROLD DEARBORN, A.B., E.E., Dean of the School of Engineering and Industrial Arts; Director of the Engineering Experiment Station.

DANIEL BARTON DELOACH, Ph.D., Associate Professor of Business Administration.

ROLAND EUGENE DIMICK, M.S., Professor of Fish and Game Management; Head of Department; Wildlife Conservationist in Charge, Agricultural Experiment Station.

WILLIAM HENRY DREESEN, Ph.D., Professor of Economics; Agricultural Economist, Agricultural Experiment Station.

ULYSSES GRANT DUBACH, Ph.D., Dean of Men; Professor of Political Science; Head of Department.

WILLIS PIERRE DURUZ, Ph.D., Professor of Pomology; Horticulturist (Plant Propagation), Agricultural Experiment Station.

ROBERT MURRAY EVENDEN, M.S., Assistant Professor of Wood Products.

FREDERICK ALTON EVEREST, E.E., Instructor in Electrical Engineering.

NATHAN FASTEN, Ph.D., Professor of Zoology; Head of Department.

JAMES WILLIAM FERGUSON, Ph.D., Instructor in Chemistry.

MARGARET LOUISE FINCKE, Ph.D., Associate Professor of Foods and Nutrition.

HAROLD ETHAN FINNELL, M.S., Assistant Professor of Farm Crops.

ROBERT ESTES FORE, Ph.D., Assistant Professor of Farm Crops; Assistant Agronomist, Agricultural Experiment Station.

RUTH MORRIS FOREST, M.S., Assistant State Supervisor in Vocational Home Economics.

FRANK LLOYD FRANCE, M.S., Instructor in Industrial Education.

MINNIE DEMOTTE FRICK, B.S., Associate Professor of Secretarial Science.

LEO FRIEDMAN, Ph.D., Assistant Professor of Chemistry.

ALMA CATHERINE FRITCHOFF, M.A., Professor of Clothing, Textiles, and Related Arts; Head of Department.

JOHN FULTON, M.S., Professor of Chemistry; Head of Department.

JOHN CLIFTON GARMAN, Ph.M., Assistant Professor of Physics.

EVRA ALTA GARRISON, M.A., Assistant Professor of Foods and Nutrition.

HEBER HOWARD GIBSON, A.M., Professor of Agricultural Education; Head of Department.

EARL C. GILBERT, Ph.D., Professor of Physical Chemistry.

FRANCOIS ARCHIBALD GILFILLAN, Ph.D., Acting Dean of the School of Science; Professor of Chemistry.

HELEN MARGARET GILKEY, Ph.D., Associate Professor of Botany; Curator of Herbarium.

GEORGE WALTER GLEESON, Ch.E., Professor of Chemical Engineering; Head of Department.

BURDETTE GLENN, M.S., Professor of Highway Engineering.

KENNETH LLEWELLYN GORDON, Ph.D., Assistant Professor of Zoology.

SAMUEL HERMAN GRAF, M.E., M.S., Professor of Mechanical Engineering; Head of Department; Director of Engineering Research.

JAMES RINALDO GRIFFITH, C.E., Professor of Structural Engineering.

FRANCIS FRIDAY GRIFFITHS, Ph.D., Assistant Professor of Fish and Game Management; Assistant Economic Biologist, Agricultural Experiment Station.

JOSEPH ROY HAAG, Ph.D., Chemist (Animal Nutrition), Agricultural Experiment Station.

RUTH GILL HAMMOND, M.A., Assistant Professor of Household Administration.

ORVILLE GOODMAN HARROLD, JR., Ph.D., Instructor in Mathematics.

HENRY HARTMAN, M.S., Professor of Horticulture; Horticulturist (Pomology), Agricultural Experiment Station.

CHARLES PAUL HEGARTY, Ph.D., Instructor in Bacteriology.

DONALD DAVID HILL, Ph.D., Associate Professor of Farm Crops; Associate Agronomist, Agricultural Experiment Station.

EDWIN THOMAS HODGE, Ph.D., Professor of Economic Geology.

PAUL GERHARD HOEL, Ph.D., Instructor in Mathematics.

FREDERICK MAURICE HUNTER, Ed.D., LL.D., Professor of Education.

MELISSA HUNTER, M.A., Professor of Institution Economics; Head of Department; Director of Dormitories.

GEORGE ROBERT HYSLOP, B.S., Professor of Farm Crops; Head of Department; In Charge, Division of Plant Industries; Agronomist, Agricultural Experiment Station.

JAMES RALPH JEWELL, Ph.D., LL.D., Dean of the School of Education; Professor of Education.

RAY GEORGE JOHNSON, B.S., Professor of Animal Husbandry; Animal Husbandman, Agricultural Experiment Station.

IDWAL RALPH JONES, Ph.D., Associate Professor of Dairy Husbandry; Associate Dairy Husbandman, Agricultural Experiment Station.
 J. SHIRLEY JONES, M.S.A., Professor of Agricultural Chemistry; Chemist in Charge, Agricultural Experiment Station.
 RICHARD SENG KEARNS, M.S., Assistant Professor of Forestry.
 WILLIAM JOHN KIRKHAM, Ph.D., Assistant Professor of Mathematics.
 FRANK LESTER KNOWLTON, M.S., Professor of Poultry Husbandry; Poultry Husbandman, Agricultural Experiment Station.
 AGNES KOLSHORN, M.A., Assistant Professor of Foods and Nutrition.
 GUSTAV WESLEY KUHLMAN, M.S., Associate Professor of Farm Management; Associate Economist (Farm Management), Agricultural Experiment Station.
 CLAIR VAN NORMAN LANGTON, Dr.P.H., D.Ed., Director of the Division of Physical Education; Professor of Physical Education; Professor of Hygiene; Technical Counselor in Sanitary Engineering, Engineering Experiment Station.
 HERBERT REYNOLDS LASLETT, Ph.D., Professor of Educational Psychology.
 WILLIAM EVANS LAWRENCE, B.S., Associate Professor of Plant Ecology.
 EDWARD GIBSON LOCKE, Ph.D., Assistant Professor of Chemical Engineering.
 EDWARD HIRAM MCALISTER, A.M., Sc.D., Professor Emeritus of Mathematics.
 FRED ORVILLE McMILLAN, M.S., Professor of Electrical Engineering; Head of Department.
 FRANK PADEN MCWEORTER, Ph.D., Plant Pathologist, Agricultural Experiment Station.
 FRANK ABBOTT MACRUDER, Ph.D., Professor of Political Science.
 WALLACE HOPE MARTIN, M.E., M.S., Professor of Heat Engineering.
 EARL GEORGE MASON, M.F., Professor of Forestry; Assistant Dean of the School of Forestry.
 JOSEPH PARKE MEHLIG, Ph.D., Associate Professor of Analytical Chemistry.
 FRED MERRYFIELD, M.S., Associate Professor of Civil Engineering.
 EDWIN DAVID MEYER, B.S., Assistant Professor of Industrial Arts.
 AVA BERTHA MILAM, M.A., Dean of the School of Home Economics.
 WILLIAM EDMUND MILNE, Ph.D., Professor of Mathematics; Head of Department.
 CHARLES ARTHUR MOCKMORE, C.E., Ph.D., Professor of Civil Engineering; Head of Department.
 FRED BUCKNER MORGAN, M.S., Assistant Professor of Physics.
 HENRIETTA MORRIS, Sc.D., Associate Professor of Hygiene.
 VICTOR PIERPONT MORRIS, Ph.D., Dean in Charge of Secretarial Science.
 DON CARLOS MOTE, Ph.D., Professor of Entomology; Head of Department; Entomologist in Charge, Agricultural Experiment Station.
 DWIGHT CURTIS MUMFORD, M.S., Professor of Farm Management; Head of Department.
 RAYMOND GEORGE NEBLUNG, Dr.P.H., Associate Professor of Hygiene.
 MILTON NELS NELSON, Ph.D., Professor of Economics; Head of Department; Professor of Agricultural Economics.

ORAN MILTON NELSON, M.S., Professor of Animal Husbandry; Animal Husbandman, Agricultural Experiment Station.
 HARRY IRA NETTLETON, M.F., Assistant Professor of Forestry.
 BEN HODGE NICHOLS, M.S., Assistant Professor of Electrical Engineering.
 JAMES CAREY OTHUS, M.E., M.S., Associate Professor of Mechanical Engineering.
 CHARLES ELMER OWENS, Ph.D., Professor of Botany and Plant Pathology; Head of Department; Plant Pathologist, Agricultural Experiment Station.
 EARL LEROY PACKARD, Ph.D., Dean and Director of General Research; Director of the Institute of Marine Biology; Professor of Paleontology; Head of Department of Geology.
 FRANK WINTHROP PARR, Ph.D., Professor of Secondary Education; Director of Supervised Teaching.
 HENRY RICHARD PATTERSON, JR., B.S., Professor of Logging Engineering; Head of Department.
 WILLIAM HOWARD PAUL, M.S., Assistant Professor of Mechanical Engineering.
 CHARLES S. PEASE, Ph.D., Assistant Professor of Organic Chemistry.
 MARK CLYDE PHILLIPS, B.M.E., Professor of Mechanical Engineering; Superintendent of Physical Plant.
 ERMINE LAWRENCE POTTER, M.S., Professor of Agricultural Economics; In Charge, Division of Agricultural Economics; Agricultural Economist, Agricultural Experiment Station.
 WILBUR LOUIS POWERS, Ph.D., Professor of Soils; Head of Department; Soil Scientist in Charge, Agricultural Experiment Station.
 SARA WATT PRENTISS, M.A., Professor of Child Development and Parent Education; Head of Department of Household Administration.
 EDITH RHYNE, M.A., Associate Professor of Clothing, Textiles, and Related Arts.
 VIVIAN MAE ROBERTS, M.S., Instructor in Foods and Nutrition.
 FRANK LESLIE ROBINSON, M.Acct., Associate Professor of Accounting.
 BENJAMIN WILLIAM RODENWOLD, M.S., Assistant Professor of Animal Husbandry.
 DONALD PHILIP ROGERS, Ph.D., Instructor in Botany.
 BENJAMIN FRANKLIN RUFFNER, Aero.E., M.S., Associate Professor of Aeronautical Engineering.
 CHARLES VLADIS RUZEK, M.S., Professor of Soil Fertility; Soil Scientist (Fertility), Agricultural Experiment Station.
 AZALEA LINFIELD SAGER, M.A., Professor and State Leader of Home Economics Extension.
 CARL WALTER SALSER, Ed.M., Professor of Education; Head of Department; Head of Placement; Assistant Dean of School of Education.
 ETHEL IDA SANBORN, Ph.D., Associate Professor of Botany.
 HENRY SCHEFFÉ, Ph.D., Instructor in Mathematics.
 WILLIAM ALFRED SCHOENFELD, M.B.A., Dean of the School of Agriculture; Director of the Agricultural Experiment Station; Director of Federal Cooperative Extension.
 HENRY DESBOROUGH SCUDDER, B.S., Professor of Farm Management.

HERMAN AUSTIN SCULLEN, Ph.D., Associate Professor of Entomology.
 EVA M. SEEN, Ed.D., Professor of Physical Education for Women; Head of Department.
 JAMES NIVEN SHAW, B.S., D.V.M., Professor of Veterinary Medicine; Head of Department; Veterinarian in Charge, Agricultural Experiment Station.
 JOSEPH ELLSWORTH SIMMONS, M.S., Professor of Bacteriology; Bacteriologist, Agricultural Experiment Station.
 HERBERT REEVES SINNARD, M.S., R.A., Associate Professor of Agricultural Engineering.
 FRANK HERSCHEL SMITH, Ph.D., Instructor in Botany.
 ELEANOR MAY SPIKE, M.S., Associate Professor of Household Administration; Director of Home Management Houses.
 THURMAN JAMES STARKER, B.S., Professor of Forestry; Head of Department.
 EUGENE CARL STARR, B.S., E.E., Associate Professor of Electrical Engineering.
 ROSCOE ELMO STEPHENSON, Ph.D., Professor of Soils; Soil Scientist, Agricultural Experiment Station.
 GERTRUDE STRICKLAND, B.S., Assistant Professor of Clothing, Textiles, and Related Arts.
 ERNST THEODORE STUHR, M.S., Associate Professor of Pharmacology and Pharmacognosy; In Charge of Department.
 BERTHA WHILLOCK STUTZ, M.S., Associate Professor of Secretarial Science.
 ALFRED TAYLOR, Ph.D., Instructor in Zoology.
 CHARLES EDWIN THOMAS, M.M.E., Associate Professor of Engineering Materials.
 EDWARD FRITCHOFF TORGERSON, B.S., Associate Professor of Soils; Associate Soil Scientist (Soil Survey), Agricultural Experiment Station.
 HERBERT TOWNSEND VANCE, M.S., Professor of Secretarial Science; Head of Department.
 GLENN VOORHIES, M.S., Instructor in Wood Products.
 GLEN CHASE WARE, M.S., Instructor in Chemistry.
 ERNEST WILLIAM WARRINGTON, M.A., Professor of Philosophy and Religion; Head of Department.
 IVAN FREDERIC WATERMAN, C.E., Associate Professor of Civil Engineering.
 BAYARD O. WHEELER, M.A., Assistant Professor of Business Administration and Economics.
 ERNEST HERMAN WIRGAND, B.S.A., Professor of Food Industries; Head of Department; Horticulturist (Food Industries), Agricultural Experiment Station.
 ELIZABETH CECELIA WILEY, A.M., Associate Professor of Clothing, Textiles, and Related Arts.
 WILLIAM DONALD WILKINSON, Ph.D., Assistant Professor of Geology.
 GEORGE ALFRED WILLIAMS, A.M., Assistant Professor of Mathematics.
 JESSAMINE CHAPMAN WILLIAMS, M.A., Professor of Foods and Nutrition; Head of Department.
 ROGER JOHN WILLIAMS, Ph.D., D.Sc., Professor of Chemistry.
 MAUD MATHES WILSON, A.M., Home Economist, Agricultural Experiment Station; Professor in Charge of Home Economics Research.

GUSTAV HANS WILSTER, Ph.D., Professor of Dairy Manufacturing.
 LAWRENCE FISHER WOOSTER, M.S., Professor of Applied Electricity.
 ROSALIND WULZEN, Ph.D., Assistant Professor of Zoology.
 EDWIN ARTHUR YUNKER, Ph.M., Assistant Professor of Physics.
 SANFORD MYRON ZELLER, Ph.D., Plant Pathologist, Agricultural Experiment Station.
 ADOLPH ZIEFLE, M.S., Ph.D., Dean of the School of Pharmacy; Professor of Pharmacy.

Associates, Fellows, and Assistants 1938-39

HERSCHEL K. MITCHELL, M.S., Research Associate, Pantothenic Acid Research.
 HARRY HERSCHEL WEINSTOCK, JR., Ph.D., Research Associate, Pantothenic Acid Research.
 DUIS DONALD BOLINGER, M.S., Graduate Fellow in Physics.
 ROBERT EAKIN, B.S., Standard Brands Fellow in Chemistry.
 ALBERT HUGHES, M.S., Standard Oil Research Fellow.
 B. SAM TAYLOR, B.S., McDonald Fellow in Forestry.
 ALFRED THOMAS ALLEN, B.S., Graduate Assistant in Industrial Arts.
 DWIGHT I. BAKER, B.S., Graduate Assistant in Mechanical Engineering.
 BERTRAM RODNEY BERTRAMSON, M.S., Graduate Assistant in Soils.
 A. BURR BLACK, B.S., Graduate Assistant in Entomology.
 DANIEL BONNELL, B.S., Graduate Assistant in Entomology.
 ROY C. BRADY, B.S., Graduate Assistant in Forestry.
 CLARA CHAPMAN, B.S., Graduate Assistant in Botany.
 VERNON HENDRUM CHELDELIN, B.A., Graduate Assistant in Chemistry.
 ROBERT CORRUCINI, B.A., Research Assistant in Chemistry.
 JOHN EMERSON DAVIS, B.S., Graduate Assistant in Entomology.
 JOHN P. DRUMMOND, B.S., Graduate Assistant in Forestry.
 DONALD LINDSEY ERICKSON, A.B., Research Assistant in Chemistry.
 JOHN FRED FACER, B.S., Research Assistant in Chemistry.
 CYRIL FELDSTEIN, B.A., Graduate Assistant in Physics.
 JOHN KEPLINGER FISHER, B.A., Graduate Assistant in Mathematics.
 WILLIAM GRAF, B.S., Graduate Assistant in Science Survey (Biology).
 LEROY HANSEN, B.S., Graduate Assistant in Farm Crops.
 JESSIE AUDRY HARPER, B.S., Graduate Assistant in Institution Economics.
 EDWARD W. HARVEY, M.S., Graduate Assistant in Food Industries.
 CARL LOUGH HAWKES, B.S., Graduate Assistant in Forestry.
 ELMON HOWARD, B.S., Graduate Assistant in Forestry.
 ELLIOTT C. HUTTON, B.S., Graduate Assistant in Industrial Arts.
 CAROLYN ETMO JOHNSON, B.S., Graduate Assistant in Chemistry.

HERBERT R. JOHNSTON, B.S., Graduate Assistant in Electrical Engineering.
 HOWARD WENDELL KRUSE, B.S., Graduate Assistant in Chemistry.
 JAMES C. LEWIS, B.Ch., Graduate Assistant in Soils.
 FRANKLIN LONGWOOD, B.S., Graduate Assistant in Forestry.
 CHUNG KWAI LUI, M.S., Graduate Assistant in Physics.
 NELLIE LYLE, B.S., Graduate Assistant in Household Administration.
 WILLIAM MYRON MCKEE, B.S., Graduate Assistant in Chemistry.
 KENNETH N. MCLEOD, M.S., Graduate Assistant in Chemistry.
 ALVA MICKELSON, B.S., Graduate Assistant in Farm Crops.
 CAL GRAHAM MONROE, Graduate Assistant in Farm Crops.
 HARRY MOSHER, B.A., Graduate Assistant in Chemistry.
 RICHARD MOTE, B.S., Graduate Assistant in Science Survey (Physics).
 THOMAS F. O'NEILL, B.S., Graduate and Research Assistant in Geology.
 ELIOT ROOT PECK, B.S., Graduate Assistant in Mechanical Engineering.
 DERROL PENNINGTON, B.S., Research Assistant, Pantothenic Acid Research.
 ERNEST FAY PRATT, B.S., Research Assistant, Pantothenic Acid Research.
 JAMES F. PRICE, A.B., Graduate Assistant in Mathematics.
 GEORGE SHAMBROOK, B.S., Graduate Assistant in Farm Crops.
 JOSEPH BERNARD SPULNIK, M.S., Graduate Assistant in Chemistry.
 SUE ROBBINS STANBERY, B.S., Research Assistant, Pantothenic Acid Research.
 JOHN B. STARK, M.S., Graduate Assistant in Chemistry.
 WILLIAM M. STONE, B.A., Graduate Assistant in Mathematics.
 MALCOLM W. STRANSKY, B.S., Graduate Assistant in Mechanical Engineering.
 CAROLYN GASKINS SULLIVAN, B.S., Graduate Assistant in Household Administration.
 MARIGENE TICHBORNE, B.S., Research Assistant in Foods and Nutrition.
 JOHN DUNCAN TODD, B.S., Graduate Assistant in Physics.
 EUGENE TOWER, B.S., Research Graduate Assistant in Forestry Research.
 LLOYD VAN BLARICOM, B.S., Graduate Assistant in Chemistry.
 OWEN B. WEEKS, B.S., Graduate Assistant in Bacteriology.
 FRED H. YOUNG, B.A., Graduate Assistant in Mathematics.
 HOWARD YOUSE, A.B., Graduate Assistant in Botany.

Graduate Work at the State College

GRADUATE work at the State College is carried on under the auspices of the Graduate Division and under the direction of the Graduate Council of the State College and the dean of the Graduate Division. Correspondence relating to graduate work in fields allocated to the State College should be addressed to the Graduate Division, Oregon State College, Corvallis, Oregon, or to the department concerned.

The State College offers graduate work leading to advanced degrees in: the biological sciences, the physical sciences (including mathematics), agriculture, education, engineering, forestry, home economics, and pharmacy.

The following advanced degrees are granted by the State College through the Graduate Division:

Doctor of Philosophy: Agriculture, Botany, Chemistry, Entomology, Geology, Mathematics, Physics, Zoology.

Doctor of Education: Education.

Master of Arts (Departmental): Bacteriology, Botany, Chemistry, Education, Entomology, Geology, Home Economics, Mathematics, Physics, Zoology.

Master of Arts (General Studies).

Master of Science: Agriculture, Bacteriology, Botany, Chemistry, Education, Engineering, Entomology, Forestry, Geology, Home Economics, Mathematics, Pharmacy, Physics, Zoology.

Master of Education: Education.

Master of Forestry: Logging Engineering, Technical Forestry, Wood Products.

Engineer: Chemical Engineering (Ch.E.); Civil Engineering (C.E.); Electrical Engineering (E.E.); Forestry, including Logging Engineering, Technical Forestry, and Wood Products (F.E.); Mechanical Engineering (M.E.).

A major may frequently be selected from among several fields within a department or may involve two or more related departments.

Graduate students who are not preparing for a medical career may (with the approval of the Medical School) pursue at the University of Oregon Medical School certain phases of graduate work in the following fields: Anatomy, Bacteriology, Biochemistry, Pathology, Pharmacology, and Physiology. These students, on completion of the requirements, receive degrees (M.A., M.S., Ph.D.) from the State College.

Library

THE State College Library occupies a central location in the East Quadrangle. The various reading rooms provide seating accommodation for 570 readers. The main collection of the Library includes the scientific and technical books provided for the instructional and research activities of the different schools and of the experiment stations. The State College is a designated depository for the publications of the United States government and the Carnegie Institution of Washington, and for official publications of the state of Oregon. The Library contains a practically complete file of the publications of the United States Department of Agriculture and of the agricultural experiment stations of the various states, as well as agricultural literature from foreign governmental and educational institutions. A considerable collection of duplicates is available for lending to students and faculty. The Library owns a collection of more than 2,000 documents received as a gift from the late U. S. Senator Dolph.

The book collection numbered 162,199 volumes on March 1, 1939. Exclusive of the United States government documents, 1,438 periodicals are currently received, the titles of which include the best scientific and technical magazines, selected on recommendation of the specialists on the campus. Back files of these journals and science proceedings form the background for research and advanced study. Newspapers received by subscription, gift, or exchange total 117. In ad-

dition, through unified library administration, all the books (totaling 530,876 on March 1, 1939) in the libraries of the several state institutions of higher education are made available to the students and faculties of all the institutions.

The Library's notable collection of books on the history of horticulture includes rare books of the sixteenth, seventeenth, eighteenth, and nineteenth centuries. The home economics collection is unusually complete, especially in the fields of textiles, costume design, and nutrition. A good foundation has been laid for research collections in the various fields of science; approximately one-third of the books in the Library are devoted to science and closely related fields. The program for future development of the Library calls for emphasis on all fields of science in which graduate work is offered at the State College. The engineering and industrial arts collection includes nearly 13,000 carefully selected volumes.

Over a period of years the Library has built up a map collection of some 4,080 items, which is particularly well adapted to the needs of work in geology, soils, and engineering. During the past year the Library has made this collection more accessible by housing it in a room near the reference department. A picture collection of 29,660 pictures has been especially selected to meet the needs of classes in art, household arts, and advertising. There is an excellent file of herdbooks. A well-balanced collection of dictionaries, encyclopedias, yearbooks, and other standard reference books is found on open shelves in the main reading room. Departmental libraries are at present limited to the few books needed for laboratory purposes.

The union author catalog of all books in the libraries of the six institutions of the State System of Higher Education is located on the first floor of the Library, and is open to the public.

Service. The Library is open daily except Sundays from 7:45 a.m. to 10:00 p.m. It is closed during official convocations and lyceum programs, and on legal holidays. The reference room, periodical reading room, and McDonald room are open Sundays from 2:00 to 5:00 p.m., for reading purposes only.

The circulation desk is in the main reading room. Books may be taken for home use by any one connected with the State College. Students may keep books for two weeks, with privilege of renewal. Officers may borrow for more extended periods if their work requires it. Graduate students and seniors are admitted to the stacks by permission of the Librarian, on recommendation of their dean or major professor. Tables for these readers are placed on all stack floors. Similarly, a limited number of tables are available for faculty study, in a room adjoining the third floor of the stacks.

A system of interlibrary loans is maintained with other libraries on the Coast, especially within the state. The Library is also able to borrow for advanced students from the United States Department of Agriculture Library and other governmental bureaus, and from certain specialized libraries in the East.

Living Expenses

THE average cost of a year at Oregon State College has been estimated at approximately \$480.00, including fees, books, supplies, board and room, and incidentals. The actual cost will, of course, vary considerably. Some students with ample means spend more; but many students find it possible to attend the State College at a lower cost.

The cost of board and room in the State College halls of residence is \$30.00 a calendar month when the student shares a double room with another, and \$33.50 a calendar month when the student occupies a single room.

Board and room can be obtained in private homes or boarding houses at rates varying from \$22.00 to \$35.00 a month.

The State College assists self-supporting students in finding jobs. Men students seeking jobs should file applications in Shepard Hall; women students should file applications in the office of the Dean of Women in Commerce Hall.

For several years the National Youth Administration has furnished part-time employment for many students on campus projects. Students wishing NYA work may obtain information from the registrar.

General Studies

WILLIBALD WENIGER (assistant dean of Graduate Division; in charge of program)

A student pursuing a program of study for the Master of Arts (General Studies) degree may register for thesis, reading and conference, seminar, or research in General Science or in whatever department best suits his program.

School of Science

ACTING DEAN: FRANCOIS ARCHIBALD GILFILLAN

General Science

ASSISTANT PROFESSOR: WILLIAM DONALD WILKINSON; INSTRUCTOR:
FRANK HERSCHEL SMITH

- GS 411, 412, 413. **History of Science.** (G) Three terms, 2 hours each term.
Prerequisite: eighteen hours of upper-division science, or equivalent.
- GS 421, 422, 423. **Classics of Science.** (G) Three terms, 2 hours each term.
Prerequisite: eighteen hours of upper-division science, or equivalent.
- GS 505. **Reading and Conference.** Terms and hours to be arranged.
- GS 507. **Seminar.** Terms and hours to be arranged.

Bacteriology

PROFESSORS: GODFREY VERNON COPSON (department head), CLAIR VAN NORMAN LANGTON,
JOSEPH ELLSWORTH SIMMONS; ASSOCIATE PROFESSORS: DELMER ISAAC ALLMAN,
WALTER BENO BOLLEN, HENRIETTA MORRIS; INSTRUCTOR: CHARLES
PAUL HEGARTY

The department offers advanced theoretical and technical preparation for research and teaching in the fields of bacterial physiology and soil bacteriology. Facilities are available for the study of microbotanical problems in sanitation, hygiene, and public health, and in connection with storage, fermentation, and other phases of the food industry. The State College does not at present offer the doctorate in bacteriology. A graduate student may, however, take considerable work beyond the master's degree, as part of a program for a doctor's degree in a related field.

- Bac 411. **Dairy Bacteriology.** (g) Fall term, 3 hours. Prerequisite: Bac 204.
- Bac 412. **Dairy Bacteriology.** (G) Winter term, 3 hours. Prerequisite: Bac 411.
- Bac 421. **Soil Bacteriology.** (g) Fall term, 4 hours. Prerequisite: Bac 204 or Ch 330.
- Bac 422. **Soil Bacteriology.** (G) Winter term, 3 hours. Prerequisite: Bac 421.
- Bac 432, 433. **Bacteriological Problems.** (g) Winter and spring terms, 5 hours each term. Prerequisite: Bac 321, 324, or equivalent.
- Bac 451, 452. **Physiology of Bacteria.** (g) Winter and spring terms, 3 hours each term. Prerequisite: Bac 206 or equivalent; organic chemistry.
- Bac 454, 455. **Physiology of Bacteria Laboratory.** (g) Winter and spring terms, 2 hours each term.
- Bac 501. **Research.** Terms and hours to be arranged.
- Bac 503. **Thesis.** Terms and hours to be arranged.
- Bac 505. **Reading and Conference.** Terms and hours to be arranged.
- Bac 507. **Seminar.** Terms and hours to be arranged.
- Bac 551, 552. **Advanced Bacterial Physiology.** Fall and winter terms, 3 hours each term. Prerequisite: Bac 451, 452 or equivalent; organic and physical chemistry.
- Bac 553. **Biochemistry of the Bacteria.** Spring term, 3 hours. Prerequisite: Bac 551, 552; organic analysis.

Botany

PROFESSORS: CHARLES ELMER OWENS (department head), WINFRED MCKENZIE ATWOOD, SANFORD MYRON ZELLER, FRANK PADEN MCWHORTER; ASSOCIATE PROFESSORS: WILLIAM EVANS LAWRENCE, HELEN MARGARET GILKEY, ETHEL IDA SANBORN; INSTRUCTORS: DONALD PHILIP ROGERS, FRANK HERSHEL SMITH

Phases of the field of botany in which graduate study and research toward the master's and the doctor's degree are offered include: plant pathology, physiology, mycology, morphology, ecology, taxonomy, anatomy, and cytology.

- Bot 411, 412, 413. **Comparative Morphology.** (G) Three terms, 3 hours each term. Prerequisite: Bot 311, 312, or equivalent. Lawrence, Sanborn.
- Bot 414. **Advanced Range and Pasture Ecology.** (g) Winter term, 3 hours. Prerequisite: Bot 314, 341. Lawrence.
- Bot 421, 422, 423. **Advanced Systematic Botany.** (G) Three terms, 3 hours each term. Prerequisite: Bot 313. Gilkey.
- Bot 431, 432, 433. **Advanced Plant Physiology.** (G) Three terms, 3 hours each term. Prerequisite: Bot 331 and organic chemistry. Atwood.
- Bot 441, 442, 443. **Advanced Plant Ecology.** (G) Three terms, 3 hours each term. Prerequisite: Bot 341 or equivalent. Lawrence.
- Bot 451. **Plant Pathological Technique.** (g) Fall term, 3 hours. Prerequisite: Bot 351 or equivalent. Rogers.
- Bot 452. **Field and Truck Crop Diseases.** (G) Winter term, 3 hours. Prerequisite: Bot 351 or equivalent. Owens.
- Bot 453. **Fruit Diseases.** (G) Spring term, 3 hours. Prerequisite: Bot 351 or equivalent. Owens.

- Bot 461, 462, 463. **Mycology.** (G) Three terms, 3 hours each term. Prerequisite: Bot 311 or equivalent. Rogers.
- Bot 471. **Plant Anatomy.** (G) Fall term, 3 hours. Smith.
- Bot 472. **Microtechnique.** (g) Winter term, 3 hours. Smith.
- Bot 473. **Plant Cytology.** (G) Spring term, 3 hours. Prerequisite: Bot 472 or equivalent. Smith.
- Bot 501. **Research.** Terms and hours to be arranged.
- Bot 503. **Thesis.** Terms and hours to be arranged.
- Bot 505. **Reading and Conference.** Terms and hours to be arranged.
- Bot 507. **Seminar.** Terms and hours to be arranged.
- Bot 541. **Plant Formations.** Fall term, 3 hours. Prerequisite: Bot 341, 441. Lawrence.
- Bot 542. **Structural and Experimental Ecology.** Winter term, 3 hours. Prerequisite: Bot 313, 331, 341, 442, 472. Lawrence.
- Bot 543. **Field Ecological Methods.** Spring term, 3 hours. Prerequisite: Bot 341, 443. Lawrence.
- Bot 573. **Cyto-genetics.** Winter term, 3 hours. Prerequisite: Bot 473 or Z 537 and one of the following: AI 315, FC 417, or Z 315. Smith.

Chemistry

PROFESSORS: JOHN FULTON (department head), EARL C. GILBERT, J. SHIRLEY JONES, JOSEPH ROY HAAG, ROGER JOHN WILLIAMS, FRANCOIS ARCHIBALD GILFILLAN; ASSOCIATE PROFESSOR: JOSEPH PARKE MEHLIG; ASSISTANT PROFESSORS: WILLIAM ELMER CALDWELL, LEO FRIEDMAN, CHARLES S. PEASE, BERT EINAR CHRISTENSEN; INSTRUCTORS: GLEN CHASE WARE; CLARENCE WEST

The preliminary examination for an advanced degree in chemistry covers four principal fields: general, analytical, organic, and physical. In addition to graduate courses in these fields, the department offers advanced work in various special subjects, including: pulp and paper making; examination of boiler waters, minerals, fuels, gases, and limestones; microtechnique; biochemical methods; potentiometric titrations; electrochemical methods; glass designs; examination of soils, manures, and insecticides; chemical microscopy, nephelometry, colorimetry, and spectroscopy. All graduate students in chemistry are expected to attend the chemistry seminar.

- Ch 411, 412, 413. **Advanced Inorganic Chemistry.** (g) Three terms, 2 hours each term. Prerequisite: a minimum of two years' work in chemistry.
- Ch 414, 415. **Inorganic Preparations.** (g) Terms and hours to be arranged. Prerequisite: Ch 231, 232, or their equivalent.
- Ch 418. **History of Chemistry.** (G) One term, 2 hours. Prerequisite: Ch 206 or equivalent.
- Ch 420, 421, 422. **Advanced Quantitative Analysis.** (g) Three terms, 3 hours each term. Prerequisite: Ch 231, 232, 233.
- Ch 423. **Microchemical Analysis.** (g) Fall term, 3 hours. Prerequisite: Ch 233.
- Ch 424. **Advanced Laboratory Methods.** (G) Winter term, 3 hours. Prerequisite: Ch 233, Ph 311.
- Ch 425. **Chemical Microscopy.** (g) Spring term, 3 hours. Prerequisite: Ch 231.

- Ch 426. **Gas, Oil, and Fuel Analysis.** (g) One term, 3 hours. Prerequisite: Ch 233.
- Ch 427, 428. **Physico-Chemical Methods of Analysis.** (G) Two terms, 3 hours each term. Prerequisite: Ch 231, 232, 233, Ch 440, 441, 442.
- Ch 430, 431, 432. **Organic Chemistry.** (g) Three terms, 4 hours each term. Prerequisite: two years of college chemistry.
- Ch 433. **Organic Combustion Analysis.** (G) One term, 3 hours. Prerequisite: Ch 227, 232, 432.
- Ch 434, 435, 436. **Organic Preparations.** (G) Three terms, 2 hours each term. Prerequisite: Ch 227 or Ch 432.
- Ch 437, 438. **Organic Chemistry.** (G) Fall and winter terms, 2 hours each term.
- Ch 440, 441, 442. **Physical Chemistry.** (g) Three terms, 4 hours each term. Prerequisite: knowledge of analytical chemistry.
- Ch 443. **Chemical Literature.** (G) Fall term, 1 hour.
- Ch 445, 446. **Chemical Thermodynamics.** (G) Two terms, 3 hours each term.
- Ch 447. **Electrochemistry.** (G) One term, 3 hours.
- Ch 448, 449. **Colloidal Chemistry.** (G) Two terms, 3 hours each term. Prerequisite: two years of college chemistry.
- Ch 450, 451. **Biochemistry.** (G) Fall and winter terms, 3 to 5 hours each term. Prerequisite: organic chemistry.
- Ch 452. **Animal Physiological Chemistry.** (G) Spring term, 3 to 5 hours. Prerequisite: Ch 451.
- Ch 453. **Plant Physiological Chemistry.** (G) Spring term, 5 hours. Prerequisite: Ch 451.
- Ch 454, 455, 456. **Agricultural Biochemical Methods.** (G) Three terms, hours to be arranged. Prerequisite: suitable preparation in quantitative analysis and organic chemistry.
- Ch 460, 461, 462. **Pulp and Paper Chemistry.** (G) Three terms, 3 hours each term. Prerequisite: two years of college chemistry.
- Ch 465. **Applied Electrochemistry.** (G) Fall term, 3 hours. Prerequisite: Ch 442.
- Ch 466. **Advanced Electrochemistry and Electrometallurgy.** (G) Term and hours to be arranged. Prerequisite: Ch 442.
- Ch 467, 468. **Colloidal Chemistry Laboratory.** (G) Two terms, 1 hour each term.
- Ch 501. **Research.** Terms and hours to be arranged.
- Ch 503. **Thesis.** Terms and hours to be arranged.
- Ch 505. **Reading and Conference.** Terms and hours to be arranged.
- Ch 507. **Seminar.** Any term, 1 hour each term. A reading knowledge of German and French is expected.
- Ch 511, 512, 513. **Advanced General Chemistry.** Three terms, 2 hours each term.
- Ch 520, 521, 522. **Advanced Analytical Chemistry.** Three terms, 3 hours each term. Prerequisite: Ch 231, 232, 233.
- Ch 530, 531, 532. **Advanced Organic Chemistry.** Three terms, 2 hours each term. Prerequisite: Ch 227, 432.

- Ch 533, 534, 535. **Advanced Organic Chemistry.** Three terms, 2 hours each term. Prerequisite: Ch 432 or equivalent.
- Ch 536. **Organic Analysis.** One term, 2 hours. Prerequisite: Ch 227, 232, 432.
- Ch 537. **Organic Analysis.** One term, 3 hours. Prerequisite: Ch 227, 232, 432.
- Ch 540, 541, 542. **Advanced Physical Chemistry.** Three terms, 2 hours each term. Prerequisite: Ch 442.
- Ch 543, 544, 545. **Advanced Physical Chemistry.** Three terms, 2 hours each term. Prerequisite: Ch 442.

Entomology

PROFESSOR: DON CARLOS MOTE (department head); ASSOCIATE PROFESSORS: WILLARD JOSEPH CHAMBERLIN, HERMAN AUSTIN SCULLEN

Graduate work leading to the master's and the doctor's degree is offered in the following fields: economic entomology, forest entomology, bee culture, aquatic entomology, morphology, taxonomy, insect physiology, and ecology. The department has a collection of more than 80,000 insects, of which the major portion are Oregon and Pacific Coast forms. Library facilities for research in this field are excellent. Through the close relation of the department with the Agricultural Experiment Station, graduate students have excellent opportunities for the study of economic insects.

- Ent 411, 412, 413. **Economic Entomology.** (g) Three terms, 3 hours each term. Prerequisite: Ent 203 or equivalent.
- Ent 415. **Principles of Insect Control.** (G) Fall or, spring term, 3 hours. Prerequisite: Ent 211 or equivalent.
- Ent 423. **Advanced Forest Entomology.** (g) Any term, 4 hours. Prerequisite: Ent 323 or equivalent.
- Ent 451, 452, 453. **Insect Taxonomy.** (g) Three terms, 3 hours each term. Prerequisite: Ent 203 or equivalent.
- Ent 471, 472, 473. **Advanced Entomology.** (G) Three terms, 3 hours each term. Prerequisite: Ent 203; general physiology, or equivalent, desirable.
- Ent 501. **Research.** Terms and hours to be arranged.
- Ent 503. **Thesis.** Terms and hours to be arranged.
- Ent 505. **Reading and Conference.** Terms and hours to be arranged.
- Ent 507. **Seminar.** Terms and hours to be arranged.

Geology

PROFESSORS: EARL LEROY PACKARD (department head), EDWIN THOMAS HODGE, IRA SHIMMIN ALLISON; ASSOCIATE PROFESSOR: ETHEL IDA SANBORN; ASSISTANT PROFESSOR: WILLIAM DONALD WILKINSON

Oregon and the Pacific Northwest offer many interesting problems for graduate study in mineralogy, volcanisms, igneous rocks, engineering geology, paleontology, and paleobotany. The department has facilities for research projects in regional physiography, structural geology, areal mapping, sedimentation, and sedimentary analysis.

- G 412, 413, 414. **Earth Materials.** (G) Three terms, 4 hours each term. Prerequisite: G 312, 313, 314. Hodge.

- G 424. **Advanced Paleontology.** (G) Term and hours to be arranged. Prerequisite: G 340, 341. Packard.
- G 431. **Geologic History of North America.** (G) One term, 4 hours. Prerequisite: stratigraphy. Allison.
- G 432. **Geologic History of the Pacific Coast.** (G) One term, 4 hours. Prerequisite: stratigraphy and paleontology. Allison.
- G 442. **Paleobotany.** Spring term, 4 hours.
- G 501. **Research.** Terms and hours to be arranged.
- G 503. **Thesis.** Terms and hours to be arranged.
- G 505. **Reading and Conference.** Terms and hours to be arranged.
- G 507. **Seminar.** Terms and hours to be arranged.
- G 512, 513, 514. **Microscopy.** Three terms, hours to be arranged. Hodge.
- G 520. **Advanced Economic Geology.** Terms and hours to be arranged. Hodge.
- G 580. **Graduate Field Geology.** Terms and hours to be arranged.

Mathematics

PROFESSORS: WILLIAM EDMUND MILNE (department head), EDWARD BENJAMIN BEATTY; PROFESSOR EMERITUS: EDWARD HIRAM MCALISTER; ASSISTANT PROFESSORS: GEORGE ALFRED WILLIAMS, WILLIAM JOHN KIRKHAM; INSTRUCTORS: ORVILLE GOODMAN HARROLD, PAUL GERHARD HOEL, HENRY SCHEFFE

The normal prerequisite for students seeking a master's degree in mathematics is 24 upper-division hours in this field.

Graduate students may do specialized work in the following major divisions of mathematics: analysis (real variables, complex variables, topology, differential and integral equations); algebra (matrices, determinants, higher algebra); geometry (non-Euclidean, projective, differential, etc.); applied mathematics (approximations, statistical method, mechanics, elasticity).

- Mth 411. **Theory of Equations and Determinants.** (G) One term, 3 hours. Prerequisite: Unified Mathematics or equivalent.
- Mth 412. **Higher Algebra.** (G) One term, 3 hours. Prerequisite: calculus.
- Mth 413. **Advanced Plane Analytic Geometry.** (g) One term, 3 hours. Prerequisite: calculus.
- Mth 414. **Solid Analytic Geometry.** (G) One term, 3 hours. Prerequisite: calculus.
- Mth 415. **Modern Geometry.** (G) One term, 3 hours. Prerequisite: calculus.
- Mth 416. **Projective Geometry.** (G) One term, three hours. Prerequisite: calculus.
- Mth 421, 422. **Differential Equations.** (g) Two terms, 3 hours each term. Prerequisite: calculus.
- Mth 424. **Theory of Measurements.** (g) One term, 3 hours. Prerequisite: calculus.
- Mth 425. **Vector Analysis.** (G) One term, 3 hours. Prerequisite: calculus.
- Mth 426. **Mathematical Theory of Probability.** (G) One term, 3 hours. Prerequisite: calculus.
- Mth 431, 432, 433. **Advanced Calculus.** (G) Three terms, 3 hours each term. Prerequisite: calculus.

- Mth 435. **Numerical Calculus.** (G) One term, 3 hours. Prerequisite: differential equations.
- Mth 441, 442, 443. **Mathematical Theory of Statistics.** (G) Three terms, 3 hours each term. Prerequisite: calculus.
- Mth 501. **Research.** Terms and hours to be arranged.
- Mth 503. **Thesis.** Terms and hours to be arranged.
- Mth 505. **Reading and Conference.** Terms and hours to be arranged.
- Mth 507. **Seminar.** Terms and hours to be arranged.
- Mth 511, 512, 513. **Functions of a Complex Variable.** Three terms, 3 hours each term.
- Mth 514. **Calculus of Variations.** One term, 3 hours.
- Mth 516. **Potential Theory.** One term, 3 hours.
- Mth 521, 522, 523. **Differential Equations of Mathematical Physics.** Three terms, 3 hours each term.
- Mth 531, 532, 533. **Advanced Analytical Mechanics.** Three terms, 3 hours each term. Prerequisite: Mth 321, 322, 323, or equivalent.
- Mth 541, 542. **Theory of Elasticity.** Two terms, 3 hours each term.
- Mth 544, 545. **Hydrodynamics.** Two terms, 3 hours each term.

Physics

PROFESSORS: WILLIBALD WENIGER (department head), WILLIAM BALLANTYNE ANDERSON; PROFESSOR EMERITUS: WILLIAM PINGRY BOYNTON; ASSISTANT PROFESSORS: FRED BUCKNER MORGAN, EDWIN ARTHUR YUNKER, JOHN CLIFTON GARMAN, JAMES JOSEPH BRADY

The department is prepared to accept graduate students for thesis projects in optics (including infra-red spectroscopy), in certain phases of photography, in photoelectricity, and in some other fields of modern physics, as well as in a number of special applied fields. The department has seismograph equipment, and has access for research and instructional purposes to the facilities of Radio Station KOAC.

- Ph 421, 422, 423. **Introduction to Theoretical Physics.** (G) Three terms, 3 hours each term. Prerequisite: Ph 313. Brady.
- Ph 461, 462, 463. **Advanced Photography.** (G) Three terms, 3 hours each term. Prerequisite: Ph 362. Garman.
- Ph 464. **Physics of Light Production.** (g) One term, 3 hours. Weniger.
- Ph 501. **Research.** Terms and hours to be arranged.
- Ph 503. **Thesis.** Terms and hours to be arranged.
- Ph 505. **Reading and Conference.** Terms and hours to be arranged.
- Ph 507. **Seminar.** Terms and hours to be arranged.
- Ph 524, 525, 526. **Advanced Mathematical Physics.** Three terms, hours to be arranged.
- Ph 531, 532, 533. **Advanced Electrical Theory.** Three terms, 3 hours each term. Varner.
- Ph 534, 535, 536. **Advanced Electrical Laboratory.** Three terms, 1 or 2 hours each term. Varner.
- Ph 537, 538, 539. **Conduction of Electricity Through Gases.** Three terms, 3 hours each term. Prerequisite: Ph 313, 314, 315 or equivalent. Brady.

- Ph 551, 552, 553. **Theory of Heat.** Three terms, 3 hours each term. Varner.
 Ph 561, 562, 563. **Optics.** Three terms, 3 hours each term. Prerequisite: Ph 322. Weniger.
 Ph 571, 572, 573. **Modern Physical Theories.** Three terms, 3 hours each term. Prerequisite: Ph 423. Morgan.
 Ph 576. **Quantum Mechanics.** One term, 3 hours. Prerequisite: Ph 573. Morgan.
 Ph 582. **History and Philosophy of Physics.** One term, 3 hours.
 Ph 591, 592. **Cosmic Physics.** Two terms, 3 hours each term.
 Ph 593. **Geophysics.** One term, 3 hours. Prerequisite: G 321 and differential equations.

Zoology

PROFESSOR: NATHAN FASTEN (department head); ASSISTANT PROFESSORS: KENNETH LLEWELLYN GORDON, ROSALIND WULZEN; INSTRUCTOR: ALFRED TAYLOR

The department has facilities for graduate study and research toward the master's and the doctor's degree in anatomy, physiology, parasitology, pathology, and other fields of zoology. For the master's degree, a summer's work at the Institute of Marine Biology is recommended; for the doctor's degree a summer at the institute is required.

- Z 410. **Animal Ecology.** (g) Spring term, 3 hours.
 Z 411, 412, 413. **General Physiology.** (G) Three terms, 3 hours each term. Prerequisite: general zoology, general chemistry, and organic chemistry.
 Z 431, 432. **Invertebrate Zoology.** (G) Fall and winter terms, 4 hours each term. Prerequisite: two years of zoology.
 Z 475. **Histology.** (G) Fall term, 3 hours.
 Z 476. **Microtechnique.** (g) Winter term, 3 hours.
 Z 477. **Experimental Embryology.** (G) Spring term, 3 hours.
 Z 501. **Research.** Terms and hours to be arranged.
 Z 503. **Thesis.** Terms and hours to be arranged.
 Z 505. **Reading and Conference.** Terms and hours to be arranged.
 Z 507. **Seminar.** Terms and hours to be arranged.
 Z 536. **Parasitology.** One term, 3 hours.
 Z 537. **Cytology.** One term, 3 hours.

School of Agriculture

DEAN: WILLIAM ALFRED SCHOENFELD; ASSISTANT DEAN: FREDERICK EARL PRICE

Agricultural Economics

PROFESSOR ERMINE LAWRENCE POTTER (in charge of division)

The Division of Agricultural Economics includes the departments of Agricultural Economics and Farm Management. The degree of Doctor of Philosophy is offered in the division. The degree of Master of Science is offered in the division and in each of the departments.

AGRICULTURAL ECONOMICS

PROFESSORS: MILTON NELS NELSON, ERMINE LAWRENCE POTTER

- AEc 421. **Land Economics.** (G) Fall term, 3 hours. Prerequisite: Ec 203.
 AEc 431. **Farm Credits.** (g) Winter term, 3 hours. Prerequisite: Ec 203.
 AEc 433. **Land Taxation.** (g) Winter term, 3 hours. Prerequisite: Ec 203 or equivalent.
 AEc 441. **Principles of Agricultural Marketing.** (G) Fall term, 4 hours. Prerequisite: Ec 203.
 AEc 442. **Marketing Organizations.** (g) Spring term, 3 hours. Prerequisite: AEc 441.
 AEc 443. **Commodity Marketing.** (G) Spring term, 3 hours. Prerequisite: AEc 441.
 AEc 451. **Agricultural Prices.** (G) Spring term, 3 hours. Prerequisite: Ec 203 or 211, AEc 441.
 AEc 461. **Public Land Policies.** (G) Fall term, 3 hours.
 AEc 472. **Management of Cooperatives.** (G) Winter term, 3 hours. Prerequisite: AEc 442 and three terms of accounting.
 AEc 501. **Research.** Three terms, hours to be arranged.
 AEc 503. **Thesis.** Three terms, hours to be arranged.
 AEc 505. **Reading and Conference.** Terms and hours to be arranged.
 AEc 507. **Seminar.** Three terms, 1 hour each term.
 AEc 571. **Marketing Finance.** Spring term, 4 hours. Open only to students who have had satisfactory preparation in money and banking, rural finance, and accounting.
 AEc 572. **Marketing Problems.** Fall term, 3 or 5 hours. Prerequisite: AEc 441.

FARM MANAGEMENT

PROFESSORS: DWIGHT CURTIS MUMFORD (department head), HENRY DESBOROUGH SCUDDER; ASSOCIATE PROFESSOR: GUSTAV WESLEY KUHLMAN

- FM 411, 412, 413. **Applied Farm Management.** (G) Hours to be arranged. Prerequisite: FM 211, 311, or equivalent.
 FM 414. **Enterprise Costs and Profits.** (G) Spring term, 3 hours. Prerequisite: FM 211, 311, or equivalent.
 FM 415. **Enterprise Costs and Profits.** (g) Fall or winter term, 2 hours.
 FM 418. **Agricultural Land Use Planning.** (G) Spring term, 2 hours. Prerequisite: Ec 201, 202, 203; FM 211, 311, or equivalent.
 FM 420. **Agricultural Land Economics.** (G) Winter term, 3 hours. Prerequisite: Ec 201, 202, 203; FM 211, 311; or equivalent.
 FM 425. **Agricultural Appraisal.** (G) Spring term, 3 hours. Prerequisite: FM 211, 311, 414, 416, or equivalent.
 FM 501. **Research.** Terms and hours to be arranged.
 FM 503. **Thesis.** Terms and hours to be arranged.
 FM 507. **Seminar.** Three terms, 1 hour each term.
 FM 511. **Types and Systems of Farming.** Term and hours to be arranged. Prerequisite: Ec 203; AEc 211, 441; FM 312, 414 or equivalent.

- FM 512. **Farm Tenure and Administration.** Term and hours to be arranged. Prerequisite: Ec 203; FM 211, 311, 312 or equivalent.
- FM 514. **Advanced Agricultural Appraisal.** Term and hours to be arranged. Prerequisite: Ec 203; FM 418 or equivalent.
- FM 518. **Farm-Management Research Methodology.** Any term, 3 hours. Prerequisite: FM 211, 311, 414.

Animal Industries

PROFESSOR PHILIP MARTIN BRANDT (in charge of division)

The Division of Animal Industries includes the departments of Animal Husbandry, Dairy Husbandry, Fish and Game Management, Poultry Husbandry, and Veterinary Medicine. The Doctor of Philosophy degree is offered in the division. The Master of Science degree is offered in the division and in each of the departments.

ANIMAL INDUSTRIES

- AI 411. **Animal Nutrition.** (g) Fall or spring term, 4 hours. Prerequisite: Ch 251.
- AI 501. **Research.** Terms and hours to be arranged.
- AI 503. **Thesis.** Terms and hours to be arranged.
- AI 505. **Reading and Conference.** Terms and hours to be arranged.
- AI 507. **Seminar.** Terms and hours to be arranged.
- AI 511. **Animal Nutrition.** Winter term, 5 hours. Prerequisite: Ch 251, AI 411, or equivalent.

ANIMAL HUSBANDRY

PROFESSORS: PHILIP MARTIN BRANDT, RAY GEORGE JOHNSON, ORAN MILTON NELSON;
ASSISTANT PROFESSOR: BENJAMIN WILLIAM RODENWOLD

- AH 412. **Livestock Feeding.** (G) Winter term, 5 hours. Prerequisite: AI 411.
- AH 418. **Wool and Mohair.** (G) Spring term, 3 hours. Prerequisite: AH 315.
- AH 419, 420. **Range Livestock Management.** (G) Winter and spring terms, 3 hours each term. Prerequisite: AI 411.
- AH 421. **Pedigree Study.** (G) Spring term, hours to be arranged.
- AH 423. **Reproduction Problems.** (G) Winter term, 3 hours. Prerequisite: AI 315, 411.
- AH 424. **Livestock Economics.** (G) Spring term, 3 hours. Prerequisite: AH 412.
- AH 430. **Range Survey Methods.** (G) Spring term, 3 hours. Prerequisite: AE 111; AI 411, AH 419, 420; Bot 203, 204.

DAIRY HUSBANDRY

PROFESSORS: PHILIP MARTIN BRANDT, GUSTAV HANS WILSTER; ASSOCIATE PROFESSOR: IDWAL RALPH JONES

- DH 411, 412. **Dairy Technology.** (g) Two terms, 3 hours each term. Prerequisite: AI 122, Ch 231.
- DH 413. **Dairy Technology.** (G) One term, 3 hours. Prerequisite: DH 411, 412.

- DH 421. **Breeding Dairy Cattle.** (G) Winter term, 3 hours. Prerequisite: AI 315.
- DH 422. **Dairy Cattle Feeding.** (G) Spring term, 3 hours. Prerequisite: AI 411.

FISH AND GAME MANAGEMENT

PROFESSOR: ROLAND EUGENE DIMICK; ASSISTANT PROFESSOR: FRANCES FRIDAY GRIFFITHS

- FG 451, 452. **Management of Game Birds.** (G) Winter and spring terms, 3 hours each term. Prerequisite: Z 321, FG 352.
- FG 454, 455. **Management of Game Fish.** (G) Fall and winter terms, 3 hours each term. Prerequisite: Z 323, FG 353.
- FG 457, 458. **Management of Big Game.** (G) Winter and fall terms, 3 hours each term. Prerequisite: Z 322, FG 352.
- FG 460. **Management of Fur Bearers.** (G) Spring term, 3 hours. Prerequisite: Z 322, FG 352.

POULTRY HUSBANDRY

PROFESSORS: HUBERT ELMER COSBY, FRANK LESTER KNOWLTON

- PH 411. **Poultry Feeding.** (g) Fall term, 4 hours. Prerequisite: AI 123, 411.
- PH 421. **Marketing Poultry Products.** (g) Winter term, 4 hours. Prerequisite: AI 123.
- PH 431. **Poultry Plant Management.** (g) Spring term, 4 hours. Prerequisite: PH 321, 331, 411, 421.
- PH 441. **Poultry Breeding.** (G) Spring term, 4 hours. Prerequisite: AI 123, 315.

VETERINARY MEDICINE

PROFESSOR: JAMES NIVEN SHAW

Graduate students, to be accepted as candidates for an advanced degree through the Department of Veterinary Medicine, must either be graduate veterinarians or have equivalent preparation.

- VM 441, 442, 443. **Diseases of Livestock.** (g) Three terms, 3 hours each term. Prerequisite: VM 221, 321, or equivalent.

Plant Industries

PROFESSOR GEORGE ROBERT HYSLOP (in charge of division)

The Division of Plant Industries includes the departments of Farm Crops, Food Industries, Horticulture, and Soils. The Doctor of Philosophy degree is offered in the division. The Master of Science degree is offered in the division and in each of the departments.

FARM CROPS

PROFESSOR: GEORGE ROBERT HYSLOP; ASSOCIATE PROFESSOR: DONALD DAVID HILL; ASSISTANT PROFESSORS: ROBERT ESTES FORE, HAROLD ETHAN FINNELL

Work leading to advanced degrees in farm crops may be pursued along general or specialized lines. The field may include: breeding and improvement of cereal, forage, seed, and specialty crops; crop ecological work; range and pas-

ture survey and improvement; cover crop and conservation problems; market, storage, and distribution studies; and many other branches. Graduate courses in soils, horticulture, food products, botany, plant pathology, entomology, and agricultural economics may be applied to the major, if the courses are integrated with the specific aims of the student. Minor work in science and social science is encouraged.

FC 411. **Crop Inspection.** (G) Winter term, 4 hours. Prerequisite: FC 111, 211, 322, 323; Ch 251; or equivalents.

FC 414. **Seed Production.** (G) Fall term, 3 hours. Prerequisite: FC 111, 211, 322, 323; or equivalents.

FC 415, 416. **Plant Breeding, Field Plot Technique.** (G) Two terms, 3 hours each term. Prerequisite: FC 111, 211; Bot 202, 331; FC 315; or equivalents.

FC 417. **Plant Genetics.** (G) Winter term, 3 hours. Prerequisite: FC 111, 211; Bot 202, 331; FC 315; or equivalents.

FC 421. **Crop Efficiency.** (G) Spring term, 3 hours. Prerequisite: FC 322, 323, 414; Ch 221; or equivalents.

FC 501. **Research.** Terms and hours to be arranged.

FC 503. **Thesis.** Terms and hours to be arranged.

FC 505. **Reading and Conference.** Terms and hours to be arranged.

FC 507. **Seminar.** Three terms, 1 hour each term.

FOOD INDUSTRIES

PROFESSOR: ERNEST HERMAN WIEGAND

FI 411. **Food-Products Manufacture.** (G) Fall term, 3 hours. Prerequisite: Bac 413, Ch 351.

FI 412. **Frozen Foods.** (G) Spring term, 3 hours. Prerequisite: Ch 251; Bac 204,, 205, 206; FI 250, 411; or equivalents.

FI 501. **Research.** Terms and hours to be arranged.

FI 503. **Thesis.** Terms and hours to be arranged.

FI 505. **Reading and Conference.** Terms and hours to be arranged.

FI 507. **Seminar.** Terms and hours to be arranged.

HORTICULTURE

PROFESSORS: WALTER SHELDON BROWN, HENRY HARTMAN, ARTHUR GEORGE BRISTOW
BOUQUET, WILLIS PIERRE DURUZ

Hrt 411. **Methods of Research.** (G) Winter term, 3 hours.

Hrt 501. **Research.** Terms and hours to be arranged.

Hrt 503. **Thesis.** Terms and hours to be arranged.

Hrt 505. **Reading and Conference.** Terms and hours to be arranged.

Hrt 507. **Seminar.** Three terms, 1 hour each term.

HORTICULTURE—POMOLOGY

Pom 415. **Fruit Production.** (G) Spring term, 4 hours. Prerequisite: Hrt 111.

Pom 417. **Systematic Pomology.** (G) Fall term, 4 hours.

Pom 419. **Spraying.** (g) Spring term, 3 hours. Prerequisite: Hrt 111.

Pom 431. **Pruning.** (g) Winter term, 3 hours. Prerequisite: Hrt 111.

HORTICULTURE—VEGETABLE CROPS

VC 423. **Vegetable Varieties.** (G) Fall term, 2 hours. Prerequisite: Hrt 111. Two two-hour laboratory periods.

VC 424. **Vegetable Marketing.** (g) Fall term, 3 hours. Prerequisite: Hrt 111. One lecture; 1 recitation; 1 two-hour laboratory period.

SOILS

PROFESSORS: WILBUR LOUIS POWERS, CHARLES VLADIS RUZEK, ROSCOE ELMO STEPHENSON;
ASSOCIATE PROFESSOR: EDWARD FRITZHOFF TORGERSON

Sls 401. **Research.** (g) Three terms, 3 hours each term. Prerequisite: Sls 421, 424.

Sls 411. **Western Land and Water Laws.** (g) Winter term, 3 hours.

Sls 414. **Irrigation Investigations.** (G) Fall term, 3 hours.

Sls 418. **Land Drainage.** (G) Spring term, 3 hours. Prerequisite: Sls 211.

Sls 421. **Soils Physics Lectures.** (g) Fall term, 3 hours. Prerequisite: Sls 212, 213.

Sls 422. **Soil Physics Laboratory.** (g) Fall term, 2 hours.

Sls 424. **Soil Fertility Lectures.** (g) Winter term, 3 hours. Prerequisite: Sls 421.

Sls 425. **Soil Fertility Laboratory.** (g) Winter term, 2 hours.

Sls 428. **Soil Management.** (G) Spring term, 5 hours. Prerequisite: Sls 424.

Sls 431. **Soils of Oregon.** (G) Winter term, 2 hours.

Sls 432. **Soil Survey.** (G) Spring term, 3 hours. Prerequisite: Sls 421, or Sls 424, 431.

Sls 501. **Research.** Terms and hours to be arranged.

Sls 503. **Thesis.** Terms and hours to be arranged.

Sls 505. **Reading and Conference.** Terms and hours to be arranged.

Sls 507. **Seminar.** Three terms, 1 hour each term. Prerequisite: graduate standing in soils or related courses.

Sls 511. **Pedology.** Spring term, 3 hours.

Sls 512. **Soil Colloids.** Winter term, 2 hours.

Sls 513. **Plant Nutrition.** Winter term, 2 hours.

Sls 514. **Soil Organic Matter.** Fall term, 2 hours.

Agricultural Education, Engineering, and Extension Methods

AGRICULTURAL EDUCATION

See SCHOOL OF EDUCATION, page 72.

AGRICULTURAL ENGINEERING

ASSOCIATE PROFESSOR: HERBERT REEVES SINNARD

AE 501. **Research.** Terms and hours to be arranged.

AE 503. **Thesis.** Terms and hours to be arranged.

AE 505. **Reading and Conference.** Terms and hours to be arranged.

AE 507. **Seminar.** Terms and hours to be arranged.

EXTENSION METHODS

PROFESSOR: FRANK LLEWELLYN BALLARD

EM 411, 412. **Extension Methods.** (G) Two terms, 3 hours each term.

School of Education

DEAN: JAMES RALPH JEWELL; ASSISTANT DEAN: CARL WALTER SALSER

Completion of the undergraduate preparation required for a high-school certificate in Oregon or the equivalent is prerequisite to graduate work toward a master's or doctor's degree in education. Students who are preparing for classroom teaching must also have satisfied subject-matter requirements in at least two fields.

All candidates for a graduate degree are strongly advised to take Introduction to Thesis Writing (Ed 511). Candidates for the master's degree should take at least 9 term hours in courses carrying a 500 number.

A candidate for the master's degree is expected to take his preliminary examination early in his first term of residence. This examination covers the basic fields of secondary education, educational psychology, and principles of teaching.

A candidate for the Doctor of Education degree must take his preliminary examinations approximately one year before he intends to receive the degree. The preliminary examinations for the doctor's degree cover the field of education in which the candidate intends to write his thesis and one or two other fields. For this degree a reading knowledge of one or more foreign languages may be required, depending on the program of the individual student.

Approximately 40 term hours of work in education beyond the master's degree (exclusive of thesis) and not less than 40 term hours in a field or fields other than education are required for the doctor's degree. The thesis for the Ed.D. degree may be: (1) a mature and expert evaluation of existing knowledge, involving the application of such knowledge to some of the major problems in education; or (2) an original contribution to knowledge through research in education.

Education

PROFESSORS: CARL WALTER SALSER (department head), FREDERICK MAURICE HUNTER, CLAIR VAN NORMAN LANGTON, OTHNIEL ROBERT CHAMBERS, HERBERT REYNOLDS LASLETT, ERNEST WILLIAM WARRINGTON, FRANK WINTEROP PARR, RILEY JENKINS CLINTON, EVA M. SEEN, GLEN ALMER BAKKUM

Soc 411, 412. **Social Problems.** (g) Winter and spring terms, 2 or 3 hours each term. Prerequisite: basic work in general sociology. Bakkum.

Ed 416. **Measurement in Secondary Education.** (G) Any term, 3 hours. Prerequisite: Ed 311, 312, 313, or equivalent. Clinton.

Ed 417. **Statistical Methods in Education.** (G) Winter or spring term, 3 hours. Prerequisite: Ed 416. Clinton.

Ed 421, 422, 423. **School Health Problems.** (g) Three terms, 2 hours each term. Langton.

Ed 425. **School and Community Club Work.** (G) Winter term, 3 hours. Prerequisite: Ed 311, 312, 313. Seen.

Ed 431. **Construction and Use of Visual Aids.** (G) One term, 3 hours. Prerequisite: Ed 311, 312, 313, or equivalent.

Ed 440. **History of Education.** (G) Fall term, 3 hours. Prerequisite: Ed 311, 312, 313. Warrington.

Ed 460. **Psychology of Childhood.** (G) Fall or spring term, 3 hours. Prerequisite: Ed 311, 312, 313. Laslett.

Ed 461. **Adolescence: Growth and Development of the Individual.** (G) Winter term, 3 hours. Prerequisite: Psy 201, 202, 203. Salser.

Ed 464. **Vocational Legislation and Administration.** (G) One term, 3 hours. Prerequisite: Ed 488 or equivalent.

Ed 470. **The Junior High School.** (G) Fall term, 3 hours. Prerequisite: Ed 420. Salser.

Ed 480. **The Conference Method in Vocational Education.** (G) One term, 3 hours. Prerequisite: Ed 333 or consent of instructor. Adams.

Ed 485. **Guidance and Personnel Practices.** (G) Fall or winter term, 3 hours. Salser.

Ed 486. **Current Occupational Trends.** (G) Winter term, 3 hours. Salser.

Ed 487. **Counseling.** (G) Spring term, 3 hours. Salser.

Ed 488. **Philosophy of Vocational Education.** (G) Winter term, 3 hours. Prerequisite: Ed 311, 312, 313, or equivalent. Adams.

Ed 489. **Civic Education.** (G) Fall or spring term, 3 hours. Prerequisite: Ed 311, 312, 313, or equivalent. Salser.

Ed 490. **Character Education.** (G) Fall or winter term, 3 hours. Prerequisite: Ed 311, 312, 313, or equivalent. Warrington.

Ed 491. **Group Thinking.** (G) Spring term, 3 hours. Prerequisite: Ed 490. Warrington.

Ed 492. **Character Education Problems.** (G) One term, 3 hours. Prerequisite: Ed 490. Warrington.

Ed 497. **Adult Education.** (G) Spring term, 3 hours. Warrington.

Ed 498. **Organization and Supervision for High-School Teachers.** (G) Winter term, 3 hours. Prerequisite: Ed 311, 312, 313. Clinton.

Ed 501. **Research.** Terms and hours to be arranged.

Ed 503. **Thesis.** Terms and hours to be arranged.

Ed 505. **Reading and Conference.** Terms and hours to be arranged.

Ed 507. **Seminar.** Terms and hours to be arranged.

Ed 511. **Introduction to Thesis Writing.** Fall term, 2 hours. Clinton.

Ed 522. **Foreign School Systems.** Winter term, 3 hours. Prerequisite: Ed 454 or 521. Laslett.

Ed 524. **Curriculum Construction.** Winter term, 3 hours. Prerequisite: Ed 311, 312, 313, or equivalent. Parr.

Ed 526. **Construction and Use of Objective Examinations.** Spring term, 3 hours. Prerequisite: Ed 416. Clinton and Laslett.

Ed 527. **Tests and Their Social Uses.** Spring term, 3 hours.

Ed 535. **Psychological Aspects of Vocations.** Any term, 3 hours. Prerequisite: Psy 211, Ed 312.

- Ed 543. **History of American Education.** Spring term, 3 hours. Prerequisite: Ed 311, 312, 313, or equivalent. Salsler.
- Ed 546. **Philosophy of Education.** Winter term, 3 hours. Prerequisite: Ed 311, 312, 313. Warrington.
- Ed 555. **College and University Teaching.** Spring term, 3 hours. Prerequisite: graduate standing in education. Parr.
- Ed 561. **Advanced Educational Psychology.** Any term, 3 hours. Prerequisite: graduate standing in education. Laslett.

Agricultural Education

PROFESSOR: HEBER HOWARD GIBSON (department head)

- AEd 501. **Research.** Terms and hours to be arranged. Gibson.
- AEd 503. **Thesis.** Terms and hours to be arranged.
- AEd 505. **Reading and Conference.** Terms and hours to be arranged.
- AEd 507. **Seminar.** Terms and hours to be arranged.
- AEd 516. **Extension Course in Teacher Training.** Any term, hours to be arranged. Prerequisite: Ed 311, 312, 313, 323. Gibson.
- AEd 533. **Rural Survey Methods.** Spring term, 2 hours. Prerequisite: Ed 311, 312, 313, 323. Gibson.

Commercial Education

ASSOCIATE PROFESSOR: BERTHA WHILLOCK STUTZ

- CEd 501. **Research.** Terms and hours to be arranged. Stutz.
- CEd 503. **Thesis.** Terms and hours to be arranged.
- CEd 505. **Reading and Conference.** Terms and hours to be arranged.
- CEd 507. **Seminar.** Terms and hours to be arranged.
- CEd 541. **Current Practices in Typewriting.** Fall term, 3 hours. Prerequisite: Ed 329 and teaching experience in typing. Stutz.
- CEd 542. **Current Practices in Shorthand.** Winter term, 3 hours. Prerequisite: Ed 329 and teaching experience in stenography. Frick.
- CEd 543. **Problems in Commercial Education.** Spring term, 3 hours. Prerequisite: Ed 329 and teaching experience in commercial subjects. Stutz.

Home Economics Education

PROFESSOR: FLORENCE BLAZIER (department head); INSTRUCTOR: RUTH MORRIS FOREST

Students seeking a master's degree in home economics education should take Statistical Methods (Ed 417) and Introduction to Thesis Writing (Ed 511).

- HEd 411. **The Curriculum in Home Economics.** (G) Any term, 3 hours. Blazier.
- HEd 412. **Organization and Administration of Homemaking Education.** (G) Any term, 3 hours. Prerequisite: HEd 411.
- HEd 413. **The Supervision of Home Projects.** (G) Spring term, 2 hours. Prerequisite: HEd 411. Blazier.
- HEd 440. **Adult Education in Home Economics.** (G) Winter term, hours to be arranged. Prerequisite: HEd 412. Blazier.

- HEd 501. **Research.** Terms and hours to be arranged. Blazier.
- HEd 503. **Thesis.** Terms and hours to be arranged.
- HEd 505. **Reading and Conference.** Terms and hours to be arranged.
- HEd 507. **Seminar.** Terms and hours to be arranged.

Industrial Education

PROFESSOR: GEORGE BRYAN COX (department head); ASSOCIATE PROFESSOR: ORVILLE DANIEL ADAMS; INSTRUCTOR: FRANK LLOYD FRANCE

- IEd 470. **History of Manual and Industrial Education.** (G) Fall term, 3 hours. Prerequisite: Ed 313, 333.
- IEd 471. **Teaching Supplementary Subjects.** (G) One term, 3 hours. Prerequisite: suitable preparation in mathematics, drawing, and science, and consent of instructor.
- IEd 472. **Trade Analysis.** (G) Fall term, 3 hours. Prerequisite: Ed 333 either prerequisite or parallel. Meyer.
- IEd 473. **The General Shop and Its Problems.** (G) Fall term, 2 hours. Prerequisite: Ed 311, 312, 313, 330. Cox.
- IEd 474. **Written and Visual Teaching Aids.** (G) Winter term, 3 hours. Prerequisite: IEd 473 or equivalent. Cox.
- IEd 475. **Project Analysis and the Contract Plan.** (G) One term, 2 hours. Prerequisite: IEd 473 or equivalent. Cox.
- IEd 478. **Cooperative Part-Time Education.** (G) One term, 3 hours. Prerequisite: Ed 488 or equivalent.
- IEd 479. **Coordination of Part-Time Schools.** (G) One term, 2 hours. Prerequisite: Ed 488 or consent of instructor.
- IEd 482. **Supervision of Industrial Education.** (G) One term, 2 hours. Prerequisite: Ed 488, IEd 481.
- IEd 484. **Industrial Education and Changing Conditions.** (G) One term, 3 hours. Prerequisite: Ed 488 or equivalent. Adams.
- IEd 485. **Labor, Industry, and the Apprenticeship Program.** (G) One term, 3 hours. Prerequisite: Ed 488 or equivalent. Adams.
- IEd 501. **Research.** Terms and hours to be arranged.
- IEd 503. **Thesis.** Terms and hours to be arranged.
- IEd 505. **Reading and Conference.** Terms and hours to be arranged.
- IEd 507. **Seminar.** Terms and hours to be arranged.

School of Engineering and Industrial Arts

DEAN: RICHARD HAROLD DEARBORN

Chemical Engineering

PROFESSOR: GEORGE WALTON GLEESON (department head); ASSISTANT PROFESSOR: EDWARD GIBSON LOCKE

- ChE 411, 412, 413. **Unit Operations.** (g) Three terms, 3 hours each term.
- ChE 414, 415. **Unit Operations Laboratory.** (g) Fall and spring terms, 3 hours each term.

- ChE 421, 422, 423. **Industrial Chemistry.** (g) Three terms, 2 hours each term.
- ChE 432. **Industrial Chemical Laboratory.** (g) Winter term, 3 hours.
- ChE 433. **Chemical Plant Design.** (g) Spring term, 3 hours.
- ChE 441, 442, 443. **Unit Processes.** (g) Three terms, 3 hours each term.
- ChE 501. **Research.** Terms and hours to be arranged.
- ChE 503. **Thesis.** Terms and hours to be arranged.
- ChE 505. **Reading and Conference.** Terms and hours to be arranged.
- ChE 507. **Seminar.** Terms and hours to be arranged.
- ChE 512. **Economic Balance.** Winter term, 3 hours.
- ChE 513. **Petroleum Refining.** Spring term, 3 hours.

Civil Engineering

PROFESSORS: CHARLES ARTHUR MOCKMORE (department head), JAMES RINALDO GRIFFITH, BURDETTE GLENN; ASSOCIATE PROFESSORS: IVAN FREDERIC WATERMAN, FRED MERRYFIELD

- CE 411. **Hydrology.** (G) Fall term, 3 hours.
- CE 412. **Sanitary Engineering.** (G) Fall term, 3 hours. Prerequisite: CE 311.
- CE 421. **Highway Engineering.** (g) Fall term, 4 hours. Prerequisite: CE 333.
- CE 422. **Highway Engineering.** (g) Winter term, 3 hours.
- CE 425. **Economics of Highway Transportation.** (G) Spring term, 3 hours. Prerequisite: CE 333.
- CE 426. **Highway Administration and Finance.** (G) Spring term, 3 hours. Prerequisite: CE 333.
- CE 427. **Contracts and Specifications.** (g) Spring term, 3 hours.
- CE 438. **Municipal Engineering and City Planning.** (G) Spring term, 3 hours.
- CE 451. **Water-Power Engineering.** (G) Any term, 3 hours. Prerequisite: CE 313, 322, or 342.
- CE 452. **Water Supply.** (G) Any term, 3 hours.
- CE 454. **Sewage Disposal.** (G) Spring term, 3 hours. Prerequisite: CE 311.
- CE 460. **Estimating and Cost Analysis.** (g) Spring term, 3 hours.
- CE 472. **Masonry and Foundations.** (g) Fall or winter term, 4 hours. Prerequisite: CE 383.
- CE 481. **Structural Engineering.** (g) Fall term, 4 hours. Prerequisite: CE 351, 382.
- CE 482. **Structural Design.** (g) Winter term, 4 hours. Prerequisite: CE 351, 382.
- CE 483. **Building Design.** (G) Spring term, 4 hours. Prerequisite: CE 472, 481.
- CE 485. **Structural Analysis.** (G) Winter term, 3 hours. Prerequisite: CE 382.
- CE 501. **Research.** Terms and hours to be arranged.
- CE 503. **Thesis.** Terms and hours to be arranged.
- CE 505. **Reading and Conference.** Terms and hours to be arranged.
- CE 507. **Seminar.** Terms and hours to be arranged.

Electrical Engineering

PROFESSORS: FRED ORVILLE McMILLAN (department head), LAWRENCE FISHER WOOSTER, ARTHUR LEMUEL ALBERT; ASSOCIATE PROFESSOR: EUGENE CARL STARR; ASSISTANT PROFESSOR: BEN HODGE NICHOLS; INSTRUCTOR: FREDERICK ALTON EVEREST

- EE 411, 412, 413. **Electrical Engineering.** (g) Three terms, 3 hours each term.
- EE 414, 415, 416. **Electrical Design.** (g) Three terms, 1 hour each term.
- EE 421, 422, 423. **Electrical Engineering Laboratory.** (G) Three terms, 3 hours each term.
- EE 431, 432. **Illumination.** (G) Winter and spring terms, 3 hours each term.
- EE 442. **Electrical Transportation.** (g) Winter term, 3 hours.
- EE 443. **Railway Electrification.** (g) Spring term, 3 hours.
- EE 451. **Electrical Transients.** (G) Fall term, 3 hours.
- EE 452, 453. **High-Voltage Engineering.** (G) Winter and spring terms, 3 hours each term.
- EE 455. **Electrical Characteristics of Transmission Circuits.** (G) Winter term, 3 hours.
- EE 461, 462, 463. **Communication Engineering.** (G) Three terms, 3 hours each term.
- EE 464, 465. **Vacuum Tubes and Circuits.** (G) Fall and winter terms, 3 hours each term.
- EE 466. **Engineering of Sound Systems.** (G) Spring term, 3 hours.
- EE 467. **Radio Engineering.** (G) Spring term, 3 hours. Prerequisite: EE 313, 462, 465.
- EE 473. **Electrical Problems.** (G) Fall term, 3 hours.
- EE 501. **Research.** Terms and hours to be arranged.
- EE 503. **Thesis.** Terms and hours to be arranged.
- EE 505. **Reading and Conference.** Terms and hours to be arranged.
- EE 507. **Seminar.** Terms and hours to be arranged.

Mechanical Engineering

PROFESSORS: SAMUEL HERMAN GRAF (department head), WALLACE HOPE MARTIN, MARK CLYDE PHILLIPS; ASSOCIATE PROFESSORS: CHARLES EDWIN THOMAS, JAMES CAREY OTHUS, BENJAMIN FRANKLIN RUFFNER; ASSISTANT PROFESSOR: WILLIAM HOWARD PAUL

- ME 411, 412, 413. **Machine Design.** (g) Three terms, 3 hours each term. Prerequisite: ME 311.
- ME 414. **Highway Materials Laboratory.** (g) Fall term, 3 hours.
- ME 415. **Structural Materials Laboratory.** (g) Winter term, 3 hours. Prerequisite: ME 316.
- ME 416. **Stress Analysis.** (G) Fall term, 3 hours. Prerequisite: ME 311.
- ME 417, 418. **Photoelasticity.** (G) Winter and spring terms, 3 hours each term. Prerequisite: ME 316, 416.
- ME 419. **Soil Mechanics.** (g) Spring term, 3 hours. Prerequisite: ME 316, CE 351, or ME 311.

- ME 421. **Modern Materials.** (G) Fall term, 3 hours. Prerequisite: ME 311, 316.
- ME 422. **Gas Technology.** (G) Winter term, 3 hours. Prerequisite: ME 351, 352, 353.
- ME 423. **Fuel Technology.** (G) Spring term, 3 hours. Prerequisite: ME 323.
- ME 425. **Fuel and Lubricant Testing.** (G) Spring term, 3 hours. Prerequisite: ME 316.
- ME 431, 432. **Power-Plant Engineering.** (g) Fall and winter terms, 3 hours each term. Prerequisite: ME 323.
- ME 441, 442, 443. **Airplane Design.** (g) Three terms, 3 hours each term. Prerequisite: ME 342.
- ME 446. **Advanced Aerodynamics.** (G) Spring term, 3 hours. Prerequisite: ME 342.
- ME 451, 452. **Mechanical Laboratory.** (g) Fall and winter terms, 2 hours each term. Prerequisite: ME 353.
- ME 453. **Mechanical Laboratory.** (g) Spring term, 2 hours. Prerequisite: ME 452.
- ME 456, 457. **Aeronautical Laboratory.** (g) Fall and winter terms, 2 hours each term. Prerequisite: ME 342, 353.
- ME 461. **Heating and Air Conditioning.** (G) Spring term, 3 hours. Prerequisite: ME 323.
- ME 462. **Refrigeration.** (G) Spring term, 3 hours. Prerequisite: ME 323.
- ME 473. **Industrial Engineering.** (G) Spring term, 3 hours.
- ME 481. **Metallography and Pyrometry.** (G) Fall or winter terms, 3 hours. Prerequisite: ME 316.
- ME 482. **Metallography.** (G) Spring term, 3 hours. Prerequisite: ME 481.
- ME 491, 492, 493. **Automotive Engineering.** (G) Three terms, 3 hours each term. Prerequisite: ME 321, 322, 323.
- ME 501. **Research.** Terms and hours to be arranged.
- ME 503. **Thesis.** Terms and hours to be arranged.
- ME 505. **Reading and Conference.** Terms and hours to be arranged.
- ME 507. **Seminar.** Three terms, 1 hour each term.

Mining Engineering

PROFESSOR: JAMES HERVEY BATCHELOR (department head)

METALLURGY

- Met 461. **General Metallurgy.** (g) Fall term, 3 hours. Prerequisite: Ch 232 or equivalent.
- Met 462. **Metallurgy of the Base and Precious Metals.** (g) Winter term, 4 hours. Prerequisite: Met 461.
- Met 471, 472. **Fire Assaying.** (g) Fall and winter terms, 2 hours each term. Prerequisite: Ch 232 or equivalent.
- Met 481, 482, 483. **Ore Dressing.** (g) Three terms, 3 hours each term. Prerequisite to Met 481, 482: G 201, 202, 203, or equivalent. Prerequisite to Met 483: Met 482, Ch 232, 340.

- Met 491, 492. **Ore-Dressing Laboratory.** (g) Fall and winter terms, 3 hours each term. Prerequisite: Met 471, 472, 481, 482.

MINING ENGINEERING

- MiE 405. **Reading and Conference.** (g) Terms and hours to be arranged.
- MiE 407. **Seminar.** (g) Any term, 1 hour each term.
- MiE 433. **Mining Machinery, General Mining Operations.** (g) Spring term, 3 hours. Prerequisite: GE 111, 112, 113.
- MiE 441. **Mining Methods.** (g) Fall term, 4 hours. Prerequisite: GE 111, 112, 113.
- MiE 442, 443. **Mining Engineering.** (g) Winter and spring terms, 3 hours each term. Prerequisite: MiE 441 or equivalent.
- MiE 453. **Mine Surveying.** (g) Spring term, 3 hours. Prerequisite: CE 221; GE 111, 112, 113.
- MiE 461. **Mine Economics and Mining Law.** (g) Fall term, 3 hours.
- MiE 462. **Mine and Power Equipment.** (g) Winter term, 3 hours. Prerequisite: MiE 433.
- MiE 463. **Mine-Plant Design.** (g) Spring term, 2 hours. Prerequisite: MiE 433, 442.

Industrial Arts

PROFESSOR: GEORGE BRYAN COX (department head); ASSISTANT PROFESSOR: EDWIN DAVID MEYER

Candidates for a master's degree in industrial arts are strongly advised to take Introduction to Thesis Writing (Ed 511).

- IA 411. **Shop Planning and Organization.** (G) Spring term, 3 hours. Prerequisite: Ed 315.
- IA 462, 463. **Production Engineering.** (G) Winter and spring terms, 3 hours each term. Prerequisite: IA 163 or 260, IA 361.
- IA 505. **Reading and Conference.** Terms and hours to be arranged.

School of Forestry

DEAN: GEORGE WILCOX PEAVY; ASSISTANT DEAN: EARL GEORGE MASON

Logging Engineering

PROFESSOR: HENRY RICHARD PATTERSON (department head)

- LE 472. **Logging Plans.** (g) Winter term, 5 hours. Prerequisite: LE 471.
- LE 473. **Logging Plans.** (g) Spring term, 5 hours. Prerequisite: LE 472.
- LE 474. **Timber Transportation.** (g) Fall term, 4 hours.
- LE 501. **Research.** Terms and hours to be arranged.
- LE 503. **Thesis.** Terms and hours to be arranged.
- LE 505. **Reading and Conference.** Terms and hours to be arranged.
- LE 507. **Seminar.** Terms and hours to be arranged.

Technical Forestry

PROFESSOR: THURMAN JAMES STARKER (department head), EARL GEORGE MASON; ASSISTANT PROFESSORS: RICHARD SENG KEARNS, HARRY IRA NETTLETON

- F 411, 412. **Forest Finance.** (g) Fall and winter terms, 4 hours each term.
 F 413. **Forest Economics.** (g) Spring term, 4 hours.
 F 421. **Forest Management: Recreation.** (g) Fall term, 3 hours.
 F 422. **Forest Management: Regulation.** (g) Winter term, 3 hours.
 F 423. **Forest Management: Forest Plans.** (g) Spring term, 3 hours.
 F 501. **Research.** Terms and hours to be arranged.
 F 503. **Thesis.** Terms and hours to be arranged.
 F 505. **Reading and Conference.** Terms and hours to be arranged.
 F 507. **Seminar.** Terms and hours to be arranged.
 F 511. **Forest Economics.** One term, 3 hours. Prerequisite: F 411, 412, 413, or equivalent.
 F 512. **Forest Economics.** One term, 3 hours. Prerequisite: F 411, 412, 413, or equivalent.
 F 521. **Forest Management.** One term, 3 hours. Prerequisite: F 421, 422, 423, or equivalent.
 F 541, 542, 543. **Silviculture.** Three terms, 3 hours each term. Prerequisite: F 221, 222, 223; F 341, 342, 343.

Wood Products

ASSISTANT PROFESSOR: ROBERT MURRAY EVENDEN; INSTRUCTOR: GLENN VOORHIES

- WP 494. **Lumber Seasoning.** (g) Fall term, 4 hours. Prerequisite: F 331.
 WP 495. **The Lumber Plant.** (g) Winter term, 4 hours.
 WP 496. **Lumber Merchandising.** (g) Spring term, 4 hours. Prerequisite: WP 495.
 WP 501. **Research.** Terms and hours to be arranged.
 WP 503. **Thesis.** Terms and hours to be arranged.
 WP 505. **Reading and Conference.** Terms and hours to be arranged.
 WP 507. **Seminar.** Terms and hours to be arranged.

School of Home Economics

DEAN: AVA BERTHA MILAM

Clothing, Textiles, and Related Arts

PROFESSOR: ALMA CATHERINE FRITCHOFF (department head); ASSOCIATE PROFESSORS: EDITH RHYNE, ELIZABETH WILEY; ASSISTANT PROFESSORS: GERTRUDE STRICKLAND, BERNICE BAND

Students working toward a master's degree in clothing, textiles, and related arts are required to take a course in statistics (Ed 417 or equivalent) and 12 term hours of work selected from the following courses: Dress Design (CT 411), Commercial Clothing (CT 412), House Furnishing (CT 431), Applied Design (CT 435), Advanced Textiles (CT 450).

- CT 411. **Dress Design.** (G) One term, 3 hours. Prerequisite: CT 311, 312, 335.
 CT 412. **Commercial Clothing.** (G) One term, 3 hours. Prerequisite: CT 311, 312, 335.
 CT 420. **Clothing for Children.** (G) One term, 3 hours. Prerequisite: CT 212, 250, 311.
 CT 431. **House Furnishing.** (G) One term, 3 hours. Prerequisite: CT 331, 335.
 CT 435. **Applied Design.** (G) One term, 3 hours. Prerequisite: CT 331, 335.
 CT 450. **Advanced Textiles.** (G) One term, 3 hours. Prerequisite: CT 331, 335, Ch 121 or 251.
 CT 501. **Research.** Terms and hours to be arranged.
 CT 503. **Thesis.** Terms and hours to be arranged.
 CT 505. **Reading and Conference.** Terms and hours to be arranged.
 CT 507. **Seminar.** Terms and hours to be arranged.

Extension Methods

PROFESSORS: FRANK LLEWELLYN BALLARD, AZALEA LINFIELD SAGER

- EM 411, 412. **Extension Methods.** (G) Two terms, 3 hours each term.

Foods and Nutrition

PROFESSOR: JESSAMINE CHAPMAN WILLIAMS (department head); ASSOCIATE PROFESSOR: MARGARET LOUISE FINCKE; ASSISTANT PROFESSORS: AGNES KOLSHORN, EVRA ALTA GARRISON; INSTRUCTOR: VIVIAN MAE ROBERTS

Students intending to do graduate work in the Department of Foods and Nutrition should take a course in quantitative chemistry as a part of their undergraduate preparation. Graduate students who have not had work in quantitative chemistry must take such a course in addition to the 45 term hours required for a master's degree. A course in statistics (Ed 417 or equivalent) is required of all graduate majors.

Students working toward a graduate major in foods are strongly advised to take a course in physical chemistry.

Students working toward a graduate major in nutrition are strongly advised to take Biochemistry (Ch 450, 451, 452).

- FN 412. **Food Management.** (g) Winter or spring term, 3 hours. Prerequisite: FN 213, 225, 411; or FN 222, 320.
 FN 420. **Nutrition in Disease.** (G) Spring term, 3 hours. Prerequisite: FN 321, Z 211.
 FN 421. **Nutrition of the Infant and Child.** (G) One term, 3 hours. Prerequisite: FN 321.
 FN 422. **Basal Metabolism.** (G) One term, 3 hours. Prerequisite: FN 321.
 FN 423. **Animal Experimentation.** (G) Any term, 3 hours. Prerequisite: FN 321.
 FN 435. **Experimental Cookery.** (G) Winter term, 3 hours. Prerequisite: Ch 121, FN 222.

FN 481. **Readings in Nutrition.** (G) One term, 3 hours. Prerequisite: FN 321.

FN 501. **Research.** Terms and hours to be arranged.

FN 503. **Thesis.** Terms and hours to be arranged.

FN 505. **Reading and Conference.** Terms and hours to be arranged.

FN 507. **Seminar.** Terms and hours to be arranged.

Home Economics Education

See SCHOOL OF EDUCATION, page 72.

Household Administration

PROFESSORS: SARA WATT PRENTISS (department head), VERA HASKELL BRANDON; ASSOCIATE PROFESSOR: ELEANOR MAY SPIKE; ASSISTANT PROFESSOR: RUTH GILL HAMMOND

Graduate students may specialize in household management, child development, family relationships, and related fields. Graduate students in household management should have a background of undergraduate courses in economics, foods, clothing, child development, and household management. Physics is necessary for students interested in household equipment. Graduate students in child development and family relationships should have had undergraduate courses in biology, psychology, and sociology, as well as in home economics: they must have had HAd 411, 412 or equivalent and must take Psy 471, 472, 473 unless they have already had this work. Students should confer with the department concerning their undergraduate preparation before planning a graduate program.

Early in their program of graduate work students should take Statistical Methods in Education (Ed 417). Introduction to Thesis Writing (Ed 511) is highly desirable.

HAd 413. **Child Development.** (G) Spring term, 3 hours. Prerequisite: HAd 411, 412.

HAd 422. **Family Relationships.** (G) Fall or spring term, 2 hours. Prerequisite or parallel: HAd 320 or HAd 411, 412; HAd 340.

HAd 423. **Parent Education.** (G) Winter term, 2 hours. Prerequisite: HAd 320 or HAd 411; HAd 340.

HAd 425. **Nursery School.** (G) Any term, 3 hours. Prerequisite: HAd 320 or HAd 411, 412.

HAd 441. **Economic Problems of the Family.** (G) Winter term, 3 hours. Prerequisite: Ec 211, HAd 340.

HAd 442. **Problems of the Consumer-Buyer.** (G) Fall or spring term, 3 hours. Prerequisite: Ec 211, HAd 340.

HAd 443. **House Planning in Relation to Function.** (G) Spring term, 2 hours. Prerequisite: HAd 320 or HAd 411, 412; HAd 340.

HAd 501. **Research.** Terms and hours to be arranged.

HAd 503. **Thesis.** Terms and hours to be arranged.

HAd 505. **Reading and Conference.** Terms and hours to be arranged.

HAd 507. **Seminar.** Terms and hours to be arranged.

Institution Economics

PROFESSOR: MELISSA HUNTER (department head); ASSISTANT PROFESSOR: GEORGIA CHAPMAN BIBEE

IEc 420. **Institutional Equipment.** (g) Winter term, 3 hours. Prerequisite: HAd 340.

IEc 430. **Institutional Organization and Administration.** (g) Fall term, 2 hours. Prerequisite: HAd 340.

IEc 440. **Institutional Marketing.** (g) Spring term, 2 hours. Prerequisite: HAd 340.

IEc 450. **Institution Experience.** (G) Spring term, 4 hours. Prerequisite: IEc 311, 420, 430, 440.

IEc 501. **Research.** Terms and hours to be arranged.

IEc 503. **Thesis.** Terms and hours to be arranged.

IEc 505. **Reading and Conference.** Terms and hours to be arranged.

IEc 507. **Seminar.** Terms and hours to be arranged.

School of Pharmacy

DEAN: ADOLPH ZIEFLE

Graduate students majoring in pharmacy must take a minor outside the school. The minor is usually taken in the School of Science.

Practical Pharmacy

PROFESSOR: ADOLPH ZIEFLE; ASSISTANT PROFESSOR: ERNEST LESLIE BEALS

Phr 501. **Research.** Terms and hours to be arranged.

Phr 503. **Thesis.** Terms and hours to be arranged.

Phr 505. **Reading and Conference.** Terms and hours to be arranged.

Phr 507. **Seminar.** Terms and hours to be arranged.

Pharmaceutical Analysis

ASSISTANT PROFESSOR: LEWIS CLEMENCE BRITT (in charge of department)

PhA 441. **Toxicology.** (G) Any term, 3 hours. Prerequisite: PhP 333, PhA 321, Ch 227. Britt.

PhA 501. **Research.** Terms and hours to be arranged.

PhA 503. **Thesis.** Terms and hours to be arranged.

PhA 505. **Reading and Conference.** Terms and hours to be arranged.

PhA 507. **Seminar.** Terms and hours to be arranged.

Pharmacology and Pharmacognosy

ASSOCIATE PROFESSOR: ERNST THEODORE STUHR (in charge of department)

PhP 494. **Pharmacological Standardization.** (G) Any term, 3 hours. Prerequisite: PhP 493, Ch 227, Bac 333, Z 203. Stuhr.

- PhP 501. **Research.** Terms and hours to be arranged.
 PhP 503. **Thesis.** Terms and hours to be arranged.
 PhP 505. **Reading and Conference.** Terms and hours to be arranged.
 PhP 507. **Seminar.** Terms and hours to be arranged.

Department of Secretarial Science

DEAN IN CHARGE: VICTOR PIERPONT MORRIS

Secretarial Science

PROFESSOR: HERBERT TOWNSEND VANCE (department head); ASSOCIATE PROFESSOR:
 BERTHA WHILLOCK STUTZ

- SS 436. **Merchandising and Selling.** (g) Winter term, 3 hours. Vance.
 SS 439. **General Advertising.** (g) Spring term, 3 hours. Vance.

Commercial Education

See SCHOOL OF EDUCATION, page 72.

Service Departments

Social Science

ECONOMICS

PROFESSORS: MILTON NELS NELSON (department head), WILLIAM HENRY DREESSEN;
 ASSOCIATE PROFESSOR: ROBERT HORNIMAN DANN

- Ec 413. **Money and Banking.** (g) Spring term, 4 hours. Open to students who have completed a course in introductory economics. Dreesen.
 Ec 418. **Public Finance.** (g) Winter term, 4 hours. Open to students who have completed a course in introductory economics. Dreesen.
 Ec 425. **Labor Problems.** (g) Fall term, 4 hours. Open to students who have completed introductory courses in economics or sociology. Dann.
 Ec 435. **Transportation.** (g) Spring term, 4 hours. Open to students who have completed a course in introductory economics. Dreesen.
 Ec 440. **International Trade.** (g) Fall term, 4 hours. Prerequisite: Ec 201, 202, 203, or Ec 211. Dreesen.
 Ec 475, 476, 477. **Current Economic Theory and Problems.** (g) Three terms, 3 hours each term. Open to students who have completed a course in introductory economics. Nelson.

POLITICAL SCIENCE

PROFESSORS: ULYSSES GRANT DUBACH (department head), FRANK ABBOTT MAGRUDER

- PS 415. **Municipal Government.** (g) Spring term, 3 hours. Magruder.
 PS 417. **International Relations.** (g) Fall term, 3 hours. Magruder.

- PS 418. **Latin-American Relations.** (g) Winter term, 3 hours. Dubach.
 PS 419. **Pacific Area Relations.** (g) Spring term, 4 hours. Dubach.

PSYCHOLOGY

PROFESSOR: OTHNIEL ROBERT CHAMBERS (in charge of department); ASSISTANT PROFESSOR:
 JAMES WILSON SHERBOURNE

- Psy 471, 472, 473. **Individual Differences.** (g) Three terms, 3 hours each term. Prerequisite: Psy 201, 202, 203; or Psy 211 and approval of instructor.

SOCIOLOGY

PROFESSOR: GLENN ALMER BAKKUM (department chairman); ASSOCIATE PROFESSOR:
 ROBERT HORNIMAN DANN

- Soc 411, 412. **Social Problems.** (g) Winter and spring terms, 2 or 3 hours each term. Prerequisite: basic work in general sociology. Bakkum.
 Soc 474. **Social Psychology.** (g) Fall term, 3 hours. Prerequisite: basic work in introductory psychology and introductory sociology. Bakkum.

Business Administration

ASSOCIATE PROFESSORS: FRANK LESLIE ROBINSON, DANIEL BARTON DELOACH;
 ASSISTANT PROFESSOR: BAYARD O. WHEELER

- BA 403. **Special Problems for Technical Students.** (g) Any term, 1 to 5 hours each term.
 BA 414. **Personnel Management.** (g) Fall term, 4 hours. DeLoach.
 BA 463. **Investments.** (g) Spring term, 3 hours. Prerequisite: BA 221, 222, 223. Kelley and Wheeler.
 BA 469. **Business and Agricultural Statistics.** (g) Fall term, 3 hours. DeLoach.
 BA 470. **Business Statistics.** (g) Winter term, 3 hours. Prerequisite: consent of instructor. Wheeler.
 BA 494. **Cost Accounting for Industrials.** (g) Winter or spring term, 3 hours. Prerequisite: BA 386. Robinson and DeLoach.

Physical Education

PROFESSORS: CLAIR VAN NORMAN LANGTON (division director), EVA M. SEEN (department head), RALPH ORVAL COLEMAN; ASSOCIATE PROFESSORS: DELMER ISAAC ALLMAN, HENRIETTA MORRIS, RAYMOND GEORGE NEBELUNG

- Ed 421, 422, 423. **School Health Problems.** (g) Three terms, 2 hours each term.
 PE 421. **Principles of Physical Education.** (g) Fall term, 3 hours.
 PE 422. **Tests and Measurements in Physical Education.** (g) Winter term, 3 hours. Should be preceded by or taken simultaneously with Ed 416 whenever possible.
 PE 423. **Organization and Administration.** (g) Spring term, 3 hours.

University of Oregon Medical School

Graduate Faculty

RICHARD BENJAMIN DILLEHUNT, M.D., Dean of the Medical School; Clinical Professor of Orthopaedic Surgery.

OLOF LARSELL, Ph.D., Sc.D., Dean and Director of the Graduate Division, State System; Professor of Anatomy.

GEORGE REBEC, Ph.D., Dean Emeritus of the Graduate Division, State System.

WILLIAM FITCH ALLEN, Ph.D., Professor of Anatomy.

JOSEPH B. BILDERBACK, M.D., Professor of Pediatrics.

NORMAN A. DAVID, M.D., Professor of Pharmacology.

HENRY HADLEY DIXON, M.D., Clinical Professor Pathology.

RALPH ALBERT FENTON, M.D., Clinical Professor of Otolaryngology, Rhinology, and Laryngology.

HANCE F. HANEY, M.D., Ph.D., Assistant Professor of Physiology.

WARREN CLAIR HUNTER, M.A., M.D., Associate Professor of Pathology.

ARTHUR C. JONES, M.A., M.D., Associate in Anatomy.

THOMAS MARTIN JOYCE, M.D., F.A.C.S., Clinical Professor of Surgery.

FREDERICK ANDREWS KIEHLE, M.D., Clinical Professor of Ophthalmology.

LYLE BOYLE KINGERY, M.D., Clinical Professor of Dermatology.

WILLIAM LEVIN, D.P.H., Instructor in Bacteriology.

IRA A. MANVILLE, M.D., Ph.D., Associate Clinical Professor of Medicine.

FRANK RAYMOND MENNE, M.D., Professor of Pathology.

HARRY JOHNSON SEARS, Ph.D., Professor of Bacteriology.

LAURENCE SELLING, M.D., Clinical Professor of Medicine.

JOHN GUY STROHM, M.D., Clinical Professor of Urology.

WILBERT R. TODD, Ph.D., Assistant Professor of Biochemistry.

RAYMOND EDWARD WATKINS, M.D., F.A.C.S., Clinical Professor of Obstetrics and Gynecology.

ADOLPH WEINZIRL, M.D., Clinical Professor of Bacteriology.

EDWARD STAUNTON WEST, Ph.D., Professor of Biochemistry.

Graduate Work at the Medical School

THE preclinical departments of Anatomy, Bacteriology and Hygiene, Biochemistry, Pathology, Pharmacology, and Physiology of the University of Oregon Medical School accept selected students as candidates for the Master of Arts, Master of Science, and Doctor of Philosophy degrees. Work toward these degrees is offered as an integral part of the program of the Graduate Di-

vision of the State System, and is subject to the rules and regulations of the Graduate Division. A graduate student wishing to work in these fields at the Medical School should consult the head of the department in which he plans to study and the dean of the Graduate Division.

In addition to opportunities for graduate study and research in the preclinical departments, arrangements may be made for special study of clinical problems by experimental methods, through the cooperation of the preclinical and clinical departments. In some cases, students doing work of this kind may qualify for graduate degrees.

A reading knowledge of French or German is required of all students working toward a master's degree (Master of Arts or Master of Science) at the Medical School. Candidates for the Doctor of Philosophy degree must demonstrate a reading knowledge of both French and German.

Graduate degrees earned at the Medical School by students preparing for a medical career and by students who have the M.D. degree are conferred by the University. Graduate degrees earned by nonmedical students in preclinical fields are conferred by the State College.

The Library of the Medical School contains about 25,000 volumes, including files of the important medical journals. A total of 403 journals and 74 public health reports are regularly received. The Library is developing a collection in medical history; it has at present a number of rare medical classics, and is collecting copies of medical books owned by Marcus Whitman. Construction is now in progress on a new library and auditorium building on the Medical School campus, which will provide excellent facilities for the shelving and use of the Library's collections.

The Pathological Museum is comprehensive. Gross and microscopic tissues are received from surgical clinics of the several affiliated hospitals and from coroner's and other autopsies.

Fees and Living Expenses. Graduate students at the Medical School who are registered for seven term hours of work or more pay a fee of \$26.50 per term. Graduate students registered for six term hours or less pay a fee of \$3.00 per term hour. Graduate students do not pay the nonresident fee.

Necessary living expenses for students at the Medical School, apart from fees, average between \$30.00 and \$40.00 a month for the academic year.

Anatomy

PROFESSORS: WILLIAM FITCH ALLEN (department head), OLOF LARSELL;
ASSOCIATE: ARTHUR C. JONES

An 411, 412, 413. **Gross Anatomy.** (G) Three terms, 6 hours fall, 8 hours winter, 4 hours spring term. Larsell, Jones, and assistants.

An 414. **Histology and Organology.** (G) Fall term, 6 hours. Larsell and assistants.

An 415. **Embryology.** (G) Winter term, 4 hours. Allen and assistants.

An 416. **Microscopic Technique.** (G) Winter term, 2 hours. Limited to twelve students. Registration only after consultation with instructor. Larsell.

An 501. **Research.** Any term, hours to be arranged. Allen and Larsell.

An 505. **Reading and Conferences.** Any term, hours to be arranged. Allen and Larsell.

- An 507. **Seminar and Journal Club.** Any term, hours to be arranged. Allen.
- An 511. **Neurology and Organs of Special Senses.** Spring term, 4 hours. Prerequisites: An 411-415. Allen and assistants.
- An 512. **Advanced Histology.** Winter term, hours to be arranged. Prerequisites: An 414, 415. Limited to twenty students. Larsell.
- An 513. **Topographical Anatomy.** Spring term, 1 or 2 hours. Prerequisites: An 411, 412, 413. Limited to fifteen students. Allen and assistant.
- An 514. **Special Dissections.** Term and hours to be arranged. Prerequisites: An 411, 412, 413.
- An 516. **Mechanism of the Central Nervous System Studied from Lesions.** Spring term, hours to be arranged. Prerequisite: An 511. Limited to eight students. Allen.
- An 517. **Comparative Neurology.** Winter or spring term, hours to be arranged. Larsell.

Bacteriology, Hygiene, and Public Health

PROFESSORS: HARRY JOHNSON SEARS (department head), ADOLPH WEINZIRL;
INSTRUCTOR: WILLIAM LEVIN

- Bac 413. **Medical Bacteriology and Immunology.** (G) Spring term, 6 hours. Sears and Levin.
- Bac 414. **Medical Bacteriology and Immunology.** (G) Fall term, 4 hours. Sears and Levin.
- Bac 501. **Research in Bacteriology and Immunity.** Hours to be arranged. Sears.
- Bac 505. **Reading and Conferences.** Any term, hours to be arranged. Sears.
- Bac 507. **Seminar in Bacteriology and Immunity.** Any term, 1 hour each term. Sears.
- Bac 508. **Advanced Bacteriology and Immunology.** Any term, hours and credits to be arranged. Sears.
- Bac 511. **Principles of Public Health.** Winter term, 1 hour. Sears and Weinzirl.

Biochemistry

PROFESSOR: EDWARD STAUNTON WEST (department head);
ASSISTANT PROFESSOR: WILBERT R. TODD

- BCh 411, 412. **Biochemistry.** (G) Fall and winter terms, 11 hours (total). West, Todd, and assistants.
- BCh 501. **Biochemistry Research.** Any term, hours to be arranged. West and Todd.
- BCh 505. **Reading and Conferences.** Any term, hours to be arranged. West.
- BCh 512. **Advanced Biochemistry.** Spring term, hours to be arranged. Prerequisites: BCh 411 and 412. West.

Pathology

PROFESSORS: FRANK RAYMOND MENNE (department head), HENRY HADLEY DIXON;
ASSOCIATE PROFESSOR: WARREN CLAIR HUNTER

- Pth 501. **Research.** Any term, hours to be arranged. Menne or Hunter.
- Pth 505. **Reading and Conferences.** Any term, hours to be arranged. Menne.

- Pth 511. **General Pathology.** Fall term, 6 hours. Menne and assistants.
- Pth 512. **General Pathology.** Winter term, 6 hours. Hunter and assistants.
- Pth 514. **Gynecological and Obstetrical Pathology.** Fall term, 1½ hours. Menne, Hunter, and assistants.
- Pth 515. **Laboratory Neuropathology.** Fall term, 1 hour. Dixon, Menne, Hunter, and assistants.
- Pth 516. **Advanced Systemic Pathology.** Any term, hours to be arranged. Menne or Hunter.
- Pth 517. **Advanced Pathological Histology.** Any term, hours to be arranged. Open to students who have had at least one term's work in pathology. Menne.
- Pth 518. **Special Pathology of Heart and Circulation.** Spring term, hours to be arranged. Hunter.

Pharmacology

PROFESSOR: NORMAN A. DAVID (department head)

- Phc 501. **Research.** Any term, hours to be arranged. David.
- Phc 505. **Reading and Conferences.** Any term, hours to be arranged. David.
- Phc 507. **Seminar.** Spring term, 2 hours. David.
- Phc 511. **Systematic Pharmacology and Prescription Writing.** Winter term, 6 hours. David.
- Phc 512. **Systematic Pharmacology and Pharmacodynamics.** Spring term, 6 hours. David.
- Phc 513. **Toxicology.** Spring term, ¼ hour. David.
- Phc 514. **Toxicological Analysis.** Spring term, 2 hours. Limited to sixteen students. David.
- Applied Pharmacology.* Given in conjunction with Med 624, 625, 626.

Physiology

ASSISTANT PROFESSOR: HANCE F. HANEY

- Phy 411. **Blood, Circulation, and Respiration.** (G) Spring term, 5 hours. Prerequisites: BCh 411, 412. Haney and assistants.
- Phy 412. **Digestion, Metabolism, Absorption, Secretion, Excretion, Muscle, and Heat.** (G) Fall term, 5 hours. Prerequisite: Phy 411. Haney and assistants.
- Phy 413. **Nervous System and Senses.** (G) Winter term, 5 hours. Prerequisites: An 411, 412, 413. Haney and assistants.
- Phy 414. **History of Physiology.** (G) Winter term, 1 hour. Limited to ten students.
- Phy 501. **Research.** Any term, hours to be arranged. Haney.
- Phy 505. **Reading and Conferences.** Any term, hours to be arranged. Haney.
- Phy 507. **Seminar.** Any term, hours to be arranged.
- Phy 511. **Physiology of the Glands of Internal Secretion.** Spring term, 2 hours. Prerequisites: Phy 411, 412, 413. Limited to eight students.
- Phy 512. **Studies in Metabolism.** Fall term, 2 hours. Prerequisites: Phy 411, 412, 413. Haney.

Portland Extension Center

Graduate Faculty

- ALFRED POWERS, A.B., Dean and Director of General Extension.
- OLOF LARSELL, Ph.D., Sc.D., Dean and Director of the Graduate Division, State System; Professor of Anatomy.
- GEORGE REBEC, Ph.D., Dean Emeritus of the Graduate Division, State System.
-
- JOHN C. ALMACK, Ph.D., Professor of Education, Stanford University.
- WILLIAM GILBERT BEATTIE, B.A., Associate Professor of Education, General Extension Division; Head of Department of Social Welfare.
- LOUIS BERELSON, Ph.D., Adviser in General Studies, Portland Center.
- NELSON L. BOSSING, Ph.D., Professor of Education, University of Oregon.
- DAN ELBERT CLARK, Ph.D., Professor of History, University of Oregon; Assistant Director of General Extension and Summer Sessions.
- ROBERT CARLTON CLARK, Ph.D., Professor of History and Head of Department, University of Oregon.
- NEWEL H. COMISH, Ph.D., Professor of Business Administration, University of Oregon.
- JOHN T. GANOE, Ph.D., Associate Professor of History, University of Oregon.
- ALEXANDER GOLDENWEISER, Ph.D., Professor of Thought and Culture, Portland Center.
- CARL L. HUFFAKER, Ph.D., Professor of Education, University of Oregon.
- WILBUR S. HULIN, Ph.D., Instructor in Psychology, Portland Center.
- JAMES R. JEWELL, Ph.D., Dean of Education and Director of High School Teacher Training, State System; Professor of Education.
- LEWIS C. MARTIN, Ph.D., Assistant Director of Department of Research and Handicapped Children, Portland Public Schools.
- ELIZABETH MONTGOMERY, Ph.D., Assistant Professor of Education, University of Oregon.
- VICTOR P. MORRIS, Ph.D., Dean and Director of Business Administration, State System; Professor of Economics, University of Oregon.
- MABLE HOLMES PARSONS, M.A., Professor of English, Portland Center.
- HENRY F. PRICE, Ph.D., Professor of Mathematics, Pacific University.
- CARL W. SALSER, Ed.M., Assistant Dean of the School of Education and Professor of Education, Oregon State College.
- S. STEPHENSON SMITH, B.Litt. (Oxon.), Professor of English, University of Oregon.
- JOHN A. SPAULDING, Ph.D., Professor of German, Portland Center.

Graduate Work at the Portland Center

If adequate course offerings are available for an integrated program in the fields in which the student wishes to work, he may complete all the requirements for the Master of Arts (General Studies) degree at the Portland Center. In a number of fields, one-third of the work for the Master of Arts (Departmental) or the Master of Science degree may be earned in Portland. Graduate work beyond the master's degree is not offered at the Portland Center. Graduate degrees earned at the Portland Center are awarded by the University or the State College according to major subject, in harmony with the 1932 allocation of curricula and degrees.

For regulations concerning the M.A. (General Studies) degree, see page 13. Students interested in working toward this degree at the Portland Center should consult Dr. Louis Berelson, general-studies adviser, at the Portland Center office, 814 Oregon Building, before beginning graduate study. Before admission to candidacy, the student must submit a tentative program for the approval of the General Studies Committee at the University or the State College, and must show the organic relationship of all the courses included.

Library Facilities. The resources of the following libraries in Portland are available to students in the Portland Center:

Library Association of Portland, 801 S.W. 10th Avenue. Open from 9:00 a.m. to 9:00 p.m. on weekdays, and from 2:00 p.m. to 9:00 p.m. on Sunday. The Portland Library contains more than 600,000 volumes, in addition to 160,000 pamphlets, prints, and maps; 276 newspapers and 1,296 periodicals are regularly received. Books used in Portland Center courses are kept on reserve in the Reference Room. The reserve collections include books purchased by the Portland Center for student use, and books borrowed from the University and State College libraries. The 530,876 volumes in the libraries of the Oregon State System of Higher Education are available to Portland Center students through interlibrary loans.

Library of the Oregon Historical Society, Municipal Auditorium, 1520 S.W. 3rd Avenue. Open from 9:00 a.m. to 5:00 p.m. from Monday to Friday, and from 9:00 a.m. to 12:00 noon on Saturday. The Historical Society Library contains 13,500 bound books and pamphlets, including publications of various state historical societies; 30,000 manuscripts related to the history of Oregon; and 2,300 bound volumes of Oregon newspapers.

Reed College Library, Eastmoreland. Open from 8:00 a.m. to 10:00 p.m. on weekdays, and from 2:00 p.m. to 10:00 p.m. on Sunday. Contains 60,000 volumes carefully selected to meet the needs of a liberal-arts college.

University of Oregon Medical School Library, Marquam Hill. Open from 8:30 a.m. to 9:30 p.m. on weekdays. Contains 25,000 books and receives 403 current journals.

Library of Oregon Social Hygiene Society, Pittock Block. Open from 9:00 a.m. to 5:00 p.m. on weekdays. Contains 2,000 books and pamphlets.

Portland Art Association Library, S.W. Park and Madison streets. Open from 10:00 a.m. to 5:00 p.m. on weekdays. Contains 2,000 volumes.

Fees. Graduate students in the Portland Extension Center and in other extension centers pay the following regular registration fees:

1 or 2 hours	\$ 6.00	7 hours	\$17.00
3 hours	8.50	8 hours	19.00
4 hours	11.00	9 hours	21.00
5 hours	13.00	10 hours	23.00
6 hours	15.00		

Other Extension Centers. A limited amount of graduate work is offered at the Salem Extension Center. Graduate courses are also sometimes arranged at the Eugene and Corvallis extension centers, when there is sufficient demand. Graduate credit is not granted for work taken in other extension centers in the state, nor for correspondence study.

Graduate Courses 1938-39

For graduate courses offered in the Portland Center during the 1939-40 session, see the 1939-40 Portland Extension Center Announcements.

Business Administration

PROFESSOR: NEWEL HOWLAND COMISH

- BA 436p. **Merchandising.** (G) Fall and winter terms, 2 hours each term. Comish.
 BA 501p. **Advanced Business Research.** Three terms, 2 or 3 hours each term. Comish.

Economics

PROFESSOR: VICTOR PIERPONT MORRIS

- Ec 441p. **International Economic Policies.** (G) Spring term, 2 hours. Morris.
 Ec 446p. **Economic Problems of the Pacific.** (G) Fall and winter terms, 2 hours each term. Morris.
 Ec 503. **Thesis.** Three terms, hours to be arranged. Morris.
 Ec 505. **Reading and Conference.** Three terms, 2 hours each term. Morris.

Education

PROFESSORS: JAMES RALPH JEWELL, CARL WALTER SALSER, NELSON LOUIS BOSSING, CARL LEO HUFFAKER, JOHN C. ALMACK; ASSOCIATE PROFESSOR: WILLIAM GILBERT BEATTIE; ASSISTANT PROFESSOR: ELIZABETH MONTGOMERY; DR. LEWIS C. MARTIN

- Ed 424p, 425p. **Problems in Curriculum Construction.** (G) Two terms, 2 hours each term. Bossing.
 Ed 441p. **The Problem Child: Delinquency.** (G) Spring term, 2 hours. Martin.
 Ed 451p. **Liberalism and Modern Education.** (G) Fall term, 2 hours. Almack.
 Ed 457p. **Social Education: Teacher Personnel Problems.** (G) Fall term, 2 hours. Almack.

- Ed 461p. **Psychology of Childhood.** (G) Fall term, 2 hours. Martin.
 Ed 464p. **Remedial Reading.** (G) Fall and winter terms, 2 hours each term. Montgomery.
 Ec 446p. **Economic Problems of the Pacific.** (G) Fall and winter terms, Montgomery.
 Ed 468p. **Hygiene of Learning.** (G) Spring term, 2 hours. Montgomery.
 Ed 472p. **Basic Course in School Administration: Organization.** (G) Fall term, 2 hours. Almack.
 Ed 486p. **Current Occupational Trends.** (G) Fall term, 2 hours. Salsler.
 Ed 487p. **Counseling.** (G) Winter term, 2 hours. Salsler.
 Ed 503. **Thesis.** Three terms, hours to be arranged. Jewell, Huffaker, and Bossing.
 Ed 507. **Education Seminar.** Three terms, hours to be arranged. Jewell and Huffaker.
 Ed 507p. **Seminar in Guidance.** Spring term, 2 hours. Prerequisite: course in guidance. Salsler.
 Ed 511p. **Modern Educational Principles and Problems.** Fall and winter terms, 2 hours each term. Huffaker.
 Ed 561. **Advanced Educational Psychology.** Spring term, 2 hours. Prerequisite: graduate standing in education. Huffaker.

English

PROFESSORS: MABLE HOLMES PARSONS, S. STEPHENSON SMITH

- Eng 447p, 448p, 449p. **Seventeenth-Century Literature.** (G) Three terms, 2 hours each term. Parsons.
 Eng 462, 463, 464. **The Psychological Novel since 1890.** (G) Three terms, 2 hours each term. Smith.
 Eng 503. **Thesis.** Three terms, hours to be arranged. Parsons and Smith.
 Eng 507p. **Seminar.** Three terms, 2 or 3 hours each term. Parsons.
 Eng 507. **Seminar in Special Authors.** Three terms, 2 or 3 hours each term. Smith.

German

PROFESSOR: JOHN A. SPAULDING

- GL 503. **Thesis.** Three terms, hours to be arranged. Spaulding.
 GL 507. **Seminar.** Three terms, 2 hours each term. Spaulding.

History

PROFESSORS: ROBERT CARLTON CLARK, DAN E. CLARK, ALEXANDER GOLDENWEISER; ASSOCIATE PROFESSOR: JOHN T. GANOE

- Hst 414p, 415p. **European Thought and Culture.** (G) Winter and spring terms, 2 hours each term. Goldenweiser.
 Hst 431p. **The Renaissance.** (G) Fall term, 2 hours. Ganoe.
 Hst 432p. **The Reformation.** (G) Winter term, 2 hours. Ganoe.

- Hst 433p. **The Age of Louis XIV.** (G) Spring term, 2 hours. Ganoë.
- Hst 457p. **Recent Russia: Revolution and the Soviet Union.** (G) Fall term, 2 hours. Goldenweiser.
- Hst 460, 461. **History of Civilization in the United States.** (G) Winter and spring terms, 2 hours each term. Dan E. Clark.
- Hst 501. **History Research.** Three terms, 2 or 3 hours each term. R. C. Clark and Dan E. Clark.
- Hst 503. **Thesis.** Three terms, hours to be arranged. R. C. Clark.
- Hst 505. **Reading and Conference.** Three terms, 2 or 3 hours each term. R. C. Clark and Dan E. Clark.

Mathematics

PROFESSOR: HENRY F. PRICE

- *Mth 406p. **Advanced Studies: Theory of Numbers.** (G) Three terms, 2 hours each term. Price.
- *Mth 413p. **Advanced Analytical Geometry.** (G) Three terms, 2 hours each term. Price.

Psychology

INSTRUCTOR: WILBUR S. HULIN

- Psy 421p, 422p, 423p. **Contemporary Psychology.** (G) Three terms, 2 hours each term. Hulin.
- Psy 501. **Research.** Three terms, hours to be arranged. Hulin.
- Psy 507. **Seminar in Psychology.** Three terms, hours to be arranged. Hulin.

Sociology

PROFESSOR: ALEXANDER GOLDENWEISER

- Soc 454p, 455p, 456p. **History of Social Control.** (G) Three terms, 2 hours each term. Goldenweiser.
- Soc 501. **Social Research.** Three terms, hours to be arranged. Goldenweiser.
- Soc 505. **Reading and Conference.** Three terms, hours to be arranged. Goldenweiser.

* Either Mth 406p or Mth 413p will be given, but not both.

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